DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

CENAO-ZA (800C) 27 May 2025

MEMORANDUM FOR U.S. Army Corps of Engineers, North Atlantic Division (CENAD-PD-X /Mr. Cresitello), 301 John Warren Avenue, Fort Hamilton Community, Brooklyn, NY 11252-6700

SUBJECT: Submission of the Review Plan for Collier County, Florida Coastal Storm Risk Management Feasibility Mega Study for North Atlantic Division Approval

1. Reference ER 1165-2-217, Civil Works Review Policy, 2 September 2024.

2. Background: The Review Plan for the Collier County Coastal Storm Risk Management Feasibility Mega Study was endorsed by the Planning Center of Expertise for Coastal Storm Risk Management (PCX-CSRM) and later approved by the North Atlantic Division (NAD) on 8 May 2023. Since approval, the Norfolk District has substantially updated the study schedule and technical review timelines in alignment with the vertical team and the PCX-CSRM; therefore, the Norfolk District updated the Review Plan (Enclosure 2) and resubmitted to the PCX-CSRM for review for technical sufficiency and compliance with Civil Works Review Policy. The review was performed in coordination with representatives from the National Ecosystem Restoration Planning Center of Expertise as well as the Hydrology, Hydraulics, and Coastal Community of Practice and was completed on 1 November 2024 via a signed endorsement memorandum (Enclosure 1).

3. Request: The Norfolk District requests that the NAD approve the updated Review Plan.

4. Point of Contact: Questions should be directed to Kristen Wynn, Project Manager. She may be reached at (757) 201-7715 or via email at kristen.w.wynn@usace.army.mil.

2 Encls

ANTHONY C. FUNKHOUSER, PMP
LTC, EN
Commanding

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS NORTH ATLANTIC DIVISION
FORT HAMILTON MILITARY COMMUNITY
302 JOHN WARREN AVENUE
BROOKLYN NY 11252-6700

CENAD-PD-P (1105-2-10c)

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, Norfolk District, 803 Front Street, Norfolk, VA 23510-1011

SUBJECT: Submission of the Review Plan – Collier County, Florida Coastal Storm Risk Management Feasibility Mega Study for North Atlantic Division Approval

1. Reference:

a. CENAO-ZA, Memorandum, (Submission of the Review Plan – Collier County, Florida Coastal Storm Risk Management Feasibility Mega Study for North Atlantic Division Approval) 27 May 2025.

b. CENAD-PD-P, Memorandum, (Collier County, Florida Coastal Storm Risk Management Feasibility Study". Review Plan update endorsement) 1 November 2025,

2. The National Planning Center for Expertise for Coastal Storm Risk Management (PCX-CSRM) of the North Atlantic Division (NAD) is the lead office to execute the referenced Review Plan. The Review Plan includes Independent External Peer Review.

3. The enclosed Review Plan is approved for execution and is subject to change as study circumstances require, consistent with study development under the Project Delivery Business Process. Subsequent revisions to this Review Plan or its execution require new written approval from NAD.

4. The point of contact is Mr. R. Brian Paul, NAD Planning Program Manager at 347-622-2878 or Robert.B.Paul@usace.army.mil.

Encl

JOHN P. LLOYD
Brigadier General, USA
Commanding

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NORTH ATLANTIC DIVISION
FORT HAMILTON MILITARY COMMUNITY
302 JOHN WARREN AVENUE
BROOKLYN, NY 11252-6700

CENAD-PD-P (1105-2-10c) 1 Nov 2024

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, Norfolk District (CENAO-WRP-R/Abbegail Preddy) Fort Norfolk 803 Front Street, Norfolk, VA 23510-1011

SUBJECT: Collier County, Florida Coastal Storm Risk Management Feasibility Study

1. The National Planning Center of Expertise for Coastal Storm Risk Management (PCX-CSRM) has reviewed the updated Review Plan (RP) for the subject study and concurs that the RP complies with current peer review policy requirements contained in ER 1165-2-217, entitled “Civil Works Review Policy”.

2. Endorsement of the RP, along with the required model user and coordination questionnaires, documents compliance with CECW-P memo (28 July 2023), "Model Coordination for Civil Works Planning Studies," to coordinate models and confirm assigned modelers possess the requisite knowledge and experience to complete modeling tasks to ensure the feasibility study is successful.

3. The review was performed by the PCX-CSRM in coordination with representatives from the National Ecosystem Restoration Planning Center of Expertise (ECO-PCX) and the Hydrology, Hydraulics, and Coastal Community of Practice (HH&C CoP).

4. PCX-CSRM has no objection to RP approval by the Commander, North Atlantic Division.

5. Thank you for the opportunity to assist in the preparation of the RP. PCX-CSRM is prepared to lead the Agency Technical Review for the subject study and will continue to coordinate with the PDT. For further information, please contact me at 347-370-4571.

LARRY COCCHIERI
Deputy, National Planning Center of Expertise for Coastal Storm Risk Management

Review Plan

November 2024

1. Project Summary

Study Name: Collier County, Florida Coastal Storm Risk Management Feasibility Study
Location: Collier County, Florida
P2 Number: 476674

Decision and Environmental Compliance Document Type: Integrated Feasibility Report and Environmental Impact Statement (IFR/EIS)

Congressional Authorization Required: Yes

Project Purpose(s): Coastal Storm Risk Management

Non-Federal Sponsor: Collier County

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

District: Norfolk District
District Contact: Project Manager (Norfolk): (757) 993-0874

Major Subordinate Command (MSC): North Atlantic Division
MSC Contact: Review Manager: (917) 751-3013

Review Management Organization (RMO): National Planning Center of Expertise for Coastal Storm Risk Management (PCX-CSRM)
RMO Contact: Deputy Director, PCX-CSRM, (347) 370-4571

Key Review Plan Dates

Date of RMO Endorsement of Review Plan	October 29, 2024
Date of MSC Approval of Review Plan	May 8, 2023
Date of IEPR Exclusion Approval	N/A
Has the Review Plan changed since RMO Endorsement?	Yes
Date of Last Review Plan Revision	October 22, 2024
Date of Review Plan Web Posting	May 29, 2023

Milestone Schedule and Other Dates

	Scheduled	Actual
FCSA Execution		10/09/18
ASA(CW) Approval Memo for Additional Study Time and Funds		08/02/22
Alternatives Milestone		N/A[1]
Tentatively Selected Plan Milestone	03/12/2025	
Release Draft Report to Public	05/12/2025	
Agency Decision Milestone	09/24/2025[2]	
Final Report Transmittal	02/17/2026[2]	
State & Agency Briefing	03/23/2026[2]	
Chief's Report or Director's Report	06/17/2026[2]	

[1]Alternative Milestone Meetings are not a requirement for feasibility studies that previously had a successful AMM and received a policy exception for additional study resources to reengage in plan formulation.

[2]The ASA(CW) memorandum dated August 2, 2022 approved an additional three years for the feasibility study, leading to a signed Chief's Report by August 2, 2025. However, the PDT is currently routing a combined Vertical Team Alignment Memorandum (VTAM) and Additional Study Resources Request to the ASA(CW) for approval. At this time, the additional resource request has not yet been approved.

2. References

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

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

CECW-P Memorandum, Model Coordination for Civil Works Planning Studies, 28 July 2023.

Engineer Pamphlet 1105-2-61 – Planning – Feasibility and Post-Authorization Study Procedures and Report Processing Requirements, 1 July 2023

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

3. Review Execution Plan

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

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

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

Table 1: Schedule and Costs of Reviews

Product(s) to undergo Review	Review Level	Site Visit	Start Date	End Date	Cost	Complete
Economic Models	Targeted Models ATR for FWOP and FWP	No	11/12/2024	12/12/2024	$30,000	No
Draft IFR/EIS	DQC	No	03/14/2025	04/18/2025	$50,000	No
Draft IFR/EIS	ATR	No	05/12/2025	06/16/2025	$50,000	No
Draft IFR/EIS	Public Comment under National Environmental Policy Act	Yes	05/12/2025	07/11/2025[1]	N/A	No
Draft IFR/EIS	Policy and Legal Compliance Review	No	05/12/2025	07/18/2025	N/A	No
Draft IFR/EIS	IEPR	No	05/26/2025	07/25/2025	$100,000	No
Final IFR/EIS	DQC	N/A	12/01/2025	01/10/2026	$40,000	No
Final IFR/EIS	ATR	N/A	01/10/2025	02/10/2026	$40,000	No
Final IFR/EIS	Policy and Legal Compliance Review	N/A	02/17/2026	04/10/2026	N/A	No
Final IFR/EIS	Release Final Report under National Environmental Policy Act	No	04/10/2026	05/10/2026	N/A	No
Review Management Organization – Coordination and Participation	A RMO will participate in most key meetings including In-Progress Reviews, Issue Resolution Meetings and SMART Milestone Meetings	No	N/A	N/A	N/A	No

[1]Per the requests from stakeholders, municipalities in Collier County, and the public, the PDT requested approval to extend the Draft Report NEPA Public Review and formal comment period from the standard 45 days to 60 days. This request was coordinated through NAD and SAD, and was incorporated in the Notice of Intent that was approved by BG Hibner, SAD.

Table 2: Review Teams - Disciplines and Expertise

Discipline / Role	Expertise	DQC	ATR	IEPR
DQC Team Lead	Extensive experience preparing Civil Works decision documents and leading DQC. The lead may serve as a DQC reviewer for a specific discipline (planning, economics, environmental, etc.).	Yes	No	No
ATR Team Lead	Professional with extensive experience preparing Civil Works decision documents and conducting ATR. Skills to manage a virtual team through an ATR. The lead may serve on the ATR team for a specific discipline (such as planning, economics, or environmental work).	No	Yes	No
IEPR Manager	Planner with extensive knowledge of IEPR policy and procedures and contract management and oversight skills.	No	No	Yes
Planning	Skilled water resources planner knowledgeable in complex planning investigations and the application of SMART principle to problem solving.	Yes	Yes	Yes
Economics	Experience with applying theory, methods and tools used in the economic evaluation of water resources projects. Experience with Beach-Fx and G2CRM.	Yes	Yes	Yes
Environmental Resources	Experience with environmental evaluation and compliance requirements, national environmental laws and statutes, applicable Executive Orders, and other planning requirements. Also has experience with reviewing Habitat Suitability Index model inputs and outputs.	Yes	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	No
Hydraulic and Hydrologic/ Coastal Engineering	Engineer with experience applying hydrologic principles and technical tools to project planning, design, construction, and operation. The reviewer should be an expert in the field of coastal hydrology and hydraulics and have a thorough understanding of coastal storm wave dynamics and have experience in CSRM studies/projects. The reviewer should also be familiar with computer modeling techniques that were used for calculating benefits on CSRM studies, including Beach-fx and G2CRM.	Yes	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	No
Geotechnical Engineering	Experience with applying geotechnical principles and analysis methods to project planning, design, and construction of nonstructural and beach measures. Should also be familiar with geotechnical conditions of the south Florida region and within Collier County.	Yes	Yes	No
Real Estate	Experience developing Real Estate Plans and experience in real estate fee/easement acquisition and residential/business relocations for Federal and/or Federally Assisted Programs for implementation of Civil Works projects.	Yes	Yes	No
Climate Preparedness and Resilience	A member of the Climate Preparedness and Resiliency Community of Practice knowledgeable of coastal hydrology climate change assessment policy and practice.	No	Yes	No
Risk and Uncertainty	The risk and uncertainty reviewer should be a subject matter expert in multi-discipline risk analysis to ensure consistent and appropriate identification, analysis, and written communication of risk and uncertainty and ensure all requirements of ER 1105-2-101 are met.	No	Yes	No

4. Documentation of Reviews

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

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

Documentation of IEPR. The Outside Eligible Organization will submit a final Review Report no later than 60 days after the end of the draft report public comment period. USACE shall consider all recommendations in the final Review Report and prepare a written response for all recommendations. The final decision document will summarize the Review Report and USACE response and will be posted on the internet.

5. Supporting Information

Study or Project Background

Study Authority

The study authority is Section 4033 of Water Resources Development Act of 2007 (P.L. 110-114). Whereby the Secretary shall conduct a study to determine the feasibility of carrying out a project for hurricane and storm damage reduction and flood damage reduction in the vicinity of Vanderbilt, Park Shore, and Naples beaches, Collier County, Florida.

Study Area

The Collier County Coastal Storm Risk Management Feasibility Study is a single-purpose Coastal Storm Risk Management (CSRM) project located in southwest Florida (Figure 1). Collier County is located on the lower west coast of Florida, approximately 120 miles south of the entrance to Tampa Bay, adjacent to the Gulf of Mexico and about 100 miles northwest of Key West. Naples is the largest city located along the shoreline in the county. Collier County is comprised of nearly 200 square miles of landmass and roughly 300 square miles of water. It is the largest county in Florida by land area and fourth largest by total area (land and water). The estimated population for 2017 was nearly 373,000, which includes a dense population of people who require more time and assistance for evacuation. A large portion of the southeast section of the county lies within the Big Cypress

National Preserve, and the southern coastal section of the county is home to parts of the Everglades National Park.

Study Area Map

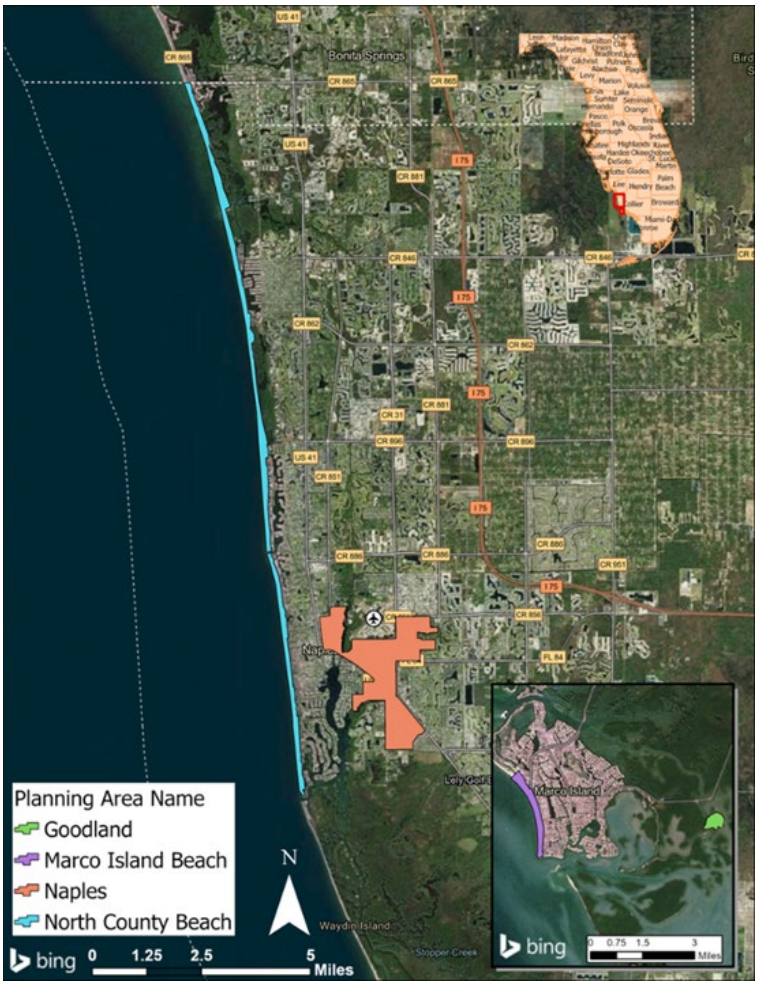

Figure 1 – Study Area Map showing the four Planning Areas

Problem Statement

The primary problem to be addressed by this study is that coastal storm events and their damage mechanisms such as beach erosion, wave action, and storm surge threaten economic damage and loss of residential and commercial structures, environmental resources, critical infrastructure, life safety, and general economic livelihood. Additionally, exacerbated inundation (both in depth and extent) from storm surge due to sea level change and the resulting higher still water levels (both tidal and groundwater) threaten properties and infrastructure.

Goals and Objectives

The Federal objective of water and related land resources project planning is to contribute to the national economic development consistent with protecting the nation's environment, pursuant to national environmental statutes, applicable executive orders, treaties, and other Federal planning requirements. The primary goal of this study is to recommend a suite of CSRM measures that will

manage the risk of damages due to coastal storm events in Collier County. This recommendation will be consistent with USACE CSRM mission area policies, applicable executive orders, and other Federal planning requirements.

The following objectives helped guide plan formulation to achieve study goals:

- Manage coastal storm risk to existing development and natural resources by reducing economic damages that result from coastal storm surge in Collier County over a 50-year period of analysis.
- Manage risk to life, health, and human safety that results from the storm surge inundation of development and Critical Infrastructure during coastal storms in Collier County over a 50-year period of analysis.
- Improve the coastal storm resiliency of Collier County by managing life safety risk to both the vulnerable coastal communities and the back bay Environmental Justice communities

Future Without Project Conditions

Since 1851, Collier County has been repetitively impacted by large storms. On average they have been hit by a tropical cyclone every two to three years, including 33 hurricanes, 20 of which were Category 3 or greater, and the most recent storm causing significant damage being Hurricane Irma in 2017 and Hurricane Ian in 2022. The feasibility study will address the coastal storm risk within the city and then formulate plans to reduce the impacts to human life, health, and safety and coastal storm-related damages to structures including critical infrastructure, economic productivity, community coastal resiliency, and the natural environment consistent with the limited study scope as directed by ASA(CW).

Types of Measures/Alternatives Being Considered

The previous three-year study for Collier CSRM formulated and evaluated an array of alternatives that included different combinations of structural measures, nonstructural measures including critical infrastructure, and beach renourishment. The purpose of the re-initiated feasibility study which kicked off in August 2022 is to reformulate alternatives that are environmentally acceptable and compliant, economically justified, engineeringly feasible, and supported by the NFS and Collier County community.

Estimated Cost/Range of Costs

Costs of alternatives are unknown at this time but given the size of the area, problem complexity, and potential magnitude of the nonstructural measures recommendation, project costs are expected to be well over $200 million.

6. Models to be Used in the Study

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models are any models and analytical tools used to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making.

The following planning models may be used to develop the decision document:

Table 3: Planning Models.

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
G2CRM version 0.4.564	G2CRM is used to evaluate coastal storm risk management alternatives in the back bays recommended in the study with a focus on problematic lifecycle issues like the impact of climate change and avoidance of repetitive damages. The model will allow for use of readily available data from existing sources and corporate databases and integration with GIS. A wide variety of outputs will be used for estimating damages and costs, characterizing and communicating risk, and reporting detailed model behavior in both the FWOP and with-project conditions studied.	Certified
Beach-fx, version 1.1.12 (with SBEACH CDAS Version 4.03)	Beach-fx is an analytical framework for evaluating the physical performance and economic benefits and costs of coastal storm risk management projects, particularly, beach nourishment along sandy shores. Beach-fx has been implemented as an event-based Monte Carlo life cycle simulation tool that is run on desktop computers.	Certified
RECONS 2.0	The Regional Economic System (RECONS) 2.0 model is a regional economic impact modeling tool developed by the USACE Institute for Water Resources (IWR) 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. The RECONS 2.0 model incorporates impact area data, multipliers, direct ratios, and geographic capture rates extracted from other planning models utilized to evaluate the economic effects of proposed actions.	Certified
UMAM	The Uniform Mitigation Assessment Method (UMAM) is a methodology for determining the amount of mitigation needed to offset adverse impacts to existing environmental resources. The UMAM will be used accordingly to determine mitigation needs of the proposed study recommendations.	Approved for use
Regional Recreation Model	Willingness to Pay (WTP) estimates were developed, utilizing data from the existing Deep-Water Horizon (DWH) oil spill and other relevant studies conducted using the Contingent Valuation Method (CVM) / Travel Cost Method (TCM). Using these estimates, a spreadsheet was used to calculate the benefit by equating visitation supply and demand to determine the appropriate number of yearly visitors to apply the WTP estimates throughout the 50-year period of analysis.	Approved for use
IWR Planning Suite II Version 2.0.9	The IWR Planning Suite is a water resources investment decision support tool built for the formulation and evaluation of ecosystem restoration alternative plans; however, it is now more widely used by all USACE business lines for evaluation of actions involving monetary and non-monetary cost and benefits.	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 should be used when

appropriate. For example, HH&C models need to comply with the requirements of HH&C CoP Enterprise Standard 08101.

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

Table 4: Engineering Models

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Approval Status
HEC-RAS 6.4.1 or latest (Flood Damage Reduction River Analysis Software)	This program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. The program will be used for steady flow analysis to evaluate the future without and with-project conditions.	CoP Preferred
SBEACH CDAS version 4.03	SBEACH is a numerical simulation model for predicting beach, berm, and dune erosion due to storm waves and water levels. It has potential for many applications in the coastal environment and has been used to determine the fate of proposed beach fill alternatives under storm conditions and to compare the performance of different beach fill cross-sectional designs.	CoP Preferred
MII version 4.4	MCACES is a cost estimating program used by cost engineering to develop and prepare all Civil Works cost estimates. Using this system, estimates are prepared uniformly allowing cost engineering throughout USACE and the A-E community to function as one virtual cost engineering team. The latest HQUSACE approved version of MCACES is mandatory beginning at the feasibility phase for the Federal recommended plan.	CoP Preferred
Oracle Crystal Ball	Crystal Ball is a DOD-licensed application applied on top of Excel to provide the capability of evaluating risks associated with the project and how they affect the construction costs. This spreadsheet-based application is utilized for predictive modeling, forecasting, Monte Carlo simulation, and optimization to enable the user to measure and report on the risk inherent in key cost assumptions and metrics.	CoP Preferred

All civil works planning studies must document compliance with CECW-P memo (28 July 2023), Model Coordination for Civil Works Planning Studies, to coordinate models and confirm assigned modelers possess the requisite knowledge and experience to complete modeling tasks. A questionnaire for each model is attached in Appendix F. This appendix also includes engineer model questionnaires for both G2CRM and Beach-fx as they are primarily economic models (see planning models table above) but utilize various engineering data inputs.

7. Factors Affecting Level and Scope of Review

All planning products are subject to the conduct and completion of DQC. Most planning products are subject to ATR and a smaller sub-set of products may be subject to IEPR and/or Safety

Assurance Review. Information in this section helps in the scoping of reviews through the considerations of various potential risks.

Objectives of the Reviews

The objectives of the technical and quality reviews outlined in Table 2 are as follows:

1. Ensure decision document quality and completeness.
2. Ensure decision document is compliant with federal laws and policies including but not limited to the NEPA, as well as USACE policies and plan formulation standards for coastal storm risk management feasibility studies.
3. Ensure sound assumptions, modeling and analyses methods, feasibility-level design, and plan formulation methods were utilized to develop the recommended measures/alternatives and appropriately documented in the decision document and supporting appendices.
4. Ensure external coordination with the non-Federal Sponsor, stakeholders, environmental resource agencies, and public throughout the study are appropriately documented in the decision document.

Assessing the Need for IEPR

Mandatory IEPR Triggers

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

Assessing Other Risk Considerations

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

  Yes. Because of the integration of both the back-bay and coastal areas in the study scope, integration of two economic models is required to accurately forecast economic benefits. Additionally, the team anticipates utilizing a habitat quality model to evaluate Nature-Based Solutions (NBS) benefits within the Environmental Quality (EQ) and Other Social Effects (OSE) accounts. Because the team anticipates challenges with quantifying the economic damages of the NBS measures within the NED account, justification of this measure would potentially require extensive coordination, preparation, and review of an NED exception.

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

  Sea level change (SLC) is a source of risk and uncertainty. PDT will manage the associated risk caused by SLC uncertainty by following USACE policies outlined in ER 1100-2-8162 to incorporate the direct and indirect physical effects of projected future SLC into plan formulation. The future RP is anticipated to be comprised of beach nourishment, nonstructural measures, and NBS only; therefore, there will be considerably more residual risk for the County compared to the level of risk that would be managed with structural measures. Additionally, there is risk with the level of design maturity per the feasibility-level design of nonstructural measures, particularly voluntary residential elevations. The PDT is anticipating the ability to meet class three cost estimate and design maturity requirements but will continue to monitor this risk as the study develops.

- Is the project likely to be justified by life safety or is the project likely to involve significant life safety issues?

  No, the study is not anticipated to be justified by life safety. However, life safety and community resiliency are considerations in the formulation strategy to focus on nonstructural measures for Environmental Justice communities and Critical Infrastructure.

- 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?

  No. While the renewed focus for formulation and alternatives evaluation is centered around Environmental Justice and comprehensive benefits, these initiatives are supported by ASA(CW) updated policy guidance and administration initiatives.

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

  No.

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

  No. Tribal, cultural, and/or historic resources are not expected to significantly impact plan formulation and/or selection; however, it may be possible to consider characteristics of historic properties within decision criteria for formulation of the nonstructural component of the study dependent on data availability. While historic properties could be adversely impacted per Section 106 and significantly impacted from a NEPA impact analysis context, the uncertainty of impacts will remain moderate to high until surveys are conducted during PED Phase.

- 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?

  Beach nourishment has the potential to impact aquatic resources such as hard bottom which may also require mitigation via construction of artificial reefs. The nonstructural measures will likely be minimal impact on the fish and wildlife in the study area.

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

  Beach nourishment has the potential to impact aquatic resources such as wetlands, hard bottom, and T&E spp. foraging, migration, and nesting (particularly sea turtle spp.), and will require formal Section 7 consultation and may require mitigation. Both the offshore dredging and sand placement components of beach nourishment measures pose potential impacts to sea turtles and sea turtle Critical Habitat, piping plover and piping plover Critical Habitat, the red knot, and the wood stork. Although not likely, hopper dredged could entrain or strike sea turtles giant manta rays; and beach nourishment could disrupt nearshore foraging and nesting for sea turtles and shorebirds. However, these adverse effects are expected to be manageable with best management practices, and terms and conditions, and

other potential mitigative measures per the US Fish and Wildlife Service and the Natural Marine Fisheries Service. The nonstructural measures will likely result in minimal impact on the fish and wildlife in the study area.

8. Risk Informed Decisions on Level and Scope of Review

Targeted ATR. Will a targeted ATR be conducted for the study? **Yes;** a targeted ATR will be conducted on the G2CRM and Beach-fx modeling, including both FWOP and FWP conditions, prior to draft report ATR.

IEPR Decision. IEPR is required for this decision document. This is the most independent level of review and is applied in cases that meet criteria where the risk and magnitude of the study are such that a critical examination by a qualified team outside of USACE is warranted. Certain criteria dictate mandatory performance of IEPR, and other considerations may lead to a discretionary decision to perform IEPR. For this study, a risk-informed decision has been made that IEPR is appropriate and will be conducted.

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. Insufficient detail is known about the need for Safety Assurance Review in the design and construction phases. Therefore, a decision will be made at a later time when more detailed information is known and in coordination with the Jacksonville District.

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 as well as SMART Planning Milestone meetings. These engagements may include In-Progress Reviews, Issue Resolution Conferences or other vertical team meetings plus the milestone events.

- The input from the Policy Review team should be documented in a Memorandum for the Record (MFR) produced for each engagement with the team. The MFR should be distributed to all meeting participants.

- Teams may choose to capture some of the policy review input in a risk register if appropriate. These items should be highlighted at future meetings until the issues are resolved. Any key decisions on how to address risk or other considerations should be documented in an MFR.

(ii) Legal Review.

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

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

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

10. Public Comment

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

11. Documents Distributed Outside the Government

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

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

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 study quality requirements of the Project Management Plan. The DQC team will read all reports and appendices. The review must evaluate the correct application of methods, validity of assumptions, adequacy of basic data, correctness of calculations (error-free), completeness of documentation, and compliance with guidance and standards. Districts are required to check all computations and graphics by having the reviewer place a highlight (e.g., place a "red dot") on each annotation and/or number indicating concurrence with the correctness of the information shown.

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

Independent External Peer Review. IEPR is required for this decision document. This is the most independent level of review and is applied in cases that meet criteria where the risk and magnitude of the study are such that a critical examination by a qualified team outside of USACE is warranted. Certain criteria dictate mandatory performance of IEPR and other considerations may lead to a discretionary decision to perform IEPR. For this study, a risk-informed decision has been made that IEPR is appropriate. The information in Section 1 – Factors Affecting the Scope of Review – informed the decision to conduct IEPR.

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.

Policy and Legal Compliance Review. 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.

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NORTH ATLANTIC DIVISION
FORT HAMILTON MILITARY COMMUNITY
302 JOHN WARREN AVENUE
BROOKLYN, NY 11252-6700

CENAD-DE (1130)

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, South Atlantic Division, 60 Forsyth Street, SW, Room 10M15, Atlanta, GA 30303-8801

SUBJECT: Amendment Number 1 to Memorandum of Agreement between North Atlantic Division (NAD) and South Atlantic Division (SAD) for Execution of 2018 Request for Emergency Supplemental Feasibility Studies

1. Enclosed is the signed Amendment Number 1 to the subject Memorandum of Agreement (MOA) that was executed 16 October 2018. Three Florida Feasibilities Studies were identified in the original 16 October 2018 MOA; these studies were Miami-Dade County, Collier County and Monroe County. Monroe County was completed under the original 16 October 2018 MOA. The purpose of this amendment is to clarify the roles and responsibilities for NAD and SAD concerning the remaining two supplemental studies.

2. With the reassignment of the SES Management Oversight responsibility from NAD to SAD, and the addition of SAD staff and Jacksonville District (SAJ) liaisons, it became necessary to clarify roles and responsibilities. I have reviewed the enclosed MOA and agree with the contents found therein.

3. My POC for this MOA is Joseph R. Vietri, CENAD-PD-P, (347) 374-4570.

LLOYD.JOHN.PHILLIP.1021070595 Digitally signed by LLOYD.JOHN.PHILLIP.1021070595 Date: 2022.12.23 13:07:47 -05'00'

Encls

JOHN P. LLOYD
Colonel, EN
Commanding

CF:
CESAD-PDP/Eric P. Summa
CESAD-PDH/Jacqueline J. Keiser
CENAD-PD-P/Joseph R. Vietri
CENAD-OD-P/Roselle H. Stern

AMENDMENT NUMBER 1
TO THE
MEMORANDUM OF
AGREEMENT BETWEEN
U.S. ARMY CORPS OF ENGINEERS, NORTH ATLANTIC DIVISION (NAD)
AND
U.S. ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION (SAD)
FOR
EXECUTION OF FEASIBILITY STUDIES, 2018 EMERGENCY SUPPLEMENTAL APPROPRIATION

This Amendment Number 1 is entered into by and between the South Atlantic Division (SAD, "Supported Division") and the North Atlantic Division (NAD, "Supporting Division") to add and clarify roles and responsibilities based on Senior Executive Service member overall study oversight reassignment from NAD to SAD on the Collier County Coastal Storm Risk Management (CSRM), Florida and Miami-Dade Back Bay CSRM, Florida projects for continued execution of these ongoing feasibility studies included in the 2018 Emergency Supplemental Long-term Disaster Recovery Investment Plan (LDRIP) for Investigations as set forth in the Memorandum of Agreement (MOA) executed on 16 October 2018. The Feasibility Phase of the Monroe County, Florida project has been completed under the original 16 October 2018 MOA and therefore the Monroe County Study is not addressed in this MOA amendment.

1. Replace ARTICLE V with the following:

Roles and responsibilities indicated here for the Collier County CSRM and Miami-Dade Back Bay CSRM projects in Florida are generalized. Unique, project specific roles and responsibility agreements should be mutually established as required. The mutually established roles and responsibilities for each project should be identified and detailed in the next PMP update via documentation of statements of work. The roles and responsibilities based on this amendment are listed in the table below and the roles and responsibilities as previously identified in ARTICLE V of the 16 October 2018 MOA are provided in tabular format for reference. Due to the change in lead SES Member, NAD/NOA will participate and provide updates at SAD PRB and DMR. Where decisions from HQ are delegated to the MSC, SAD is the referenced MSC.

The responsibility Regional Integrated Team (RIT) for processing of issues and documents related to the Collier County and Miami-Dade Back Bay studies will be the SAD-RIT.

	Collier County		Collier County		Miami Back Bay		Miami Back Bay	
	16 Oct 2018 MOA		Amendment #1		16 Oct 2018 MOA		Amendment #1	
Responsibilities	**District**	**Division**	**District**	**Div (1)**	**District**	**Division**	**District**	**Div (1)**
Request funds in accordance with Reference A.		NAD		NAD		NAD		NAD
Reports execution at RPRB's, DMRs, etc.		NAD		NAD (2)		NAD		NAD (2)
Quality Assurance, coordinating policy issues with HQ and PDT		NAD		NAD		NAD		NAD
Maintains continuous and open communication with Supported MSC		NAD		NAD		NAD		NAD
Provides Policy Review and Milestone approval in accordance Reference B.		NAD		NAD (3)		NAD (3)		NAD
Facilitates initial funds transfer, if required		SAD		SAD		SAD		SAD
Provides support to the supporting MSC as requested/required for smooth transition and execution		SAD		SAD		SAD		SAD
Maintains continuous and open communication with Supporting MSC		SAD		SAD		SAD		SAD
Responsible for study execution from handoff to study completion.	NAO	NAD	NAO	NAD (2)	NAO	NAD	NAO	NAD (2)
Ensures seamless transfer of project back to Supported District after study completion.	NAO	NAD	NAO	NAD	NAO	NAD	NAO	NAD
Develops scope, schedule, cost to complete	NAO		NAO		NAO		NAO	
Develops scope, P2 schedule and budget.	NAO	NAD	NAO	NAD	NAO	NAD	NAO	NAD
Prepares and defends Exception Request, if needed.	NAO	NAD	NAO	NAD (2)	NAO	NAD	NAO	NAD (2)
Assembles PDT	NAO	NAD	NAO	NAD	NAO	NAD	NAO	NAD
Manages study execution, cost,	NAO	NAD	NAO	NAD (2)	NAO	NAD	NAO	NAD (2)

	Collier County		Collier County		Miami Back Bay		Miami Back Bay	
	16 Oct 2018 MOA		Amendment #1		16 Oct 2018 MOA		Amendment #1	
Responsibilities	**District**	**Division**	**District**	**Div (1)**	**District**	**Division**	**District**	**Div (1)**
schedule, and deliverables								
Provides programs support for acquisition of additional funding to complete the study, if needed	NAO	NAD	NAO	NAD	NAO	NAD	NAO	NAD
Tracks funds usage against approved budget and request funds on an as needed basis.			NAO	NAD (2)			NAO	NAD (2)
Approves/endorses study phase fund request.				NAD				NAD
Coordinates needed actions through HQ-RIT.				NAD (2)				NAD (2)
Completes the study including draft and final feasibility reports, draft Chief's Report, and other required documents in accordance with applicable regulations, policy, and guidance	NAO		NAO		NAO		NAO	
Performs District Quality Control	NAO		NAO		NAO		NAO	
Acquires and response to Agency Technical Review	NAO		NAO		NAO		NAO	
Contracts and responds to Independent External Peer Review if required.	NAO		NAO		NAO		NAO	
Conducts joint communications and joint interoperability with NFS, Congressional delegates/staffers, and stakeholders through a supported district PM Liaison/PM Forward in close coordination with the Supporting MSC and Supporting District;		NAD	NAO/ SAJ (4)			NAD	NAO/ SAJ (4)	
Corporate Communications		SAD/NAD	SAJ/ NAO (5)			SAD/NAD	SAJ/ NAO (5)	

	Collier County		Collier County		Miami Back Bay		Miami Back Bay	
	16 Oct 2018 MOA		Amendment #1		16 Oct 2018 MOA		Amendment #1	
Responsibilities	**District**	**Division**	**District**	**Div (1)**	**District**	**Division**	**District**	**Div (1)**
Provides Supporting District(s)/MSC with study background information, prior fiscal and other relevant information and other support services as requested and resourced by the Supporting District.		SAD		SAD		SAD		SAD
Participates in SMART Planning milestone meetings		SAD		SAD		SAD		SAD
Provides any additional support that the Supporting District/MSC may require and fund in the execution of the studies.		SAD		SAD		SAD		SAD
Ensures seamless transition of project from Supporting District after study completion.		SAD		SAD		SAD		SAD

Table References:

(1). Engineer Regulation 5-1-9, Assignment and Transfer of Project Responsibilities, 15 March 1996 (establishes project brokering policy, guidance, and procedures for all projects assigned to USACE).
(2). Director's Policy Memorandum Civil Works (DPM CW 2018-05, Subject: Improving Efficiency and Effectiveness in USACE Civil Works Project Delivery (Planning Phase and Planning Activities.

Table Notes:

(1). SAD SES Management oversight responsibility has been reassigned from NAD to SAD. As such SAD SESer gain decision making responsibility and is in the decision chain. Clarification of MSC responsibilities are provided via following notes.
(2). NAO/NAD keeps SAD-SES informed via regular scheduled briefings (Milestone Meetings/EROCs/SAD-PRBs/bi-weekly notes, in-progress review meetings, etc.).
(3). SAD will be engaged via a designated SAD Review Liaison who will be engaged in policy review team discussions and issue resolution, though will not be a member of the HQ study assigned policy and legal review team.
(4). SAJ will assigned a Project Manager Liaison for each study to be engaged and participate in study team meetings, all meetings with the non-Federal sponsor or representatives, public meetings, resource agency meetings and stakeholder meetings.
(5) SAJ is the lead with NOA providing any needed support.

2. The Points of Contact for this Amendment are:

   a. Eric P. Summa, Chief, Planning and Policy Division, SAD

   b. Jacqueline J. Keiser, Chief, Hurricane Emergency Restoration Division, SAD

c. Joseph R. Vietri, Chief, Planning and Policy Division, NAD.

d. Roselle H. Stern, Senior Coastal and Watershed Planner, NAD

3. All other terms of this MOA remain unchanged.

4. This Amendment Number 1 to the MOA takes effect upon the date it is signed by both Parties.

SOUTH ATLANTIC DIVISION	NORTH ATLANTIC DIVISION
	LLOYD.JOHN.PHILLIP.1021070595 Digitally signed by LLOYD.JOHN.PHILLIP.10210705 95 Date: 2022.12.23 13:06:48 -05'00'
DANIEL H. HIBNER Brigadier General, USA Commanding	JOHN P. LLOYD Colonel, USA Commanding
DATE: 30 November 2022	DATE: 23 December 2022