Prepared by:
Wilmington District
South Atlantic Division

US Army Corps of Engineers

Princeville, North Carolina, Flood Risk Management General Reevaluation Report

with Integrated Environmental Assessment Review Plan

September 2025

Date of RMO Endorsement of Review Plan: 23 July 2025

Date of MSC Approval of Review Plan: September 2025

Date of IEPR Exclusion Approval: September 2025

Has the Review Plan changed since RMO Endorsement? N/A

Date of Last Review Plan Revision: None

Date of Review Plan web posting: Pending

See Appendix 1: Review Plan Change Log

Signatures

Prepared by: [redacted]

Review Management Organization Endorsement by: [redacted]

Major Subordinate Command Approved by: [redacted]

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1 Overview

1.1 Purpose of Review Plan

This Review Plan (RP) defines the scope and level of review for the planning decision document developed for Princeville, NC, Flood Risk Management GRR. The scope and level of review required is based upon a preliminary assessment of the magnitude of project risks (ER 1165-2-217, Civil Works Review Policy), as well as project model user coordination to comply with CECW-P memo (28 July 2023), *Model Coordination for Civil Works Planning.*

As part of the Project Management Plan (PMP), this RP establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products and lays out a risk-informed, value-added process providing the scopes of review for the current phase of work.

1.2 References

- Engineer Regulation (ER) 1165-2-217, Civil Works Review Policy, 2 Sep 2024
- ER 1105-2-103: Policy for Conducting Civil Works Planning Studies, 7 Nov 2023, which supersedes ER 1105-2-100, Chapters 1,2, and 3, dated 22 Apr 2000
- Engineer Circular (EC) 1105-2-412, Assuring Quality of Planning Models, 31 March 2011
- Planning Bulletin 2013-02, Assuring Quality of Planning Models, 31 Mar 2013
- CECW-P Memorandum, Model Coordination for Civil Works Planning Studies, 28 Jul 2023
- "Model Coordination and Model User Documentation" form (request from appropriate Planning Center of Expertise (PCX))
- Enterprise Standard (ES) 081010, Software Validation for the Hydrology, Hydraulics and Coastal Community of Practice (HH&C CoP)
- ER 5-1-11, Management—U.S. Army Corps of Engineers (USACE) Business Process, 31 Jul 2018
- ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999
- Director's Policy Memorandum, 2018-05, Improving Efficiency and Effectiveness in USACE Civil Works Project Delivery (Planning Phase and Planning Activities), 03 May 2018
- Director of Civil Works Memorandum, Delegation of Model Certification, 11 May 2018
- Director's Policy Memorandum 2019-01, Policy and Legal Compliance Review, 09 Jan 2019
- Office of Management and Budget, Final Information Quality Bulletin for Peer Review, Federal Register Vol. 70, No. 10, 14 Jan 2004, pp 264-267
- Engineering Pamphlet (EP) 1105-2-61, Planning Feasibility and Post Authorization Study Procedures and Report Processing Requirements, 1 Jul 2023.

1.3 Review Management Organization

The Review Management Organization (RMO) is the designated USACE organization overseeing quality reviews by reviewing and endorsing the RP. The Flood Risk Management Planning Center of Expertise (FRM-PCX) is the RMO for this project. The RMO's roles and responsibilities are outlined in ER 1165-2-217.

1.4 Designated Points of Public Contact for Review Plan Questions or Comments

- District: Planning Lead, 910-251-4910
- Major Subordinate Command (MSC): SAD Agreements Manager, District Support Team, 404-562-5225
- Review Management Organization (RMO): FRM-PCX Regional Manager for SAD, 314-331-8404

1.5 Levels of Review of Planning Decision Documents

All planning products are subject to the conduct and completion of District Quality Control (DQC) and Agency Technical Review (ATR), Policy and Legal Review, and a smaller sub-set may be subject to Independent External Peer Review (IEPR). Both planning models and engineering models used in planning decision documents must meet requirements regarding both model users and model certification or approval for use in the planning study. Table 1 summarizes the reviews to be performed for this project. The details of each are provided in later sections of this RP.

Any required review that will not be performed for this study is documented in the appropriate section of this RP, explaining the risk-informed decision not to undertake that review.

Table 2 summarizes the anticipated deliverables/work products that are expected to be reviewed during the project development and the schedule for their delivery. Table 2 also includes the timing and sequence of the reviews (including deferred reviews) and anticipated costs. The specific expertise required for the teams and other relevant information are identified in later sections of this RP covering each facet of review.

Table 1. Study Required Coordination and Review

TYPE OF REVIEW	**Included**	**LOCATION OF DISCUSSION IN RP**
Model User Coordination	Yes	Section 3
Model Approval/Certification Review	No	Section 3
District Quality Control (DQC)	Yes	Section 4
Agency Technical Review (ATR)*	Yes	Section 5
Interim Stage Work Product ATR	Yes	Section 5
Policy and Legal Compliance Review (P&LCR)	Yes	Section 6
Independent External Peer Review	No	Section 7/ Appendix 2
Public Review	Yes	Section 8

1.6 Required Review Team Expertise

Table 3 identifies the specific technical discipline and expertise required for the members of each review team. In most cases, the team members will be senior professionals in their respective fields. In general, the technical disciplines identified will be the same for the DQC and ATR teams.

Each ATR team member will be certified to conduct ATR by their community of practice. To serve as an Engineering and Construction reviewer on an ATR Team, USACE personnel must be listed in the Corps of Engineers Reviewer Certification and Access Program (CERCAP).

1.7 Required Disclaimer on Documents Distributed Outside the Government

For information distributed for review to non-governmental organizations, the following disclaimer will 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.”

Table 2 Schedule and Costs of Reviews Overview

Review Management Organization Coordination & Participation: The RMO will participate in milestone meetings, in-progress reviews, issue resolutions, and review of this RP. Estimated Cost: $25,000

PRODUCT TO UNDERGO REVIEW	Review Level	Site Visit	Start Date	End Date	Estimated Cost	Complete
Planning Model User Coordination Review (See details in Chapter 3)	Appropriate PCX	n/a	DD/MM/YY	DD/MM/YY	$XXXXX	Yes/No
Engineering Model User Coordination Review (See details in Chapter 3)	Appropriate functional CoP	n/a	DD/MM/YY	DD/MM/YY	$XXXXX	Yes/No
HEC-HMS model/HEC-RAS 2D model - FWOP	DQC	n/a	1/13/26	1/16/26	$6,000	No
HEC-RAS 2D models/PCSWMM model – FWP	DQC	n/a	1/30/26	2/4/26	$6,000	No
HEC-RAS 2D models – FWOP/FWP	DQC	n/a	2/3/26	2/6/26	$6,000	No
PCSWMM model review	Approval of use review	n/a	2/6/26	2/25/26	$6,500	No
HEC-RAS 2D models – FWOP/FWP	Targeted ATR	n/a	2/9/26	2/25/26	$9,000	No
Draft Report with integrated NEPA Document	DQC	TBD	1/22/27	2/12/27	$25,000	No
	Public	n/a	4/20/27	5/20/27	n/a	No
	ATR	TBD	2/15/27	3/29/27	$50,000	No
	P&LCR	TBD	3/22/27	4/19/27	$0	No
Final Report with integrated NEPA Document	DQC	TBD	9/17/27	10/1/27	$15,000	No
	ATR	TBD	10/4/27	11/1/27	$22,000	No
	P&LCR	TBD	11/2/27	11/22/27	$0	No
	Public Release	n/a	11/24/27	3/30/28	$0	No

Table 3 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.	Yes	No
ATR Team Lead	Professional with extensive experience in 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	No	Yes
Plan Formulation	A senior water resources plan formulator with experience in large scale water resources projects with experience in 6-step planning, process including identifying problems, objectives, opportunities, and constraints; development and use of formulation strategies, Risk Informed Planning, and applicable authorities and planning policies. Certified to perform agency technical review for plan formulation.	Yes	Yes
Economics	Experience with applying theory, methods and tools used in the economic evaluation of water resources projects. Experience using LifeSim model. Certified to perform agency technical review for economics.	Yes	Yes
Environmental Compliance	Experience with environmental evaluation and compliance requirements, national environmental laws and statutes, and applicable Executive Orders. Certified to perform agency technical review for environmental compliance.	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
Cost Engineering	Experience using cost estimation software; working knowledge of water resource project construction; capable of making professional determinations using experience.	Yes	Yes
Hydrology	Engineer with experience applying hydrologic principles and technical tools to project planning, design, construction and operation.	Yes	Yes
Hydraulic Engineering	Engineer with experience applying hydraulic engineering principles and analytic tools to project planning, design, construction and operations.	Yes	Yes
Design Engineering	Civil engineer with experience applying levee design, interior drainage and site design principles and regulations to project planning, design, construction and operations. The person should be certified in CERCAP to review under the 'Civil engineering: Sitework – Levees & Floodwalls' category.	Yes	Yes
Geotechnical Engineer	Engineer with experience applying geotechnical engineering principles and analytic tools to data evaluation, project planning, design, construction and operations. Additionally, experience with dam and levee safety.	Yes	Yes
Real Estate	Certified for Flood Risk Management by the Real Estate CoP to perform technical review.	Yes	Yes

Infrastructure & Installation Resilience	A member of the Infrastructure and Installation Resilience Community of Practice (IIR CoP) knowledgeable of the current policies, policies, methods and tools related to the consideration of changing conditions when analyzing inland hydraulics and hydrology, and infrastructure resilience (prepare, absorb, recover, and adapt) for water resources project. Subject matter expert recognized by the IIR Leadership and certified to perform technical review in CERCAP.	Yes	Yes
Risk and Uncertainty	For decision documents involving hydrologic, hydraulic risk management measures, include on the ATR team an expert on multi-discipline flood risk analysis to ensure consistent and appropriate identification, analysis, and written communication of risk and uncertainty.	No	Yes

2 Project Background

2.1 Project Name

Princeville Flood Risk Management GRR

2.2 Location

Town of Princeville, Edgecombe County, North Carolina

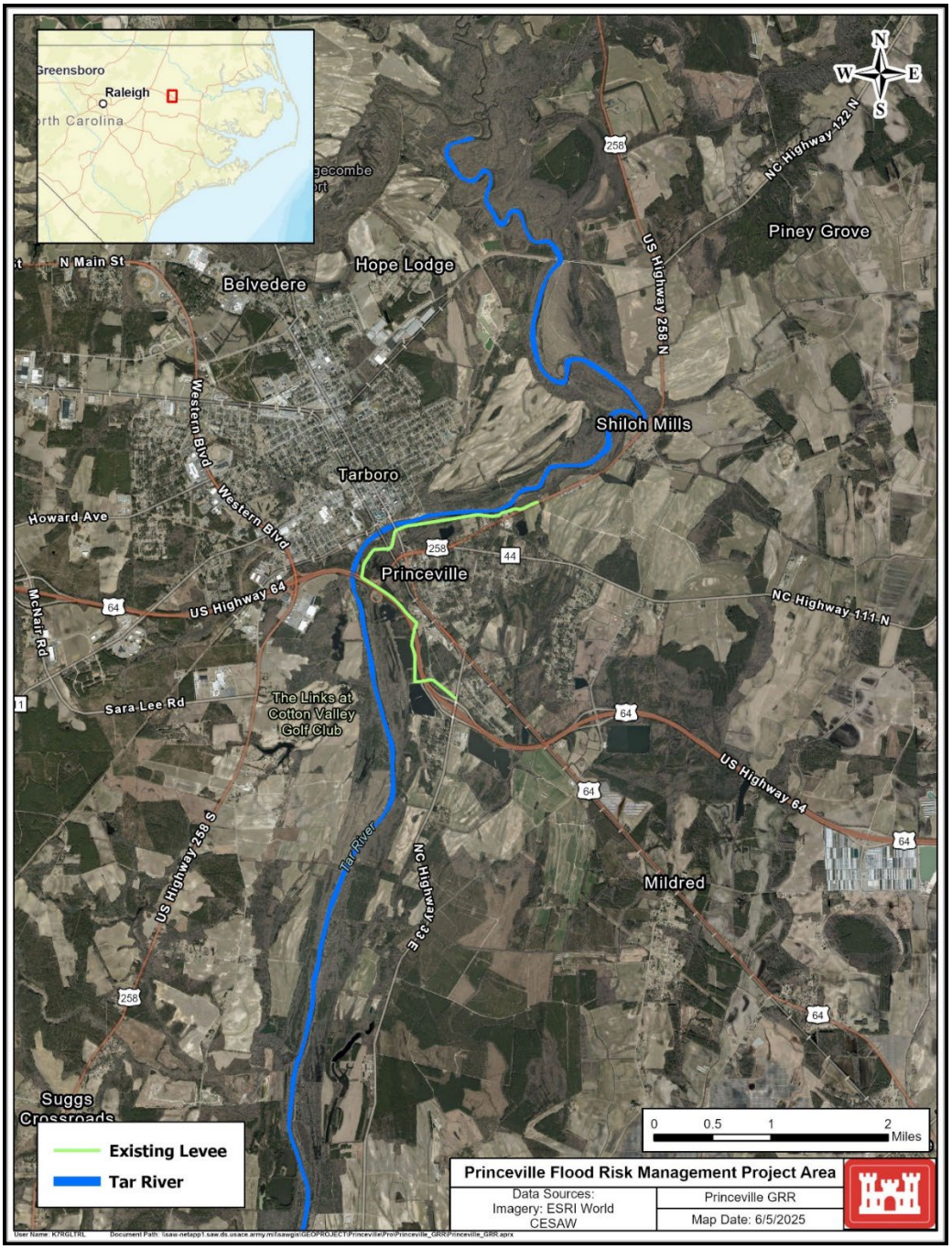

Figure 1 Project Area Map]

2.3 Study Authority

This General Reevaluation Report (GRR) is being conducted under the authority of Section 216 of the Flood Control Act of 1970, 33 U.S.C. 549a. This same authority was used to conduct the 2015 feasibility study for potential modifications to the existing project, which was originally built in 1967. The original 1967 project was authorized under Section 205 of the Flood Control Act of 1948, as amended. Funding for this GRR is being provided under the Disaster Recovery Act (DRA) of 2019 Investigations.

2.4 Sponsor

North Carolina Department of Environmental Quality

2.5 Authorized Project Purpose(s)

Flood Risk Management

2.6 Project Area Description

The historical Town of Princeville, population approximately 1,281 based on 2024 US Census data, is located in the east central area of Edgecombe County, North Carolina (see Figure 1 on previous page). The city limits encompass a 1.6 square-mile area in the alluvial floodplain located on the west descending bank of the Tar River, immediately across from the Town of Tarboro, North Carolina (the County seat Edgecombe County). The study area is located in the eastern portion of North Carolina in the 1st Congressional District.

The Tar-Pamlico River Basin lies entirely within the State of North Carolina. It has a total drainage area of approximately 3,610 square miles, of which approximately 2,140 square miles are located upstream from the towns of Tarboro and Princeville. The basin is approximately 160 miles long and has an average width of 30 miles. The land within the Tar-Pamlico basin is primarily agricultural with some manufacturing and lumbering. Rocky Mount, Tarboro, Princeville, Greenville, Henderson, and Washington are among the towns located within the basin.

2.7 Problem Statement

In 1967, USACE constructed a flood risk management project in the form of a levee for the Town of Princeville, NC. Although this existing project provides some protection, it has been inadequate against recent flood events (1999 and 2016). A new USACE project was authorized in 2016 to improve the levee system,but was never constructed due to projected induced flooding impacts identified during detailed design. Flood risk in the Town of Princeville has historically impacted, and continues to threaten:

1. Destruction of public and private property
2. Life and safety
3. Economic development
4. Community cohesion and sustainability

2.8 Future With and Without Project Conditions

The Princeville community under Future Without-Project (FWOP) Conditions assumes that there would be no new USACE flood risk management measure developed and implemented. There continue to be other efforts to assist Princeville by the State of North Carolina. These include the purchase of a 53-acre site by the State of North Carolina in the vicinity of Princeville for the

purpose of providing a new home for the Towns municipal and emergency facilities as well as public spaces, retail and public housing. However, at present, cost estimates to implement this project have increased significantly since it was approved in 2019, and the status to complete the original plans in their entirety is uncertain. Outside of a future USACE FRM project, there are no planned projects which would significantly reduce flood risk for Princeville. FWOP assumes that Princeville will continue to be at risk of flooding which will threaten destruction of property, life-safety, negatively impact economic development and undermine community cohesion. These continued concerns were expressed by citizens of the Town at a 12 June 2025 public meeting with USACE.

2.9 Project Goals and Objective

The goal of this GRR is to reevaluate structural and nonstructural flood risk management alternatives and identify implementable engineering solutions to manage flood risk in Princeville, NC.

Objectives to be achieved within the Town of Princeville over a 50-year period of analysis (e.g. 2031-2080) are based on the problems and opportunities identified, and are consistent with the intent of the aforementioned project authorization. These are:

1. Reduce risk of flood impacts to property
2. Reduce risks to health and life-safety posed by flooding
3. Increase resiliency of the local economy to riverine flood events
4. Strengthen community cohesion

2.10 Types of Potential Measures/Alternatives Being Considered:

This study will develop a comprehensive plan to address the need for flood risk management for the Town of Princeville, NC. An array of structural and non-structural alternatives will be formulated to address study objectives. Measures to be evaluated could include upstream water impoundments, levee modifications or realignments, bypass channels, bridge modifications, and drainage modifications. Additionally, elevation or removal of structures, floodproofing of structures, relocation of structures, zoning changes and flood risk management communication will be considered. Evaluations will include combining measures. The alternatives will be screened in an iterative manner. Early screening will be based on qualitative information, rough order of magnitude numbers and professional judgement. As fewer and fewer alternatives remain, increasing details and quantitative assessments will be performed.

2.11 Estimated Project Costs:

Costs of alternatives are unknown at this time but given the size of the area and the problem complexity, costs have the potential to be over $200 million for one or more alternatives.

2.12 Risk Identification:

ER 1165-2-217 requires review plans to document relevant study risk and related issues, including key assumptions and any constraints, in enough detail to support the decisions on the appropriate level of review and types of expertise to be represented on the various review teams.

- A comprehensive plan for this type of study has a likelihood of exceeding $200 million in costs.

- The current authorized project from the 2016 feasibility study was never constructed due to potential induced flooding damages identified during preconstruction, engineering and design (PED) phase. This GRR will need to manage the same issue.
- There is high potential for this study to recommend a project which is not justified solely on national economic development (NED) benefits.

The following questions were used to assess relevant study risks and inform decisions on the level of review and expertise on review teams:

- Will the study likely be challenging? If so, how so? **Yes, it may be complex to identify a solution which reduces flood risk in Princeville while avoiding or minimizing induced flooding in other area.**
- Is the project likely to be justified by life safety or is the study or project likely to involve significant life safety concerns? **The District Chief of Engineers has assessed the potential for life risk and determined that while life safety is a factor for this type of study, it is not likely to justify the project on its own. However, other aspects of the Other Social Effects (OSE) Account are likely to contribute to the project's justification significantly, in addition to life safety.**
- 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? **Not likely. One of the study objectives is assist the Town of Princeville, which itself is a significant historic and cultural resource, to be more resilient and protected. Any adverse impacts to other resources would be avoided or minimized.**
- 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? **The project is not expected to have substantial adverse impacts. Measures which would have substantial impacts (e.g. dredging/deepening of the river) are anticipated to be screened. The PDT sees an opportunity to claim environmental benefits through measures such as reclaiming of the floodplain.**

2.13 Current Project Milestone Schedule

ACTIVITY	SCHEDULED	ACTUAL
Feasibility Cost Share Agreement Executed	04/07/25	04/07/25
Vertical Team Alignment Memo (VTAM)	08/19/25	Pending
Alternatives Milestone Meeting (AMM)	07/31/25	07/30/25
Tentatively Selected Plan Milestone (TSP)	01/2027	Pending
Release Draft Report to Public	03/2027	Pending
Command Validation Milestone (CVM)	08/2027	Pending
Final Report Transmittal	11/2027	Pending
Release for State and Agency Review	01/2028	Pending
Chief's Report or Director's Report	04/2028	Pending

3 Model User Coordination and Model Approval/Certification Reviews

3.1 Objectives of Reviews

Model User Coordination: PDT members using models (planning and engineering) for Civil Works planning studies must comply with CECW-P Memorandum, *Model Coordination for Civil Works Planning Studies* (28 Jul 2023) to ensure cross-functional coordination on model identification, to ensure appropriateness and proper application of planning and engineering models to be used in the study, and to confirm that assigned modelers possess the requisite knowledge and experience required to efficiently and effectively complete Civil Works feasibility study modeling tasks. Model user(s) must coordinate with the appropriate PCX or engineering functional chief for model selection and application.

- For engineering models used during feasibility, ER 1165-2-218, ER 1110-2-1150, and ES 08101 are the controlling guidance.
- Guidance on the quality assurance for planning models is contained in EC 1105-2-412, Assuring Quality of Planning Models, which 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.

Model Reviews: Approval/Certification: Approval or certification of model(s) will be needed for this study/project; therefore, review for model approval or certification will be required. This approval review is in relation to expected use of PCSWMM.

3.2 Documentation

Model User Coordination Review: Prior to initiation of work, District personnel will be identified and validated by functional chief/supervisor to ensure identification of personnel are properly selected, trained and resourced for the work assigned. Documentation to comply with CECW-P Memorandum, *Model Coordination for Civil Works Planning Studies* (28 Jul 2023) must be included as part of the RP submittal to the RMO and MSC.

3.3 Models to Be Used in the Study/Project

Table 4 lists the planning models that may be used to develop the decision document. Table 5 lists the engineering models that may be used to develop the decision document.

Table 4. Planning Models, Tools, and Data.

Model Name	LifeSim
Version	2.1.3
Model Status	Certified
Discipline Using the Model	Economics
Brief model description and how it will be used in the study/project:	This model simulates life loss using hydrologic and demographic data and risk-based estimation techniques
Model Name	Regional Economic System (RECONS)
Version	2.0
Model Status	Certified
Discipline Using the Model	Economics
Brief model description and how it will be used in the study/project:	A regional economic impact modeling tool developed to provide accurate and defensible estimates of regional economic impacts associated with Federal expenditures. This modeling tool automates calculations and generates estimates of jobs and other economic measures such as income and sales associated with USACE spending on Civil Works programs and projects.
Model Name	HEC-FDA
Version	2.0
Model Status	Certified
Discipline Using the Model	Economics
Brief model description and how it will be used in the study/project:	A watershed model which captures hydrologic flow processes and calculates flood damages. This model will be used to evaluate FRM measures in the study.

Model Name	Various HSI models
Version	Exact models TBD
Model Status	
Discipline Using Model	

Table 5. Engineering Models, Tools, and Data.

Model Name	HEC-HMS
Version	4.12
Model Status	HH&C CoP preferred
Discipline Using the Model	H&H
Brief model description and how it will be used in the study/project:	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 to analyze hydrology with updated period of record data and watershed changes.
Model Name	HEC-RAS
Version	6.6
Model Status	HH&C Cop preferred
Discipline Using the Model	H&H
Brief model description and how it will be used in the study/project:	Used to analyze hydraulics of the river and floodplain. Also used for inundation mapping.
Model Name	PCSWMM
Version	7.7
Model Status	Allowed
Discipline Using the Model	H&H
Brief model description and how it will be used in the study/project	Advanced modeling software for analysis of stormwater and watershed distribution systems. Team would use to evaluate the existing interior drainage of Princeville, NC to assist with recommendations.
Model Name	MII
Version	4.4.4.0

Model Status	Enterprise
Discipline Using the Model	Cost Engineering
Brief model description and how it will be used in the study/project:	Used to account for risk and uncertainty of alternatives and the TSP
Model Name	Crystal Ball, Build
Version	11.1.5046.0
Model Status	Enterprise
Discipline Using the Model	Cost Engineering
Brief model description and how it will be used in the study/project:	Used to account for risk and uncertainty of alternatives and the TSP.

4 Project Delivery Team & District Quality Control

Prior to District Quality Control (DQC), the report and supporting documentation should undergo a Project Delivery Team (PDT) review. District Quality Control (DQC) is an internal USACE review covering basic science and engineering work products and fulfills the project quality requirements of the Project Management Plan (PMP). DQC will be performed continuously and managed by the Wilmington District. The DQC Reviews will consist of informal quality checks and more formal project stage reviews.

- **Project Delivery Team:** The PDT will review the report and supporting documentation.
- **Informal Quality Checks:** Informal quality checks will be performed by supervisors or peers not actively involved with project delivery. The informal quality checks reviews will not have a formal schedule or a formal team but will be performed throughout the life of a project and documented, as appropriate.
- **Interim Project Stage Reviews:** Interim project stage reviews will be performed as shown in the schedule in Table 2. Interim project stage reviews will consist of PDT reviews and DQC reviews. The following products will undergo interim review:
    - HEC-HMS model
    - HEC-RAS 2D FWOP and FWP models
    - Draft Feasibility Report and EA
- **Independent District Quality Control:** The DQC will be performed by peers not actively involved with the project delivery and will be performed prior to all ATRs.

4.1 Objectives of Reviews

- Read entire report and appendices and provide editorial comments for clarity and readability.
- Evaluate the correct applications of methods, validity of assumptions, adequacy of basic data, correctness of calculations, completeness of documentation, and compliance with guidance and standards.
- Check all computations and graphics by having the reviewer place a highlight (e.g., “red dot”) on each annotation and/or number indicating concurrence with the correctness of the information shown.

4.2 Required Review Team Expertise

Table 3 identifies the review team expertise required for the project.

- **PDT Reviews.** PDT Reviews will be performed by team members actively involved in project delivery. The PDT has been assigned an Engineering Technical Lead in accordance with ER 5-1-11. The PDT members and disciplines are shown in Section 9 of this RP.
- **Independent DQC Reviews.** Independent DQC reviews will be performed by reviewers NOT actively involved in the project delivery. The independent DQC team has been assigned a DQC Review Lead in accordance with ER 1165-2-217. See Appendix 3 of this RP for the Team Roster.

4.3 Documentation

All DQC reviews will be performed and documented in accordance with ER 1165-2-217. Documentation of DQC will follow the District Quality Manual and the MSC Quality Management

Plan. DrChecks[SM] will be used for documentation of DQC comments for project stage reviews. The DQC certification template for project DQC will follow the sample certification sheet found in ER 1165-2-217. Documentation of completed DQC will be provided to the MSC, RMO, and the ATR Team Lead. All DQC comments and their resolutions from all DQC Reviews will be provided to the ATR Team so that the ATR Team can determine whether an adequate DQC was performed.

4.4 Schedule and Estimated Costs

Although DQC is performed continuously, Table 2 identifies the project stage review requirements and approximate cost of each DQC review.

4.5 District Quality Control Checklist

The DQC Review Lead will confirm the following before completing DQC Certification. By signing off on completion of DQC, the DQC reviewer is assuming the same level of responsibility as the author.

General Issues

1. Has the PDT Review been completed?
2. Was the allotted time for DQC in the review plan adhered to?
3. Has the DQC Team verified the information presented in the current study checklist (pre-AMM, pre-TSP, Final Report) is accurate?
4. Is the identified problem well understood?
5. Are the risks and uncertainties properly characterized?
6. Has an appropriate array of alternatives been considered that could solve the problem?
7. Does the TSP solve the problem?
8. Are the implementation risks appropriately considered?
9. Are the proposed construction methods appropriate?
10. Are the schedules and cost estimates reliable (comprehensive, well-documented, accurate, and credible)?
11. What is the risk of potential cost and schedule growth?
12. Are there lessons learned that need to be considered?
13. Does the product comply with USACE criteria and policy requirements including environmental compliance requirements?
14. If applicable, has life-safety risk been appropriately assessed?
15. Are the methods used to develop analyses and conclusions clearly and fully presented to ensure transparency, if applicable?

Items for Verification

1. Are the assumptions, methods, procedures, computations (including quantities), and materials used in the analyses consistent with the project purpose or decisions being made?
2. Is the array of alternatives considered comprehensive?
3. Are the methods used to develop analyses and conclusions clearly and fully presented?
4. Are the data, level of data, assumptions, and safety risk based on deterministic criteria and risk-informed decision-making information appropriate?
5. Are the results compared to project purpose in compliance with applicable laws and USACE policies reasonable?

6. Correctness of Calculations – For each discipline, ensure correctness of the information on each annotation, computation, and model input parameter.
7. Correctness, accuracy, and clarity of graphic/plan presentation – For each discipline, ensure correctness of information shown on graphics (e.g., dimension, elevation, notes, or references).

5 Agency Technical Review

Agency Technical Review (ATR) is undertaken to ensure the quality and credibility of USACE scientific and technical information is consistent with the ER 1165-2-217 and the responsible MSC's Quality Management Plan. ATR is mandatory for all draft and final decision documents and most implementation products.

The ATR of work products and reports will also cover any necessary NEPA documents, other environmental compliance products including deferred environmental commitments during implementation, any in-kind contributions/services provided by local sponsors or their A-Es, and other supporting documents.

5.1 Objectives of Review

- Perform a comprehensive review of PDT conclusions to ensure that the results and decisions are clearly supported by the information presented and in compliance with current USACE policy and procedures.
- Assess adequacy of DQC to ensure proper and effective DQC has been conducted by reviewing the work products, DQC documentation, and the signed DQC certification. Work products that are of poor quality or appear to have inadequate DQC may be returned with no action.
- Validate key PDT decisions and identify important issues, concerns, and lessons learned.
- Perform Cost Engineering review.

5.2 Required Review Team Expertise

ATR is conducted outside the District with an ATR Lead from outside the MSC to remove unintended bias of the District/Division. Table 3 identifies the ATR review team expertise required for the project. See Appendix 3 of this RP for the ATR Lead. The remaining ATR team will be identified prior to the TSP..

5.3 Documentation

Documentation of ATR meet the requirements of ER 1165-2-217. This includes the four-part comment structure, three-part response structure, and the use of DrChecks^{SM}. The ATR lead will complete an ATR Summary Report, a Statement of Technical Review, and ATR Certification for the draft and final decision documents and supporting analyses, 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 when ATR documentation is complete. Documentation of completed ATR will be provided to the MSC and RMO. The Cost Engineering Mandatory Center of Expertise will provide the Cost Engineering certification.

5.4 Agency Technical Review Schedule and Estimated Costs

Each ATR should build upon all prior cycles of review of any work product. Each ATR iteration should address only incremental changes and additions to documents and analyses addressed in prior ATR reviews, unless the ATR team determines that certain subjects warrant revisiting due to other changes. Table 2 outlines the schedule and costs for ATR for this study.

6 Policy and Legal Compliance Review

Policy and legal compliance review (P&LCR) of draft and final planning decision documents is delegated to the MSC (see Director's Policy Memorandum 2018-05 and Director's Policy Memorandum 2019-01). The P&LCR culminates in determination whether report recommendations and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander.

6.1 Objectives of Review

- Provide advice and support to PDT and decision makers.
- Engage at both the MSC and HQ levels, ensuring that the vertical teaming aspect required during Civil Works project development is maintained.
- Ensure national consistency in policy compliance.
- Help guide the PDT through project development and the completion of policy and legally compliant documents.
- Identify policy and legal issues as early as possible.
- Provide impartial and unbiased recommendations, advice, and support to decision makers.
- Review Project Guidance Memorandum (PGM)
- Review draft Document of Review Findings (DoRF) prior to submittal to the Chief of Office Water Project Review

6.2 Required Review Team Expertise

The P&LCR team will be a single team of policy and legal experts drawn from HQ, MSC, PCX, and other review resources as needed to take full advantage of USACE's breadth of experience and to enhance knowledge management. With input from HQ and MSC functional leaders and through collaboration with the Chief of Office Water Project Review (OWPR), the MSC Chiefs of Planning and Policy are responsible for establishing a competent interdisciplinary P&LCR team for the project.

A representative from the Office of Counsel will be assigned to participate in reviews. Members may participate from the District, MSC, or HQ. The MSC Chief of Planning and Policy will coordinate membership and participation with the office chiefs. See Appendix 3 of this RP for the Team Roster.

6.3 Documentation

The input from the P&LCR team should be documented in a Memorandum for Record (MFR) produced for each engagement with the team including milestone meetings, in-progress reviews, team meeting, etc. The MFR should be distributed to all meeting participants.

Teams may choose to capture some of the policy review input in a risk register, as 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.

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

6.4 Schedule and Estimated Costs

No project funding will be used to fund the P&LCR team. See Table 2 for the schedule.

7 Independent External Peer Review

Independent External Peer Review (IEPR) is the most independent level of review conducted on project studies, and only is applied in cases that meet certain criteria where the uncertainties, risk, and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted.

IEPR Determination: IEPR will not be performed for the study/project as determined by Figure 6.1 of ER 1165-2-217, which provides a flowchart for decision-making on conducting an IEPR and is incorporated by reference. Appendix 2 provides the project-specific risk-informed assessment on the IEPR determination.

8 Public Review

Public Review of the Review Plan: This RP 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 RP, an updated RP will be posted to the District's website.

Public Review of the draft planning decision document: Additional public review will occur when the report with integrated NEPA document is released for public and agency comment.

Appendix 1: Review Plan Change Log

Revision Date	Description of Change	Page / Paragraph Number

Appendix 2: Risk-Informed IEPR Assessment

Project Name: Princeville Flood Risk Management GRR

IEPR Determination: Based on the Risk Informed IEPR Assessment below, it was determined that Princeville Flood Risk Management GRR will not undergo IEPR.

Section 1. Mandatory Decision on Conducting IEPR.
The three mandatory conditions determining whether IEPR is undertaken (ER 1165-2-217 Section 6.4) are:

#1. Has the Chief of Engineers determined the project is controversial? No
If YES, then **IEPR is mandatory**. Statutory exclusion does not apply.
If NO, **go to question #2**
Project-specific rationale for response: N/A

#2. Has the Governor of affected State requested an IEPR? No
If YES, then **IEPR is mandatory**. Statutory exclusion does not apply.
If NO, **go to question #3**
Project-specific rationale for response: N/A

#3. Is the cost of the project, including mitigation costs, greater than $200 million? Yes
If YES, **IEPR is mandatory** unless exclusions apply. **Go to Section 3.**
If No, then IEPR is discretionary. **Go to Section 2.**
Project-specific rationale for response: Although the recommended plan has not been identified yet, a comprehensive solution for this type of study has the reasonable likelihood of exceeding $200 million in costs.

Section 2. Discretionary IEPR.
When none of the 3 mandatory triggers for IEPR listed in Section 1 are met, MSC Commanders have the discretion to conduct IEPR based on risk-informed assessment of the expected contribution of IEPR to the project. See ER 1165-2-217 Section 6.5.1 for details.

#1. Has a federal or state Agency requested IEPR due to significant adverse environmental impacts? No
If YES, then MSC Commander has discretion on determining if IEPR will be conducted.
If No**, go to question #2**

Project-specific Rationale: N/A

#2 Risk Informed Decision Determination on Conducting IEPR: At minimum, the MSC Commander will consider if the project will have/use any of the following:

- Is the project likely to involve significant life safety concerns? If so, what are they? Significant life safety concerns: No

  Project-specific rationale: N/A

- 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?
  Novel methods, complex challenges, precedent setting, change prevailing practices: No

  Project-specific rationale: N/A

If the response to either of these risk informed decision determination questions is YES, then IEPR may add value or significant benefit. If the response to both of these questions is NO, then IEPR may not add value or significant benefit.

Project-specific Rationale: N/A

Section 3. IEPR Exclusion Considerations. Exclusions to IEPR may apply when a project total cost is greater than $200 million (see Section 1 above). See ER 1165-2-217 Section 6.6 for details.

#1. Does the project have an Environmental Impact Statement (EIS)? If level of NEPA documentation is unknown at the initial RP, then revisit once level of NEPA is determined. No

If YES, then **IEPR is mandatory**. Statutory exclusion does not apply.
If NO or UNKNOWN, then **go to question #2**

Project-specific Rationale: N/A

#2. IEPR Exclusion Condition A - Discussion for Non-Controversial or Routine Projects:

Does the Project meet *ALL the following criteria:*

- *Not controversial;* Yes
- *Negligible impacts on scarce or unique cultural, historic, or tribal resources;* Yes
- *No substantial adverse impacts on fish and wildlife species and habitats prior to the implementation of mitigation measures; AND* Yes
- *Before implementation of mitigation measures, no more than a negligible adverse impact on a species listed as threatened or endangered under the Endangered Species Act of 1973 or the critical habitat of such species as designated under such Act* Yes

If YES to ALL, then IEPR is not mandatory. Consider criteria for Discretionary IEPR (Section 2).
If NO to ANY, then statutory exclusion does not apply. **Go to #3.**

Project-specific Rationale: The District is seeking an IEPR exclusion under exclusion condition A. Although project costs have the potential to exceed $200 million depending on the nature of the eventual recommended plan, an Environmental Assessment is currently anticipated. All questions within exclusion condition A are currently considered “Yes” answers. Additionally, the District considered other factors of scope and complexity and has made a risk informed decision that IEPR would not add value or significant benefit to the study.

Appendix 3 Team Rosters

Project Delivery Team Roster

NAME	OFFICE	Role & Responsibility
[redacted]	CESAW-PMM-J	Project Manager
[redacted]	CESAW-PMM-C	Project Management Assistant
[redacted]	CESAW-ECP-F	Planning
[redacted]	CESAW-ECP-E	Environmental Lead
[redacted]	CESAW-ECP-E	Cultural Resources Lead
[redacted]	CESAJ-PD-D	Economics
[redacted]	CELRC	Engineering Technical Lead
[redacted]	CELRN	H&H Modeler 1
[redacted]	CELRC	H&H Modeler 2
[redacted]	CELRC	Cost Engineer
[redacted]	CESAS-RE-A	Real Estate
[redacted]	CESAW-EPE-T	GIS/Imagery
[redacted]	CELRC	Design Engineer
[redacted]	CELRN	Geotechnical Engineer
[redacted]	CESAW-OC	District Counsel

District Quality Control Team Roster

NAME	Role	Experience
[redacted]	DQC LEAD	Past experience with DQC coordination; LSO and DSO
[redacted]	H&H Engineer	At least 10 years of experience in H&H engineering
[redacted]	Geotechnical Engineer Section Chief	At least 10 years of experience in geotechnical engineering
[redacted]	Design Engineer Section Chief	At least 10 years of experience in design engineering
[redacted]	Environmental Section Chief	At least 10 years of experience in NEPA with USACE feasibility studies
[redacted]	Planning and Environmental Branch Chief	At least 10 years of experience in NEPA with USACE feasibility studies
[redacted]	Cost Engineering Section Chief	At least 10 years of cost engineering experience with USACE feasibility studies
[redacted]	Economics Chief	At least 10 years of experience in economics
[redacted]	Senior Realty Specialist	At least 10 years of experience in real estate
[redacted]	Levee Safety Project Manager	At least 5 years of experience in the role of USACE levee safety PM

Agency Technical Review Team Roster

NAME	Role	Experience
[redacted]	ATR Lead	TBD
FILL OUT / ADD AS MANY ROWS AS NEEDED. Note – disciplines on the DQC team should mirror disciplines on the ATR team		

Policy and Legal Compliance Team Roster

NAME	OFFICE	Role
[redacted]	CESAD-PD	Review Manager
[redacted]	CESAD-PDP	Economics
[redacted]	CESAD-RBT	Engineering
[redacted]	CESAD-RBT	Engineering
[redacted]	CECW-PC	Planning
[redacted]	CESAD-PDO	Operations
[redacted]	CESAD-PDR	Real Estate
[redacted]	CECC-SAD	Office of Counsel
[redacted]	CECW-EC	Infrastructure, Installation and Resilience (IIR)
[redacted]	CESAW-RBT	Cost Engineering
[redacted]	CESAD-PDP	Environmental

Vertical Team Roster

NAME	OFFICE	Role
TBD	TBD	Regional Integration Team (RIT)
TBD	TBD	RMO Representative
		MSC