



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION  
60 FORSYTH STREET SW, ROOM 10M15  
ATLANTA, GA 30303-8801

CESAD-PDP

17 September 2020

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, Wilmington District,  
69 Darlington Avenue, Wilmington, North Carolina 28403-1343

SUBJECT: Review Plan and Type I IEPR Exclusion Request for the Wrightsville  
Beach, NC Feasibility Study

1. References:

a. Memorandum, CESAW-PM-D, 14 August 2020, subject: Wrightsville Beach, NC  
Feasibility Study – Request for Approval of Review Plan and Type 1 IEPR Exclusion.

b. Memorandum, CENAD-PD-X, 4 August 2020, subject: Wrightsville Beach, North  
Carolina Feasibility Study, Coastal Storm Risk Management Study.

2. Wilmington District (SAW) prepared the enclosed review plan consistent with EC  
1165-2-217. The district coordinated the review plan with the National Planning Center  
for Coastal Storm Risk Management (PCX-CSR), which is the lead office to execute  
this review plan. For further information, contact Mr. Larry Cocchieri, PCX-CSR at  
347-370-4571. The Wrightsville Beach, NC Feasibility Study is a “Decision Document”  
under the Review Policy. Based on a case-specific, risk-informed decision, ATR is  
determined to be appropriate, and Type I Independent External Peer Review (IEPR) is  
not required.

3. I approve this review plan and the conclusion that IEPR is not required. The  
approved review plan is subject to change as circumstances require, consistent with  
study development under the project management business process. Subsequent  
revisions to this approved review plan due to significant changes in the study, study  
scope, or level of review will require new written approval from this office.

4. The point of contact for this action is Ms. Karen Dove Odumosu at 404-562-5225.

 Digitally signed by  
KELLY.JASON.ERI  
K.1095067405

Encl

JASON E. KELLY, PMP  
Colonel, EN  
Commanding

# REVIEW PLAN

September 2020

**Project Name:** Wrightsville Beach, North Carolina Feasibility Study, Coastal Storm Risk Management Project

**P2 Number:** 483210

**Decision Document Type:** Coastal Storm Risk Mitigation Feasibility Report

**Project Type:** Coastal Storm Risk Management

**District:** Wilmington District

**District Contact:** Project Manager, [REDACTED]

**Major Subordinate Command (MSC):** South Atlantic Division

**MSC Contact:** Senior Plan Formulator, [REDACTED]

**Review Management Organization (RMO):** PCX-CSRM

**RMO Contact:** Planning Program Manager, [REDACTED]

## **Key Review Plan Dates**

<b><u>Date of RMO Endorsement of Review Plan:</u></b>	04 August 2020
<b><u>Date of MSC Approval of Review Plan:</u></b>	17 September 2020
<b><u>Date of IEPR Exclusion Approval:</u></b>	N/A
<b><u>Has the Review Plan changed since PCX Endorsement?</u></b>	Yes
<b><u>Date of Last Review Plan Revision:</u></b>	2 September 2020
<b><u>Date of Review Plan Web Posting:</u></b>	18 September 2020
<b><u>Date of Congressional Notifications:</u></b>	Pending

### Milestone Schedule

	<u>Scheduled</u>	<u>Actual</u>	<u>Complete</u>
<u>Feasibility Cost Sharing Agreement:</u>	03 April 2020	03 April 2020	Yes
<u>Alternatives Milestone:</u>	09 Jul 2020	09 July 2020	No
<u>Tentatively Selected Plan:</u>	Aug 2021	(enter date)	No
<u>Release Draft Report to Public:</u>	Oct 2021	(enter date)	No
<u>Agency Decision Milestone:</u>	Feb 2022	(enter date)	No
<u>Final Report Transmittal:</u>	Oct 2022	(enter date)	No
<u>Senior Leaders Briefing:</u>	Feb 2023	(enter date)	No
<u>Chief's Report or Director's Report:</u>	Apr 2023	(enter date)	No

## Project Fact Sheet

June 2020

**Project Name:** Wrightsville Beach, North Carolina Feasibility Study, Coastal Storm Risk Management Project

**Location:** Wrightsville Beach, New Hanover County, North Carolina

**Authority:** The Flood Control Act of 1962 authorized the Wrightsville Beach project and the Water Resources Development Act of 1986 authorized continued periodic nourishment for a period of 50 years (thru 2036).

**Sponsor:** Town of Wrightsville Beach, NC

**Type of Study:** Coastal Storm Risk Management (CSRM) Feasibility Study

**SMART Planning Status:** 3x3x3 compliant

**Project Area:** The Wrightsville Beach CSRM project is located in the Town of Wrightsville Beach, in southeastern North Carolina. The project is located in New Hanover County, just east of Wilmington, NC. Running just west of the town is the Atlantic Intracoastal Waterway (AIWW). The shoreline in the study area is a continuous strip of beach with a north-northeast to south-southwest alignment. The area along the shoreline within the project footprint is fully developed with a mix of public and private infrastructure, various commercial, residential and tourism related establishments. The study area also includes the Masonboro Inlet and Banks Channel, the historic borrow source for Wrightsville Beach.

**Problem Statement:** Wrightsville Beach suffers from erosion, waves and inundation due to coastal storms that causes damage to structures and risks to life and property.

**Federal Interest:** The feasibility study will determine whether a plan to provide storm damage reduction benefits to the project area for another 50 years is in the federal interest.

**Risk Identification:** Potential risks to be considered in the study are:

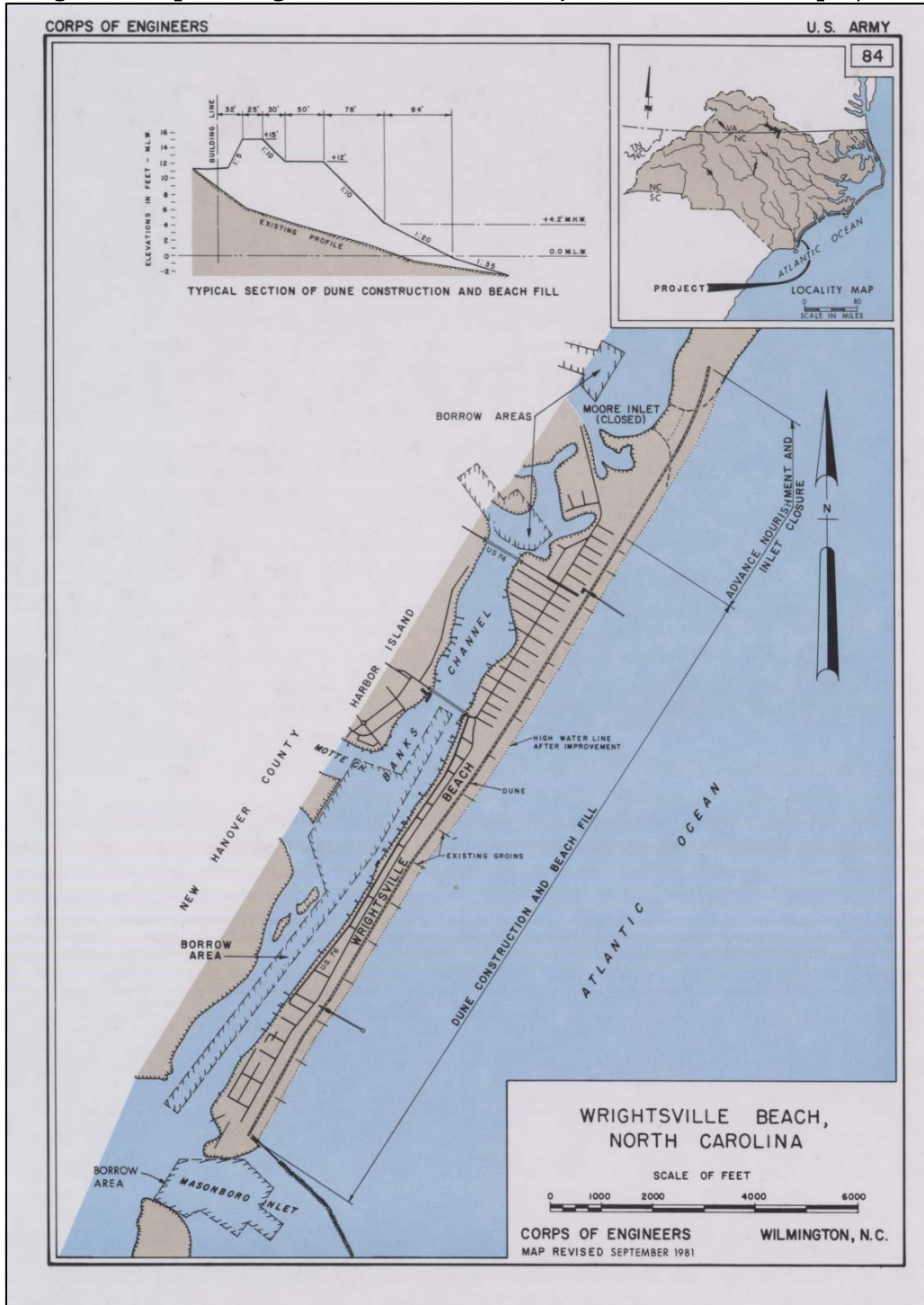
1. The Coastal Barrier Resources Act of 1982 (CBRA) was enacted to prohibit most new federal expenditures and federal financial assistance within a John H. Chafee Coastal Barrier Resources System (CBRS) unit. An area designated as a CBRS unit is subject to statutory restrictions on certain actions and programs of the Federal government that subsidize and encourage development on coastal barriers. The Act allows for general and specific exceptions, and one specific exception is for nonstructural projects for shoreline stabilization what are designed to mimic, enhance, and restore a natural stabilization system. The sand from the Masonboro Inlet, which is situated within a CBRS unit has been used beneficially, in the past, on Wrightsville Beach. The U.S. Fish and Wildlife (USFWS) concurred that the Wrightsville Beach project met the exception on 10 March 2020 during consultation with USFWS related to the recent Beach Renourishment Evaluation Report (BRER) Study. However, further consultation will be required as part of this new feasibility study. A plan involving beach renourishment will require a large amount of beach compatible sand, possibly more

than is available from the inlet itself. Costs to construct the project may rise if sand must be taken from an off-shore site, depending on the location and distance from Wrightsville Beach.

2. Additional real estate may be required thus incurring an additional cost to the project and result in a negative effect to the Benefit-Cost Ratio and economic justification.

3. There is potential for adverse impacts if the Future Without Project (FWOP) condition (i.e., the No Action Plan) is selected, as severe storm impacts to property could occur.

Figure 1 Map of Wrightsville Beach currently authorized Federal project



## 1. FACTORS AFFECTING THE LEVELS OF REVIEW

### Scope of Review:

- Will the study likely be challenging?  
This study consists of providing continued, and perhaps expanded, storm damage reduction to the Town of Wrightsville Beach within an existing Federal Coastal Storm Risk Management (CSRM) project. Accordingly, the project does not have any significant technical, institutional, or social challenges.
- Provide a preliminary assessment of where the project risks are likely to occur and assess the magnitude of those risks.  
Project risks associated with the feasibility study are fairly low (refer to the Risk Identification section on the Project Fact Sheet above). All technical areas have methods to identify and mitigate inherent risks: cost risk will be mitigated through contingencies coordinated with the Cost MCX; environmental risks will be reduced through the incorporation of avoidance and minimization measures embedded within the project's acquisition approach and construction assumptions; and additional investigations conducted during preconstruction engineering and design (PED) will reduce risks associated with confirmation and update of sediment characteristics. The major risks in the project include the potential for adverse impacts if the Future Without Project (FWOP) condition (i.e. the No Action Plan) is selected, as severe storm impacts to property could occur. None of the above risks pose a significant threat to human life or the environment, either now or in the future. The Project Delivery Team (PDT) will manage risks throughout the study, and operate within policy and guidance.
- Is the project likely to be justified by life safety or is the study or project likely to involve significant life safety issues?  
The project will not be justified by life/safety and does not involve significant threat to human life/safety assurance. No life/safety issues are anticipated as CSRM projects primarily reduce risk to loss of property and infrastructure. Life/safety issues are mitigated in CSRM projects as a result of evacuation.
- Has the Governor of an affected state requested a peer review by independent experts?  
The Governor of North Carolina has not requested a peer review by independent experts.
- Will it likely involve significant public dispute as to the project's size, nature, or effects?  
This project is not anticipated to involve significant public dispute. Throughout the project's history, the existing project has provided significant flood risk damage reduction from multiple hurricanes and tropical storms. Throughout this period the public has continued to support the existing project.
- Is the project/study likely to involve significant public dispute as to the economic or environmental cost or benefit of the project?  
This project is not anticipated to involve significant public dispute. Throughout the project's history, the existing project has provided significant flood risk damage reduction from multiple hurricanes and tropical storms. Throughout this period the public has continued to support the economic and environmental cost of the existing project.

- 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?

The study is a typical CSRSM reevaluation report involving traditional storm damage reduction measures and traditional implementation processes. Therefore, it is anticipated that there is a minimal risk involved with the project. The final feasibility report and supporting documentation will contain standard engineering, economic, and environmental analyses and information. Novel methods will not be utilized and methods, models or conclusions will not be precedent setting or likely to change policy decisions.

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

The proposed CSRSM project does not require any special measures to provide redundancy, resiliency and/or robustness. Careful consideration will be required relative to sequencing if construction requires multiple contract actions. At this time, the project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule. The project is resilient in that it can be adapted by easily engineered means to provide a greater level of risk management in accommodating change. For instance, the project could be engineered for a dune raise to accommodate unexpected, higher levels of sea level rise.

- Is the estimated total cost of the project greater than \$200 million?

The estimated total cost of the project is anticipated to be greater than \$200,000,000. The total cost includes both initial construction and follow on renourishment cycles.

- Will an Environmental Impact Statement be prepared as part of the study?

The study is not anticipated to include an Environmental Impact Statement (EIS). However, removal of all environmental windows (dredging and beach placement for the 50-year project life) could result in the requirement for an EIS. The PDT will continue to assess and revisit potential environmental impacts of alternatives as they are developed as the study progresses.

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

The project is not expected to have substantial adverse impacts on scarce or unique tribal, cultural, or historic resources. Proactive historical avoidance and minimization measures incorporated into project implementation have mitigated for adverse impacts. Similar measures will be incorporated into this new project.

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

The project is not expected to have substantial adverse impacts on fish and wildlife species with the implementation of monitoring and/or mitigation measures that will be determined through resource agency coordination throughout the National Environmental Policy Act (NEPA) process.



- 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?  
The project is not expected to have more than a negligible adverse impact on an endangered or threatened species or its designated critical habitat. To the extent practicable, environmental concerns likely will be addressed through monitoring and/or implementation of mitigation measures.

## 2. REVIEW EXECUTION PLAN

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 (including data, analyses, environmental compliance documents, etc.) undergo DQC. This internal review process covers basic science and engineering work products. It fulfils the project quality requirements of the Project Management Plan.

**Agency Technical Review.** ATR is 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. If significant life safety issues are involved in a study or project a safety assurance review shall be conducted during ATR. Currently, we do not anticipate the need for a Targeted ATR in any discipline but may decide that a Targeted ATR is necessary as the study progresses.

**Independent External Peer Review.** Type I IEPR may be required for decision documents under certain circumstances. This is the most independent level of review, and is applied in cases that meet criteria where the risk and magnitude of the project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision is made as to whether Type I IEPR is appropriate.

**Cost Engineering Review.** All decision documents shall be coordinated with the Cost Engineering Mandatory Center of Expertise (MCX). The MCX will assist in determining the expertise needed on the ATR and IEPR teams. The MCX will provide the Cost Engineering certification. The Review Management Organization (RMO) is responsible for coordinating with the MCX for the reviews. These reviews typically occur as part of ATR.

**Model Review and Approval/Certification.** EC 1105-2-412 mandates the use of certified or approved models for all planning work to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions.

**Policy and Legal Review.** All decision documents will be reviewed for compliance with law and policy. ER 1105-2-100, Appendix H provides guidance on policy and legal compliance reviews. These reviews culminate in determinations that 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. These reviews are not further detailed in this section of the Review Plan.

Table 1 provides the schedules and costs for reviews. The specific expertise required for the teams are identified in later subsections covering each review. These subsections also identify requirements, special reporting provisions, and sources of more information.

**Table 1: Levels of Review**

<b>Product to Undergo Review</b>	<b>Review Level</b>	<b>Start Date</b>	<b>End Date</b>	<b>Cost</b>	<b>Complete</b>
Interim Technical Products	Targeted ATR (if necessary)	TBD	TBD	\$15,000	No
Draft Feasibility Report and EA	District Quality Control	Sep 2021	Sep 2021	\$20,000	No
	Agency Technical Review	Oct 2021	Oct 2021	\$35,000 <sup>1</sup>	No
	Type I IEPR <sup>2</sup>	TBD	TBD	TBD	TBD
	Policy and Legal Review	Oct 21	Nov 21	N/A	No
	Public & Agency Review	Oct 21	Nov 21	N/A	No
ADM Milestone Submittals	District Quality Control	Feb 22	Feb 22	\$5,000	No
Final Feasibility Report and EA	District Quality Control	Sep 22	Sep 22	\$10,000	No
	Agency Technical Review	Sep 22	Sep 22	\$25,000 <sup>3</sup>	No
	Type I IEPR <sup>2</sup>	TBD	TBD	TBD	TBD
	Policy and Legal Review	Oct 22	Oct 22	N/A	No
In-kind Products <sup>4</sup>	N/A	N/A	N/A	N/A	N/A

<sup>1</sup>Estimated cost for Draft and Final Report ATRs does not include the cost of ATR Team Lead participation in milestone meetings or other engagement/coordination beyond that directly related with those ATRs. The estimated cost for ATR of the Draft Report is based upon the following assumptions:

- ATR Team Lead – 32 hours, \$130/hour
- ATR Team – 9 technical disciplines, 40 hours/discipline, average \$130/hour

<sup>2</sup>PDT is requesting exclusion from Type I IEPR with District transmittal of this review plan.

<sup>3</sup>The estimated cost for ATR of the Final Report is based upon the following assumptions:

- ATR Team Lead – 32 hours, \$130/hour
- ATR Team – 9 technical disciplines, 32 hours/discipline- average, average \$130/hour

<sup>4</sup> Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. No in-kind products or analyses will be developed by the non-Federal sponsor

**a. DISTRICT QUALITY CONTROL**

The home district shall manage DQC and will appoint a DQC Lead to manage the local review (see EC 1165-2-217, section 8.a.1). The DQC Lead shall prepare a DQC Plan and provide it to the RMO and MSC prior to starting DQC reviews. Table 2 identifies the required expertise for the DQC team.

**Table 2: Required DQC Expertise**

<b>DQC Team Disciplines</b>	<b>Expertise Required</b>
DQC Lead	A senior professional with extensive experience preparing Civil Works decision documents and conducting DQC. The lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc.).
Planning	A senior water resources planner with experience in CSRM feasibility studies.
Economics	The reviewer must be certified to perform DQC and shall have knowledge of the principles and guidelines of economic analysis as it relates to models for CSRM projects in the Corps of Engineers including CSRM and recreation benefits.
Environmental Resources	A senior environmental specialist with experience in drafting planning documents and navigating the NEPA process.
Coastal Engineer	Senior coastal engineer with experience in CSRM models.
Engineering – Geotechnical	Senior geotechnical engineer with experience in feasibility studies, especially CSRM projects.
Cost Engineering	The cost engineer shall be an expert in CSRM beach renourishment projects, and have experience working cost estimates through ATR via the Cost Center of Expertise.
Real Estate	The reviewer must be experienced in CSRM studies.

**Documentation of DQC.** Quality Control shall be performed continuously throughout the study. A specific certification of DQC completion is required at the draft and final report stages. Documentation of DQC shall follow the District Quality Manual and the MSC Quality Management Plan. An example DQC Certification statement is provided in EC 1165-2-217, on page 19 (see Figure F).

Documentation of completed DQC shall be provided to the MSC, RMO and ATR Team leader prior to initiating an ATR. The ATR team will examine DQC records and comment in the ATR report on the adequacy of the DQC effort. Missing or inadequate DQC documentation can result in delays to the start of other reviews (see EC 1165-2-217, section 9).

**b. AGENCY TECHNICAL REVIEW**

The ATR will assess whether the analyses are technically correct and comply with guidance, and that documents explain the analyses and results in a clear manner. A Review Management Organization (RMO) manages ATR. The review is conducted by an ATR Team whose members are certified to perform reviews. Lists of certified reviewers are maintained by the various technical Communities of Practice (see EC 1165-2-217, section 9(h)(1)). Table 3 identifies the disciplines and required expertise for this ATR Team.

**Table 3: Required ATR Team Expertise**

ATR Team Disciplines	Expertise Required
ATR Lead	The ATR lead will be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead shall also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, or environmental resources).
Plan Formulator	The Planning reviewer must be certified to perform ATR and will be a senior coastal study planner with experience in CSRМ projects.
Economics (includes potential Targeted ATR participation)	The reviewer must be certified to perform ATR and shall have extensive knowledge of the principles and guidelines of economic analysis, and familiarity with the use of the BeachFx model for CSRМ projects in the Corps of Engineers including recreation benefits.
Coastal Engineer (includes potential Targeted ATR participation)	The reviewer will have a minimum of 5 years of Coastal Engineering experience. The engineer must be familiar with running BeachFx and how the information is used by the economists and the biologists in their assessments.
Environmental Resources	The reviewer must be certified to perform ATR and shall be an expert in the NEPA process. The reviewer shall be familiar with the impacts from CSRМ beach nourishment projects and have an understanding of CBRA of 1982.
Engineering – Geotechnical	The reviewer will have a minimum of 5 years of Geotechnical experience. The engineer must be familiar with sediment sampling practices and how the information is used to formulate CSRМ projects.
Cost Engineering	The cost engineer shall be an expert in CSRМ beach renourishment projects. The Cost Engineering reviewer must be from the Civil Works Cost Engineering and Agency Technical Review Mandatory Center of Expertise with Technical Expertise (Cost MCX/TCX) in Walla Walla District, or must be on the Cost MCX/TCX approved list of delegated Cost ATR reviewers.
Real Estate	The reviewer shall have experience with the easement requirements on CSRМ projects. The Real Estate reviewer must have expertise in the real estate planning process for cost shared and full federal civil works projects, relocations, report preparation and acquisition

	of real estate interests. The reviewer shall have a full working knowledge of EC 405-2-12, Real Estate Planning and Acquisition Responsibilities for Civil Works Projects, the portions of ER 405-2-12 that are currently applicable, and Public Law 91-646. The reviewer shall be able to identify areas of the REP that are not in compliance with the guidance set forth in EC405-2-12 and shall make recommendation for bringing the report into compliance. All estates suggested for use shall be termed sufficient to allow project construction, and the real estate cost estimate shall be validated as being adequate to allow for real estate acquisition.
Climate Preparedness and Resilience CoP Reviewer	A member of the Climate Preparedness and Resiliency Community of Practice (CoP) will participate in the ATR review.
Risk and Uncertainty	The reviewer will be a subject matter expert in multi-discipline flood risk analysis to ensure consistent and appropriate identification, analysis, and written communication of risk and uncertainty. This reviewer may also serve as a reviewer in a specific discipline.

**Documentation of ATR.** DrChecks will be used to document all ATR comments, responses and resolutions. Comments shall be limited to those needed to ensure product adequacy. If a concern cannot be resolved by the ATR team and PDT, it will be elevated to the vertical team for resolution using the EC 1165-2-217 issue resolution process. Concerns can be closed in DrChecks by noting the concern has been elevated for resolution. The ATR Lead will prepare a Statement of Technical Review (see EC 1165-2-217, Section 9), for the draft and final reports, certifying that review issues have been resolved or elevated. ATR may be certified when all concerns are resolved or referred to the vertical team and the ATR documentation is complete.

**c. INDEPENDENT EXTERNAL PEER REVIEW**

**(i) Type I IEPR.**

**Decision on Type I IEPR.** This study is currently not excluded from IEPR. Based on project facts listed under Section 1 above, this project contains one mandatory trigger described in EC 1165-2-217, 11.d. The total project cost is likely not less than \$200 million. However, there is a potential for projects costing over \$200 million to be excluded from Type I IEPR if an exclusion is granted. Per Memorandum, CECW-P, Subject: Revised Delegation of Authority in Section 2014(a)(5)(A) of the Water Resources Development Act of 2007 (WRDA 2007), as amended (33 U.S.C. 2343), dated 07 JUN 2018, the MSC Commander has been delegated authority to approve the IEPR Exclusion based upon a risk-informed decision and recommendation. A waiver to forgo Type I IEPR is being requested concurrently with this review plan since no other mandatory conditions listed in this section are met: the project does not include an EIS, the various aspects of the problems or opportunities being addressed are not complex, and there is no controversy surrounding the study. Additionally, there is no public safety component of the project, do not expect the governor to request IEPR, and do not expect the DCW or the Chief of Engineers to determine this project is controversial due to significant public dispute over the size, nature, or effects of the project or the economic or environmental costs or benefits of the project.

**(i) Type II IEPR.**

The second kind of IEPR is Type II IEPR. These Safety Assurance Reviews are managed outside of the USACE and are conducted on design and construction for hurricane, storm and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. A Type II IEPR Panel will be convened to review the design and construction activities before construction begins, and until construction activities are completed, and periodically thereafter on a regular schedule.

**Decision on Type II IEPR.** Based on the project as currently envisioned, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a Type II IEPR Safety Assurance Review of this project at this time. A risk-informed decision concerning the timing and the appropriate level of reviews for the project implementation phase will be prepared and submitted for approval in an updated Review Plan prior to initiation of the design/implementation phase of this project.

**d. MODEL CERTIFICATION OR APPROVAL**

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models 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 use of a certified/approved planning model does not constitute technical review of a planning product. The selection and application of the model and the input and output data is the responsibility of the users and is subject to DQC, ATR, and IEPR.

**Table 5: Planning Models.** The following models may be used to develop the decision document:

<b>Model Name and Version</b>	<b>Brief Model Description and How It Will Be Used in the Study</b>	<b>Certification / Approval</b>
Beach-fx	A comprehensive innovative analytical framework for more accurately evaluating the physical performance and economic benefits and costs of shore protection project.	Certified

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 shall be used when appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR.

**Table 6: Engineering Models.** These models may be used to develop the decision document:

<b>Model Name and Version</b>	<b>Brief Model Description and How It Will Be Used in the Study</b>	<b>Approval Status</b>
MII	Used to estimate costs of alternatives and TSP	Enterprise
Crystal Ball	Used to account for risk and uncertainty of alternatives and the TSP	Enterprise
CEDEP	Corps-proprietary, Excel add-on for Cost Engineering; used	Enterprise
GENERALized Model for SIMulating Shoreline Change (GENESIS)	Simulates the long-term platform evolution of the beach in response to imposed wave conditions, coastal structures, and other engineering activity (e.g., beach nourishment).	Enterprise
SBEACH	A numerical simulation model for predicting beach, berm, and dune erosion due to storm waves and water levels.	Enterprise



## **e. POLICY AND LEGAL REVIEW**

Policy and legal compliance reviews for draft and final planning decision documents are delegated to the MSC (see Director's Policy Memorandum 2018-05, paragraph 9).

### **(ii) Policy Review.**

The policy review team is identified through the collaboration of the MSC Chief of Planning and Policy and the HQUSACE Chief of the Office of Water Project Review. The team is identified in Attachment 1 of this Review Plan. The makeup of the Policy Review team will be drawn from Headquarters (HQUSACE), the MSC, the Planning Centers of Expertise, and other review resources as needed.

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

**ATTACHMENT 1: TEAM ROSTERS**

PROJECT DELIVERY TEAM			
Name	Office	Position	Phone Number
[REDACTED]	CESAW-PM-DG	Project Manager	[REDACTED]
[REDACTED]	CESAW-PM-DG	Project Manager	[REDACTED]
[REDACTED]	CESAW-ECP-PS	Plan Formulation	[REDACTED]
[REDACTED]	CESAJ-PD-D	Economics	[REDACTED]
[REDACTED]	CESAW-ECP-EC	Coastal Engineer	[REDACTED]
[REDACTED]	CESAW-ECP-PE	Environmental	[REDACTED]
[REDACTED]	CESAW-ECP-EG	Geologist	[REDACTED]
[REDACTED]	CESAW-ECP-ET	Cost Engineer	[REDACTED]
[REDACTED]	CESAS-RE-HA	Real Estate	[REDACTED]
[REDACTED]	CESAW-OC	Counsel	[REDACTED]

DISTRICT QUALITY CONTROL TEAM			
Name	Office	Position	Phone Number
[REDACTED]	CESAW-ECP-P	Planning Lead	[REDACTED]
[REDACTED]	CESAJ-PD-D	Economics	[REDACTED]
[REDACTED]	CESAW-ECP-EC	Coastal Engineer	[REDACTED]
[REDACTED]	CESAW-ECP-PE	Environmental	[REDACTED]
[REDACTED]	CESAS-RE-A	Real Estate	[REDACTED]
[REDACTED]	CESAW-ECP-ET	Cost Engineer	[REDACTED]
[REDACTED]	CESAW-ECP-EG	Chief, Geotech Branch	[REDACTED]
[REDACTED]	CESAW-PM-D	CW Prog & PM Branch	[REDACTED]

AGENCY TECHNICAL REVIEW TEAM			
Name	Office	Position	Phone Number
[REDACTED]	CENAN-PL-FC	ATR Lead	[REDACTED]
[REDACTED]	TBD	Planning – Coastal Specialist	
[REDACTED]	TBD	Economics	
[REDACTED]	TBD	Coastal (Hydraulic) Engineering	
[REDACTED]	TBD	Environmental	
[REDACTED]	TBD	Real Estate	
[REDACTED]	TBD	Cost Engineering	
[REDACTED]	TBD	Climate Preparedness and Resilience	

VERTICAL TEAM			
Name	Office	Position	Phone Number
[REDACTED]	CECW-SAD-RIT	Deputy Chief, SAD-RIT	[REDACTED]
[REDACTED]	CECW-SAD	SAD-RIT	[REDACTED]
[REDACTED]	CESAD-PDP	Chief, Planning and Policy Division	[REDACTED]
[REDACTED]	CESAD-PDP	Senior Plan Formulator	[REDACTED]
[REDACTED]	CESAD-RBT	TBD	[REDACTED]
[REDACTED]	CESAD-PDC	Chief, CW Programs Management	[REDACTED]
[REDACTED]	CENAD-PD-X	CSRM PCX	[REDACTED]
[REDACTED]	CENAD-PD-P	CSRM PCX	[REDACTED]
[REDACTED]	CESAD-PDO	Coastal Program Manager	[REDACTED]

POLICY REVIEW TEAM			
Name	Office	Position	Phone Number
[REDACTED]	CECC-SWD	Office of Counsel	[REDACTED]
[REDACTED]	CECW-EC	Climate Preparedness & Resilience	[REDACTED]
[REDACTED]	CESAD-RBT	Engineering & Construction	[REDACTED]
[REDACTED]	CESWD-PDP	Economics	[REDACTED]
[REDACTED]	CESAD-PDP	Environmental	[REDACTED]
[REDACTED]	CECW-NAD	Planning	[REDACTED]
[REDACTED]	CESAD-PDR	Real Estate	[REDACTED]