

# Readers Guide

## New York-New Jersey Harbor and Tributaries Coastal Storm Risk Management Feasibility Study Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement

The New York-New Jersey Harbor and Tributaries Coastal Storm Risk Management Feasibility Study Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement, its appendices, and supporting documentation summarize the study planning process, technical analyses, and alternative plans including the Tentatively Selected Plan. This guide gives readers an overview of report contents and supplemental web-based resources.

### What's in the Main Report?

**Executive Summary.** The Executive Summary presents a summary of the Main Report, including key concepts, analyses, and recommendations.

**Pertinent Data.** The Pertinent Data summary presents key technical details of the Tentatively Selected Plan.

- **Chapter 1: Introduction.** This chapter provides an overview of the study scope, authority, purpose, and need. Additionally, it provides information about the public and agency engagement process, including ways in which the public can submit comments during the report's public review period.
- **Chapter 2: Existing Conditions.** This chapter presents a summary of existing conditions in the Study Area. It is organized by four types of resources: 1) Natural Environment, 2) Physical Environment, 3) Built Environment (Infrastructure), and 4) Human Environment (Demographics and Socioeconomics). It describes resources within each Planning Region.
- **Chapter 3: Future Without-Project Conditions.** This chapter presents a summary of future conditions in the Study Area in the absence of a proposed project. It includes a description of major assumptions and trends that created the baseline to which alternative plans were compared.
- **Chapter 4: Planning Process.** This chapter summarizes the planning process used to develop alternative plans and ultimately identify a Tentatively Selected Plan. It presents the logic and analysis used in plan formulation, evaluation, comparison, and selection.
- **Chapter 5: Tentatively Selected Plan.** This chapter describes the Tentatively Selected Plan, which is the proposed project subject to refinement and Congressional authorization. It includes technical details, costs, benefits, risks, and uncertainties.
- **Chapter 6: Effects and Consequences of the Alternative Plans.** This chapter presents a summary of projected future conditions in the Study Area under each alternative plan. It is organized similarly to Chapter 2.
- **Chapter 7: Environmental Compliance.** This chapter summarizes consistency and compatibility with federal and state environmental compliance laws and guidance.
- **Chapter 8: Public Coordination and Views.** This chapter presents a summary of public coordination activities and viewpoints. The final report will include a summary of comments received during the public review period for the draft report.

- **Chapter 9: Recommendations.** This chapter summarizes recommendations for the Tentatively Selected Plan and key considerations. It concludes with the official recommendation of the USACE New York District Commander.
- **Chapter 10: List of Preparers.** This chapter presents a list of report preparers, their titles, and their contributions.
- **Chapter 11: References.** This chapter lists references used for the analyses.

## What's in the Appendices?

Technical appendices present in-depth information about environmental, engineering, economic, real estate, and social analyses. They also include pertinent correspondence submitted by the public and agencies.

**Appendix A: Environmental.** This appendix includes the environmental analyses and data collected to evaluate the environmental effects of the alternative plans. Several sub-appendices are utilized in the coordination and consultation with regulatory resource agencies.

- **Sub-appendix A1: Endangered Species Act (USFWS).** This sub-appendix serves as a Tier 1 Biological Assessment to evaluate the potential impacts of the Tentatively Selected Plan to United States Fish and Wildlife Service (USFWS) threatened and endangered species protected under the Endangered Species Act.
- **Sub-appendix A2: Endangered Species Act (NOAA).** This sub-appendix serves as a Tier 1 Biological Assessment to evaluate the potential impacts of the Tentatively Selected Plan to National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries (NMFS) threatened and endangered species protected under the Endangered Species Act.
- **Sub-appendix A3: Essential Fish Habitat.** This sub-appendix serves as a Tier 1 Assessment to evaluate the potential impacts of the Tentatively Selected Plan to NOAA-NMFS Essential Fish Habitat (EFH) and EFH-designated species under the Magnuson-Stevens Fishery Conservation and Management Act.
- **Sub-appendix A4: Coastal Zone Management Act.** This sub-appendix evaluates the Tentatively Selected Plan's consistency with federal and state Coastal Zone Management Act policies.
- **Sub-appendix A5: Clean Water Act.** This sub-appendix serves as a Tier 1 Clean Water Act 404(b)1 evaluation to ensure the Tentatively Selected Plan will not cause or contribute to significant degradation of the waters of the United States.
- **Sub-appendix A6: Clean Air Act and Greenhouse Gas.** This sub-appendix includes evaluations of the anticipated regulated air emissions under the Clean Air Act and the anticipated greenhouse gas emissions of the Tentatively Selected Plan.
- **Sub-appendix A7: Coastal Barrier Resource Act.** This sub-appendix includes an assessment of the potential impacts associated with alternative plans to the Coastal Barrier Resources Act System Units and Otherwise Protected Areas.
- **Sub-appendix A8: Cultural Resources.** This sub-appendix includes a Tier 1-level review of documented cultural resources in Study Area and a preliminary assessment of the potential for direct and indirect (i.e., visual) effects of each alternative on cultural resources.

- **Sub-appendix A9: Hazardous, Toxic, and Radioactive Waste.** This sub-appendix includes an assessment of the potential impacts associated with the alternative plans' proximity to Hazardous, Toxic, and Radioactive Waste Sites.
- **Sub-appendix A10: Conceptual Mitigation Plan.** This sub-appendix includes the conceptual compensatory mitigation plan for potential impacts of the Tentatively Selected Plan.
- **Sub-appendix A11: New York Bight Ecological Model.** The New York Bight Ecological Model (NYBEM) is a suite of numerical models developed for the study to better understand potential effects on regional aquatic ecosystems and inform decision making. This sub-appendix provides an overview of the NYBEM approach and tools, presents model application to the study, summarizes the existing condition of regional ecosystems, presents an alternatives analysis of direct and indirect effects based on model results, and summarizes potential effects of the Tentatively Selected Plan by Planning Region.
- **Sub-appendix A12: Other Social Effects and Environmental Justice.** This sub-appendix describes the methodology utilized for the comprehensive Tier 1 Other Social Effects and Environmental Justice analysis of the alternative plans.

**Appendix B: Engineering.** This appendix presents the engineering and conceptual design work conducted to evaluate and layout considered structural and nonstructural measures. It presents a summary of the design development process for Shore-Based Measures and Storm Surge barriers that are included in the alternative plans.

- **Sub-appendix B1: Shore-Based Measures.** This sub-appendix focuses on Shore-Based Measures.
  - **Annex A: Flood Maps (Future Without-Project and Future With-Project Conditions Conditions).** This annex includes visual flood extent maps that were created for the 1% flood condition, including relative sea level change. It includes flood extent maps for each alternative plan.
  - **Annex B: Induced Flooding Analysis and Induced Flooding Maps.** This annex presents information about induced flooding, which is an increase in flood levels as a result of a proposed project. It includes Advanced Circulation Model simulations to investigate still water levels with alternative plans in place.
  - **Annex C: Wave Height Analyses.** This annex outlines the results of a wave analysis to determine the required functional freeboard that would be needed for Shore-Based Measures.
  - **Annex D: Map Sets for SBMs, IFFs, and RRFs for Alternatives.** This annex includes map sets that were created for Shore-Based Measures (SBM), Induced Flooding-Mitigation Features (IFF), and Risk Reduction Features (RRF) alignments included in alternative plans.
  - **Annex E: Miles (and count) of measures per reach Alternatives.** This annex includes an inventory of the predicted total lengths and counts of each different type of Shore-Based Measures, Induced Flooding-Mitigation Features, and Risk Reduction Features for alternative plans.
  - **Annex F: Shore-Based Measures and Risk Reduction Feature Quantity Take-offs .** This annex outlines the predicted measure quantities for Shore-Based Measures and Induced Flooding-Mitigation Features.
- **Sub-appendix B2: Storm Surge Barriers.** This sub-appendix includes the conceptual design for Storm Surge Barriers for alternative plans, with emphasis on a conceptual design of three reference Storm Surge Barriers at the Verrazzano Narrows, Jamaica Bay, and Hackensack River.

- **Annex A: Navigation Analysis, Minimum Gate Width, and Gate Type Selection.** This annex includes the maritime traffic analyses and recommendations for design vessels for Storm Surge Barriers with navigable passages. Also included are conceptual design assessments for the minimum required dimensions for navigable passageways and auxiliary flow gates.
- **Annex B: Crest Elevations.** This annex summarizes a “step-wise” methodology used to establish the probability and uncertainty-based characterization of flood hazard from Storm Surge Barriers, by wave characteristics and overtopping of coastal structures.
- **Annex C: Water Level Rise on the Interior.** This annex includes an analysis of a select set of Storm Surge Barriers and the areas behind them, referred to as basins, to predict the conditions and processes that could be encountered at the barriers are closed.
- **Annex D: Closure Frequency and Closure Duration.** This annex outlines the closure frequency and duration analysis results, as performed to evaluate the time-related parameters for the Storm Surge Barrier gates to inform the choice of criterion and the expected duration of required closure and re-opening limitations.
- **Annex E: Storm Surge Barrier Closure Orchestration.** This annex summaries a sequence of expected decision points and actions that would need to be performed in a timely manner to properly identify and respond to approaching storm surge threats.
- **Annex F: Supporting Map for Storm Surge Barrier Structures.** This annex includes supporting maps that show the logistics of the proposed Storm Surge Barriers and navigable gates.
- **Annex G: Plan Set: Verrazzano-Narrows Storm Surge Barrier.** This annex includes several maps, design graphics, and models highlighting the logistical plan to include a Storm Surge Barrier at the Verrazzano Narrows.
- **Annex H: Plan Set: Hackensack River Storm Surge Barrier.** This annex includes several maps, design graphics, and models highlighting the logistical plan to include a Storm Surge Barrier at the Hackensack River.
- **Annex I: Navigation Stakeholder Review and Input.** This annex summarizes the outcome of navigation stakeholder engagement related to potential Storm Surge Barriers.
- **Sub-appendix B3: Tentatively Selected Plan Set.** This sub-appendix includes a technical drawing plan set to document the Tentatively Selected Plan.
- **Sub-appendix B4: Interior Drainage.** This sub-appendix presents the assessment of interior drainage facility requirements and costs for Shore-Based Measures and Storm Surge Barriers.
- **Sub-appendix B5: Nonstructural Measures and Ringwalls.** This sub-appendix provides an overview how nonstructural measures and ringwalls are being considered. It includes the results of an economic screening of nonstructural measures inclusion into alternative plans.
- **Sub-appendix B6: ADCIRC Model Report.** This sub-appendix includes Advanced Circulation Model storm surge and wave modeling that was performed by the U.S. Army Engineer Research and Development Center Coastal and Hydraulics Laboratory to evaluate alternative plans.
- **Sub-appendix B7: AdH Model Report.** This sub-appendix includes Adaptive Hydraulics Model hydrodynamic and salinity modeling that was performed by the U.S. Army Engineer Research and Development Center Coastal and Hydraulics Laboratory to evaluate alternative plans.

**Appendix C: Cost Engineering.** This appendix presents a summary of cost estimates and construction durations for each alternative plan.

**Appendix D: Economics.** This appendix presents a preliminary analysis and the economic benefits for each alternative plan.

**Appendix E: Map Series.** This appendix includes a series of detailed maps for each alternative plan. The maps include more detail than the figures found in the Main Report.

**Appendix F: Real Estate.** This appendix includes information about real estate requirements and costs for the Tentatively Selected Plan.

**Appendix G: Public and Agency Coordination.** This appendix includes letters, comments, and other correspondence received from the public and agencies.

**Appendix H: Stakeholder List.** This appendix includes a list of interested parties who were notified of draft report availability.

## Web-based Resources

**Study Website.** All resources listed in this guide can be found on the study website. The study website is located on the USACE New York District website at <https://www.nan.usace.army.mil/NYNJHATS>. The website also includes Frequently Asked Questions, fact sheets, status updates, briefing materials, and other content.

**StoryMaps.** ArcGIS StoryMaps is a web-based application that includes maps in the context of narrative text and other multimedia content. A StoryMap Hub provides an interactive experience for readers who may want to explore maps, photos, videos, and other web-based content. The StoryMap Hub can be accessed from the study website at <https://www.nan.usace.army.mil/NYNJHATS>

The StoryMap Hub includes helpful information, including:

- Interactive maps, where users may “zoom in” to alternative plan details and search addresses
- Animations of engineering model outputs and proposed features
- Renderings of proposed features
- A glossary of terms

USACE New York District **social media accounts** provide status updates and information about public meetings. Links to social media accounts including Twitter and Facebook can be found at the following:

- <https://www.nan.usace.army.mil>
- [https://twitter.com/USACE\\_NY](https://twitter.com/USACE_NY)
- <https://www.facebook.com/USACE.NewYorkDistrict>

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