

CESAD-PDP (1105)

11 June 2024

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

SUBJECT: Approval of the Review Plan for the Surf City, NC, General Reevaluation Report

1. References:

a. Wilmington District, CESAW-ZA memorandum (Surf City, NC General Reevaluation Report – Request for Approval of Review Plan and Independent External Peer Review Exclusion), 19 April 2024.

b. Engineering Regulation (ER) 1165-2-217 (Civil Works Review Policy),1 May 2021.

2. The Review Plan (RP) for the Surf City, North Carolina General Reevaluation Report, submitted by the Wilmington District, via reference 1.a. noted above has been reviewed by South Atlantic Division (SAD) and National Coastal Storm Risk Management Planning Center of Expertise in accordance with reference 1.b.

3. I hereby approve this Review Plan and the request for exclusion from Type I IEPR. After removing team roster attachments, Wilmington District shall post the enclosed review plan to their District website. Subsequent revisions to this Review Plan or its execution due to significant changes in the study, scope, or level of review will require new written approval from this office.

4. Point of contact for this action is , or

DANIEL H. HIBNER, PMP Brigadier General, USA Commanding

Review Plan

May 2024

1. Project Summary

Project Name: - Surf City and North Topsail Beach, NC

Location: Surf City, North Carolina P2 Number: 515901

Decision and Environmental Compliance Document Type: General Reevaluation Report and NEPA Document

Congressional Authorization Required: No

Project Purpose(s): Coastal Storm Risk Management

Non-Federal Sponsor: Town of Surf City, North Carolina

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

District: Wilmington District District Contact:

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

Review Management Organization (RMO): National Planning Center of Expertise for Coastal Storm Risk Management (PCX-CSRM)

RMO Contact:

Key Review Plan Dates

Date of RMO Endorsement of Review Plan	18 Apr 2024
Date of MSC Approval of Review Plan	TBD
Date of IEPR Exclusion Approval	TBD
Has the Review Plan changed since RMO Endorsement?	N/A
Date of Last Review Plan Revision	N/A
Date of Review Plan Web Posting	TBD
Date of Congressional Notifications	N/A

Milestone Schedule and Other Dates

	Scheduled	Actual
TSP	May 2024	Pending
Release Draft Report to Public, for ATR and to Policy	Jun 2024	Pending
and Legal Compliance Review Team	-	
ADM	Nov 2024	Pending
Final Report Transmittal to the Policy and Legal	Jan 2025	Pending
Compliance Review Team	-	_
State and Agency Briefing	Mar 2025	Pending
Chief's Report or Director's Report	May 2025	Pending

2. References

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

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

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

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

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

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.

Product to Undergo Review	Review Level	Site Visit	Start Date	End Date	Cost	Complete
Draft Report, Appendices and National Environmental Policy Act (NEPA)	District Quality Control	No	Apr 2024	May 2024	\$30,000	No
Draft Feasibility Report, Appendices and NEPA	Agency Technical Review	No	Jun 2024	Jul 2024	\$20,000	No
Draft Feasibility Report, Appendices and NEPA Concurrent Review	Policy and Legal Review	No	Jun 2024	Jul 2024	N/A	No
Final Feasibility Report, Appendices and NEPA	District Quality Control	No	Nov 2024	Nov 2024	\$15,000	No
Final Feasibility Report, Appendices and NEPA	Agency Technical Review	No	Nov 2024	Dec 2024	\$10,000	No
Final Feasibility Report, Appendices and NEPA Concurrent Review	Policy and Legal Review	No	Jan 2025	Feb 2025	N/A	No

Table 1: Schedule and Costs of Reviews

Discipline / Role	Expertise	DQC	ATR
DQC Team 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	Yes	No
	discipline (such as planning, economics, environmental resources, etc).		
ATR Team Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents, CSRM studies and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as the	No	Yes
Planning	A senior water resources planner with experience in CSRM projects with periodic renourishment and associated planning reports and documents. For ATR, The plan formulator should be a senior water resources planner with experience in CSRM projects and associated planning reports and documents. Plan formulation ATR certification is required.	Yes	Yes
Economics	Experience with applying theory, methods and tools used in the economic evaluation of water resources projects. The economics reviewer will have a thorough understanding of CSRM projects with periodic renourishment, benefit-cost-ratio (BCR) updates, Beach- FX and incidental benefits (preferably recreation). Experience with evaluating incremental analysis & coastal storm risk management benefits; familiarity with the USACE tool Institute for Water Resources Planning Suite II (IWR-PLAN).	Yes	Yes
Environmental Resources	A senior biologist/ecologist/environmental engineer, preferably with experience in CSRM projects. They must be able to review for NEPA compliance (including cultural resources coordination) and have a thorough understanding of coastal ecosystems, marine ecosystems, Coastal Barrier Resources Act (CBRA) and CSRM projects.	Yes	Yes
Real Estate	The real estate reviewer should be a senior real estate specialist with experience in CSRM projects.	Yes	Yes
Climate Preparedness and Resilience	The reviewer should be experienced in performing and presenting climate change information in accordance with Engineering and Construction Bulletin (ECB) 2018-14. The team member must be certified by the Climate Preparedness and Resilience Community of Practice (CoP).	No	Yes
Coastal Engineer	The team member should be a registered professional with experience in CSRM projects, experience with or knowledge beach nourishment.	Yes	Yes

Table 2: Review Teams - Disciplines and Expertise

	sand sources, and coastal structures. This team member should also have experience with formulation of adaptation strategies for beach nourishment projects.		
Cost Engineering	A registered professional with experience in cost engineering and have a thorough understanding of CSRM projects, dredging costs and coastal structures estimates. The ATR reviewer should be Walla Wall Cost Mandatory Center of Expertise/Technical Center of Expertise (MCX/TCX) approved cost reviewer as the cost estimate for this document is anticipated to need Cost and Schedule Risk Assessment (CSRA) and Cost MCX/TCX review and Certification.	Yes	Yes
Risk and Uncertainty	The reviewer will be experienced with performing and presenting risk analyses in accordance with ER 1105-2-101 and other guidance, including familiarity with how information from the various disciplines involved in the analysis interact and affect the results. This review can be combined with either the Economics or Coastal reviews.	No	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. In accordance with SAD memorandum (Endorsement, and Limited Vertical Team Alignment of Proposed Scope, Schedule and Funding, Surf City, NC Coastal Storm Risk Management (CSRM) General Reevaluation Report (GRR)), 13 January 2023 no modeling activities are required for this report.

5. Supporting Information

Study or Project Background

Study Authority

A Chief's Report for the Surf City (SC) and North Topsail Beach (NTB), North Carolina Feasibility Study was signed on December 30, 2010. The report recommended authorization for a plan to manage coastal storm risk by construction of a berm and dune along the Surf City and North Topsail Beach shorelines. The Recommended Plan included a 52,150 ft long dune and berm system to be constructed to an elevation of 15 ft National Geodetic Vertical Datum (NGVD29) fronted by a 7 ft NGVD29 (50 ft wide) beach berm with a main fill length of 52,150 ft, extending from the boundary between Topsail Beach and Surf City to the southern edge of the Coastal Barrier Resources Act (CBRA) Zone in North Topsail Beach. The Recommended Plan also included renourishment at six-year intervals. Material for the dune and berm construction and renourishment were to be dredged from borrow sites identified between one to six miles off the coast of Topsail Island. The Recommended Plan also included post-construction monitoring over the period of Federal participation to ensure project performance and adjust renourishment plans as needed. Since the Recommended Plan would not have any significant adverse environmental effects, no mitigation measures or compensation measures would be required. The Recommended Plan was the National Economic Development (NED) Plan for coastal storm risk management.

Construction of the Surf City and North Topsail Beach, North Carolina project was authorized by Section 7002(3)2 of the Water Resources Reform and Development Act of 2014.

The project was funded for construction by Public Law 116-20, the Additional Supplemental Appropriations Disaster Relief Act (DRA) of 2019.

In July 2021, the Town of North Topsail Beach notified the U.S. Army Corps of Engineers Wilmington District (SAW) of its intent to not proceed with the town's portion of the project. A General Reevaluation Report for the Surf City section of the project must be approved in order to proceed with construction under DRA 19. The intent of this report is to receive authorization for the Surf City portion, de-authorize the North Topsail Beach portion, and document a 50-year Federal participation in the project.

Study or Project Area

The project is located on Topsail Island in Pender County, North Carolina. Topsail Island is a 22mile-long and 0.5-mile-wide barrier island approximately 40 miles northeast of the city of Wilmington, North Carolina. The island coastline faces the Atlantic Ocean to the southeast. Other water bodies in the vicinity of the project include the New River Inlet immediately to the northeast, the Banks Channel and the Atlantic Intracoastal Waterway (AIWW) to the northwest, and New Topsail Inlet in the far southwestern end of the island.

Over the past 40 years, the study area has developed rapidly as a family ocean resort community for outdoor recreation. On summer weekends the population can be in the tens of thousands. In the off-season, the population drops to about 2,200 residents. During the summer months, a large portion of the homes within the study area are available as summer rentals to vacationers primarily

from inland North Carolina and other locations around the Eastern United States.

Surf City is uniformly developed with a wide range of structures consisting of single-family dwellings, multi-unit apartments and condominiums, commercial buildings, and a few hotels. Most of the developable land in the study area is already occupied with structures. Roadway access to the mainland is provided via North Carolina (N.C.) Highway 50 to Surf City and then by bridges on N.C. Highway 50/210 at Surf City and N.C. Highway 210 at North Topsail Beach. Public access to the beach is provided by numerous parking areas and dune walkovers.

Surf City's interest is in constructing the previously authorized project over 6 miles of shoreline extending from the Topsail Beach/Surf City southern town limits to the northern town limit of Surf City/North Topsail Beach. From the shoreline, the study area extends landward approximately 500 feet (ft). Seaward, the study area extends from the shoreline approximately 1 mile. The study area also includes offshore borrow areas lying 1 to 6 miles from the shoreline.



Figure 1 – Project Area Map

Problem Statement

The town of Surf City is currently vulnerable to the impacts of erosion, storm surge and wave attack created by severe coastal storms and compounded by sea level rise. These impacts disrupt the economic, environmental, and social characteristics of the community and places the town's residents and property at risk for future loss.

Goals and Objectives

The objective of this study is to determine if a Town of Surf City project, without the inclusion of the Town of North Topsail Beach, remains economically justified, environmentally acceptable, and technically feasible. If true, the report will recommend deauthorization of the Town of North Topsail Beach's portion of the project to allow the Town of Surf City's portion of the project to be constructed utilizing DRA 19 construction funds according to implementation guidance.

Formulation is only to the extent of reducing the length of the authorized project to be within the Town of Surf City only with a small transition extending into North Topsail Beach. The report will evaluate the authorized template for Surf City as a separate element and will remove the authorized template located in the Town of North Topsail Beach. The report will describe changed conditions since authorization and if changes impact the authorized template for Surf City. The report will not

reformulate alternatives or run new engineering and economic models. In accordance with previous vertical team discussions, it was determined that performance of additional modeling will not enhance the recommendation significantly and therefore completing these models again is not recommended. Instead, the District will complete a Sea Level Change Adaptation Plan to minimize risk and uncertainty associated with project performance. The report will only confirm the existing authorized plan within Surf City is still feasible based on current USACE policies, guidance, and regulations.

The objective for this project is to manage risks for the town of Surf City, North Carolina from coastal storms compounded with sea level rise over a 50-year period. Additional objectives for the project include:

- Reduce life, health, and safety risks
- Maintain social cohesiveness for residents
- Limit disruptions to regional economic opportunities while maintaining economic vitality
- Maintaining community and emergency services during and after a major coastal storm event
- Maintain or increase suitable and critical habitat for threatened or endangered species, terrestrial and marine resources, and migratory birds

Future Without Project Conditions

Future without project conditions were captured in Sections 3.08 and 3.09 of the 2010 Feasibility Report. Many of the conditions identified in that report have occurred as expected, exacerbated by the delay in construction of the project since authorized. As identified in the previous report, continued long term erosion of the shore and inundation from storms has led to escarpment of the dunes, repeated property damage, and loss of sea turtle nesting habitat. However, not all conditions evolved as predicted. The rate of sea level change has been observed to be higher than anticipated in the Feasibility Report. This General Reevaluation Report will confirm those without project conditions and subsequent observations and if they impact the authorized template for Surf City.

Types of Measures/Alternatives Being Considered

In accordance with previous vertical team coordination, it was determined that plan formulation is proposed only to the extent of reducing the length of the authorized project to be within the town of Surf City only. The study will evaluate the authorized template for Surf City as a separate element and will remove the authorized template located in the town of North Topsail Beach. The GRR will describe changed conditions since authorization and if they impact the authorized template for Surf City. The team will not reformulate alternatives but will only confirm the existing authorized plan within Surf City is still feasible based on current USACE policies, guidance, and regulations. Therefore, only the following alternatives were considered for the project:

Alternative	Description		
Alternative 1	No Action		
Alternative 2a	Reduced length and existing environmental windows for initial construction and all subsequent nourishments		

Alternative 2b	Reduced length and expanded environmental windows for initial construction and all subsequent nourishments
Alternative 2c	Reduced length and elimination of environmental windows for initial construction, expanded environmental windows for all subsequent nourishments

The recommended plan is Alternative 2c which is similar to the authorized plan with three differences. The recommended plan eliminates the North Topsail Beach portion of the project, thereby shortening the project from approximately 9.9 miles to 6 miles. The recommended plan adds a 1000-foot tapered transition at the northern town (and project) limit line that extends into the Town of North Topsail Beach.

Finally, the recommend plan will consider year-round initial placement of material, a departure from the environmental dredging and placement windows for initial construction that were contained in the initial plan. This will allow for the shortest construction duration, reducing re-mobilization costs and offering protection to homes and infrastructure in the shortest time possible. All subsequent nourishments will be in accordance with environmental windows, which may be expanded to allow for project completion in one season.

Estimated Cost/Range of Costs

The ROM for initial construction is estimated to be \$173M. The total cost of construction is estimated to be \$450M.

6. Models to be Used in the Study

No modeling activities are required for this General Reevaluation Report. The scope of the report does not include plan reformulation, therefore, no modeling is required. The scope of the report is to confirm the existing authorized plan remains feasible based on current conditions. The report will compare the 2010 report data, note any changed conditions, and identify their impacts to the authorized project. An analysis of the data and assumptions that were used in the 2010 Feasibility Report modeling will be completed and compared to current model conditions. Although the models used to calculate performance have changed (GRANDUC to Beach-Fx, etc.), their logic and assumptions are consistent or at least similar to current models. When compared, their outputs are analogous.

In lieu of new modeling, an Adaptation Strategy to address the effects of sea level change will be completed as part of the report to address changes in conditions since the plan was authorized. No Adaptation Strategy was developed for the 2010 report. In the time since the 2010 report was completed changes to the existing conditions and assumptions have occurred. The new report will address these changes but will not seek changes or alterations to the authorized plan within the Town of Surf City. The report will analyze options to adapt the authorized plan to these changes and identify actions to take if those changes impact the authorized plan.

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 were used in the development of the 2010 Feasibility Report. These models will not be rerun as part of this report:

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
Generalized Risk and Uncertainty Coastal (GRANDUC)	Model used to estimate benefits and costs associated with CSRM projects	Approved
Recreation Analysis	Unit Day Value Analysis Spreadsheet	Approved

Table 3:	Planning	Models
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EC 1105-2-412 does not cover engineering models used in planning. The responsible use of wellknown 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, Hydrology, Hydraulics and Coastal (HH&C) models need to comply with the requirements of HH&C Community of Practice (CoP) Enterprise Standard 08101.

The following engineering models were used in the development of the 2010 Feasibility Report. These models will not be rerun as part of this report:

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Approval Status
Storm-Induced Beach Change (SBEACH)	Numerical model for simulating storm-induced beach change	Approved
GENESIS	Model used to determine future shoreline geometry	Approved
Planform Evolution Model	Model used to simulate beachfill planform evolution	Approved
Empirical Simulation Technique (EST) Model	Model used to generate frequency of occurrence relationships for erosion distances and other parameters	Approved

Table 4: Engineering Models.

No model user or model coordination questionnaires were required. Questions about the past model application and their outputs can be directed to the study's economist and coastal engineer.

7. Factors Affecting Level and Scope of Review

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

section helps in the scoping of reviews through the considerations of various potential risks.

Objectives of the Reviews

Engineer Regulation (ER) 1165-2-217 "Civil Works Review Policy" establishes procedures to ensure the quality and credibility of U.S. Army Corps of Engineers documents and work products. All work products undergo robust, and appropriate review. Reviews focus on the internal review process of science and engineering, identification of key risk-informed decisions and timing of reviews for highrisk items and features that warrant additional evaluation by sequential reviews, as well as transparency, clarity and consistency of information.

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? Yes

Discretionary IEPR

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

Potential IEPR Exclusion

- Is the project cost greater than \$200 million? Yes; and
- Does the project have an Environmental Impact Statement (EIS)? Yes, an EIS was completed for the approved 2010 Feasibility Report, but one is not anticipated for this General Reevaluation Report.

IEPR Exclusion Condition A.

- Does the study include an EIS? Yes, an EIS was completed for the approved 2010 Feasibility Report, but one is not anticipated for this General Reevaluation Report.
- Is the project controversial? **No**; this study had the potential to be controversial among resource agencies due to the presence of special status species, and hardbottom/coral reef resources within the study area; however, that risk has been reduced with recent environmental surveys and it has informed how the project would be implement with respect environmental windows, to the point where impacts were avoided.
- Does the project have more than negligible adverse impacts on scarce or unique tribal, cultural, or historic resources? **No**
- Does the project have substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures? **No**
- Does the project, before implementation of mitigation measures, have more than a negligible adverse impact on a species listed as endangered or threatened species under the Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq.) or the critical habitat of such species designated under such Act? Yes, however, an IEPR was completed as part of the approved 2010 Feasibility Report.

Decision on IEPR This study is limited in scope and would not significantly benefit from a second

IEPR. An IEPR was previously completed as part of the approved 2010 Feasibility Report. All comments from the original IEPR were satisfactorily resolved, and none of the proposed changes implicate issues raised in the IEPR. This report is being developed only to verify that construction of the project's authorized features is still environmentally acceptable, economically justified and feasible from an engineering and design standpoint without inclusion of North Topsail Beach. Based on project facts listed above, this project contains one mandatory trigger described in ER 1165-2-217, section 6.4. The total project cost is more than \$200 million. However, there is a potential for projects costing over \$200 million to be excluded from IEPR if an exclusion is granted. Per ER 1165-2-217, section 6.6, the MSC Commander has delegated authority to approve the IEPR Exclusion based upon a risk-informed decision and recommendation. An IEPR exclusion is being requested concurrently with this review plan since no other mandatory conditions listed in this section are met: the General Reevaluation Report 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 Director of Civil Works 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.

- If the document doesn't meet the IEPR mandatory triggers in ER 1165-2-217, discuss:
 - the consequences of non-performance on project economics, the environmental and social well-being (public safety and social justice);
 - 0

The Surf City CSRM Project is expected to address current coastal storm risks in the project areas. Construction of the features proposed are not expected to produce significant risks to public safety nor social justice issues. There are no environmental justice communities in the area.

• If the product is likely to contain influential scientific information or highly influential scientific assessment;

The project will not contain influential scientific information or highly influential scientific assessment.

• If and how the decision document meets any of the possible exclusions described in ER <u>1165-2-217.</u>

This CSRM project satisfies the criteria in ER 1165-2-217, paragraph 6.6 for eligibility exclusion from IEPR. The authorized project involves features where there is ample experience within the USACE and industry to perform and there is minimal life safety risk. The work on the proposed project is limited in scope that the study would not significantly benefit from IEPR.

Assessing Other Risk Considerations

This section discusses the factors affecting the risk informed decisions on the appropriate scope and level of review. The discussion is intended to be detailed enough to assess the level and focus of review and support the Project Delivery Team, PCX-CSRM, and vertical team decisions on the appropriate levels of review and types of expertise represented on the various review teams. Factors affecting the risk informed decisions on the appropriate scope and level of review include the following:

- <u>Will the study likely be challenging?</u>
- No. The project is authorized and will utilize the same general design that was authorized in the 2010 project report previously coordinated with the public.
- <u>Provide a preliminary assessment of where the project risks are likely to occur and assess the magnitude of those risks.</u>

A risk- and uncertainty-based analysis was performed for the project as described in the original feasibility report and PED analysis. Project risks are medium. All technical areas used methods to identify and mitigate inherent risks: cost risk was mitigated through contingencies coordinated with the Cost MCX; environmental risks are considered medium and were 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) reduced risks associated with the project.

Potential risks identified as a result of this project include:

1. The project benefits may not have increased in terms of value comparable to the increased cost of the project.

2. The project may include year-round dredging and placement, requiring additional documentation under the National Environmental Policy Act (NEPA) and related statutes.

3. There may be increased risk to project performance due to the shortened project length. This risk may increase the need for more frequent or larger renourishments due to higher than expected planform erosion. To mitigate this risk, the proposed alternative includes a 1,000 ft tapered transition.

- <u>Is the project likely to be justified by life safety or is the study or project likely to involve significant life safety issues?</u>
 No. The project was not justified by life safety risk and life safety issues may remain but are managed as a result of coastal storms being notice events and evacuations ordered prior to storm impacts. However, compliance with evacuation orders cannot eliminate all life safety risk due to non-compliance.
- <u>Has the Governor of an affected state requested a peer review by independent experts?</u> **No**. The Governor of North Carolina has not requested a peer review by independent experts.
- <u>Will it likely involve significant public dispute as to the project's size, nature, or effects?</u> **No**. The project does not involve significant public dispute. Throughout the feasibility and PED phases the public has continued to support the project.
- <u>Is the project/study likely to involve significant public dispute as to the economic or</u> <u>environmental cost or benefit of the project?</u>

No. This project does not involve significant public dispute. Throughout the feasibility and PED phases the public has continued to support the economic and environmental cost of the existing project.

• <u>Is the information in the decision document or anticipated project design likely to be based</u> 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?

No. The information in the study documents demonstrates that the project design is not based on novel methods, does not involve the use of innovative materials or techniques, does not present complex challenges for interpretation, nor does it contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices. The project will use standard design and construction techniques that are used on similar projects. The only aspect of the project that may potentially be considered precedent-setting would be year-round initial construction to comply with the National Marine Fisheries Service (NMFS) 2020 South Atlantic Regional Biological Opinion (SARBO). Other projects in the State have received authorization to construct year-round, and it is the 2020 SARBO, and not this project, that sets the precedent for dredging without seasonal restrictions. Once constructed, periodic renourishments would be accomplished in the timeframe of November 16 to April 30 to avoid impacts to nesting sea turtles.

- <u>Does the project design require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design/construction schedule?</u>
 No. The project scope changes will not require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule.
- <u>Is the estimated total cost of the project greater than \$200 million?</u>
 Yes. The total cost of the project including initial construction and subsequent renourishments is greater than \$200 million.
- <u>Will an Environmental Impact Statement be prepared as part of the study?</u> An updated Environmental Assessment will be completed to accommodate scope changes and to address changes in construction timeframes since the feasibility and PED phases. The EA will determine whether an EIS will be required.
- <u>Is the project expected to have more than negligible adverse impacts on scarce or unique tribal, cultural, or historic resources?</u>
 No. The project changes will not have an adverse impact to scarce or unique tribal, cultural, or historic resources. Proactive measures will be incorporated before construction to avoid or minimize these impacts.
- Is the project expected to have substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures?
 No. The scope and construction timeframe changes will not have substantial adverse impacts on fish and wildlife species. Proactive measures will be incorporated before construction to avoid or minimize these impacts.

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?
 Yes. An IEPR was previously completed as part of the approved 2010 Feasibility Report. The project scope and construction timeframe changes will not have more than a negligible adverse impact on an endangered or threatened species or its designated critical habitat. Although the project will result in adverse effects to some endangered and threatened species, impacts would not affect any species at the population level. All work will be done in accordance with the conservation measures included in the forthcoming US Fish and Wildlife Service Biological Opinion and the South Atlantic Regional Biological Opinion (SARBO).

8. Risk Informed Decisions on Level and Scope of Review

Targeted ATR. Will a targeted ATR be conducted for the study? No

IEPR Decision. An IEPR was completed as part of the original Feasibility Report. However, this study is limited in scope and would not significantly benefit from an IEPR. The report is being developed only to verify that construction of the project's authorized features is still environmentally acceptable, economically justified and feasible from an engineering and design standpoint without inclusion of North Topsail Beach. Based on project facts listed under Section 1 above, this project contains one mandatory trigger described in ER 1165-2-217, section 6.4. The total project cost is more than \$200 million. However, there is a potential for projects costing over \$200 million to be excluded from IEPR if an exclusion is granted. Per ER 1165-2-217, section 6.6, the MSC Commander has delegated authority to approve the IEPR Exclusion based upon a risk-informed decision and recommendation. An IEPR exclusion 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 Director of Civil Works 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.

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. Based on the project as currently envisioned, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, has concluded that a IEPR Safety Assurance Review of this project is not required for this decision document. 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.

9. Policy and Legal Compliance Review

Policy and legal compliance review of draft and final planning decision documents is delegated to the MSC (see EP 1105-2-61).

(i) Policy Review.

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

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

(ii) Legal Review.

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

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

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

10. Public Comment

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

11. Documents Distributed Outside the Government

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

"This information is distributed solely for the purpose of pre-dissemination review under

applicable information quality guidelines. It has not been formally disseminated by USACE. It does not represent and should not be construed to represent any agency determination or policy."

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.

<u>Agency Technical Review</u>. 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 ATR and IEPR teams. 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.

<u>Policy and Legal Compliance Review</u>. 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.

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. Additional public review will occur when the report and environmental compliance document(s) are released for public and agency comment.

Appendix B – Team Rosters

	PROJECT DELIVERY TEAM				
Name	Office	Position			
	CESAW-PM-DG	Project Manager			
	CESAW-ECP-ED	Design			
2	CESAW-ECP-P	Plan Formulation			
	CESAJ-PD-D	Economics			
	CESAW-ECP-EC	Coastal Engineer			
	CESAW-ECP-PE	Environmental			
	CESAW-ECP-EG	Geotechnical Engineer			
	CESAW-ECP-ET	Cost Engineer			
	CESAS-RE-A	Real Estate			
	CESAW-OC	Office of Counsel			

DISTRICT QUALITY CONTROL			
Name	Office	Position	
	CESAW-ECP-P	DQC Lead/Plan Formulation	
	CESAJ-PD-D	Economics	
	CESAW-ECP-EC	Coastal Engineering	
	CESAW-ECP-PE	NEPA	
	CESAS-RE-A	Real Estate	
	CESAW-ECP-ET	Cost Engineering	
190 (P)	CESAW-ECP-EG	Geotechnical Engineer	
	CESAW-ECP-ED	Design	
	CESAW-OC	Office of Counsel	

AGENCY TECHNICAL REVIEW		
Name	Office	Position
	CESAJ-EN-WC	ATR Lead and Plan Formulation
	CENAO-WRP	Economics
	CESAJ-PD-PN	Environmental
	CENAE-EDW	Coastal Engineering
	CENWW-ECE	Cost Engineering
	CENAB-REC	Real Estate
	CENAE-EDW	Climate Preparedness and Resilience
	CESPK-PDW-E	Risk and Uncertainty

POLICY and LEGAL COMPLIANCE REVIEW TEAM		
Name	Office	Position
	CESAD-PDH	Review Manager
	CESAD-PDP	Economics
	CEHQ	Environmental
	CECW-PDP	Plan Formulation
	CESAD-PO	Operations
	CESAD-RBT	Engineering
	CESAD-RBT	Cost Engineering
	CENWP-ENC-HY	Climate Preparedness and
		Resilience
	CESAD-PDR	Real Estate
	CESAD-OC	Counsel

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