

NEW YORK-NEW JERSEY HARBOR AND TRIBUTARIES COASTAL STORM RISK MANAGEMENT STUDY

US Army Corps of Engineers
New York District



US Army Corps
of Engineers®





THANK YOU FOR PARTICIPATING!



Public feedback is an important part of the study process.

The Study Team appreciates your time today.

MEETING PURPOSE

1. Provide information about the New York-New Jersey Harbor and Tributaries Study
2. Provide information about the Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement
3. Provide an overview of the Tentatively Selected Plan
4. Hear your questions and feedback about the information shared today



AGENDA

1. Study Background
2. Planning Process
 - Important Considerations
 - Evaluated Alternative Plans
 - Plan Selection
3. Overview of the Tentatively Selected Plan
4. Providing Feedback
5. Q&A Session



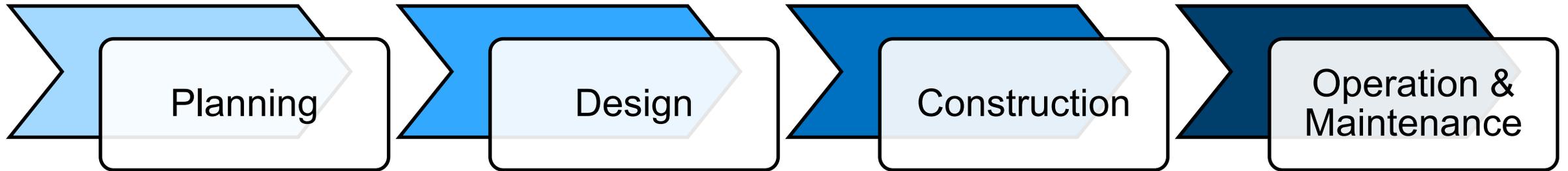
Residents of Little Ferry, NJ evacuated through Hurricane Sandy floodwaters (2012)



FOUR IMPORTANT THINGS TO NOTE



1. The plan you will hear about today is **preliminary** and **conceptual**
 - Details are subject to change based on new information and your feedback
 - A project has not yet been approved or funded by the U.S. Congress, States of New Jersey and New York, or local government
 - There is no impending construction or permitting for a project



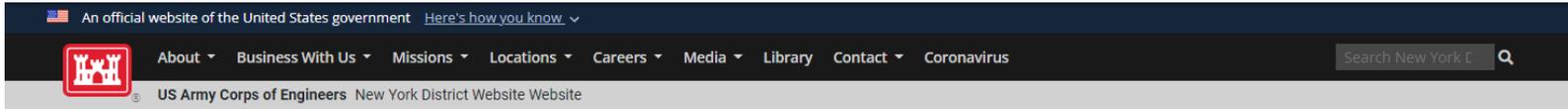
2. The information in this presentation is a summary of what you can find in the Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement
 - National Environmental Policy Act document
 - Found at <https://www.nan.usace.army.mil/NYNJHATS>



DRAFT REPORT



Found at <https://www.nan.usace.army.mil/NYNJHATS>



Home / Missions / Civil Works / Projects in New York / NY & NJ HATS

Draft Report September 2022

The Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement is available for public review. The report summarizes the study planning process, technical analyses, and alternative plans - including the Tentatively Selected Plan.

The [NYNJHAT Study StoryMap](#) is an interactive platform with interactive web-based content, including interactive maps, animations, renderings, and summaries.

[Readers Guide](#)

[Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement](#)

Appendix A: Environmental

- Sub-appendix A1: Endangered Species Act (USFWS)
- Sub-appendix A2: Endangered Species Act (NOAA)
- Sub-appendix A3: Essential Fish Habitat
- Sub-appendix A4: Coastal Zone Management Act
- Sub-appendix A5: Clean Water Act
- Sub-appendix A6: Clean Air Act and Greenhouse

NY & NJ Harbor & Tributaries Focus Area Feasibility Study (HATS)



Coastal storms have severely impacted the North Atlantic Coast of the United States, including the New York-New Jersey Harbor region. In response to these storms, the US Army Corps of Engineers (Corps) is investigating measures to manage future flood risk in ways that support the long-term resilience and sustainability of the coastal ecosystem and surrounding communities, and reduce the economic costs and risks associated with flood and storm events. In support of this goal, the Corps completed the North Atlantic Coast Comprehensive Study, which identified nine high-risk, focus areas on the north Atlantic Coast for further in-depth analysis into potential coastal storm risk management measures. One of the nine areas identified was the New York-New Jersey Harbor and Tributaries study area.

Upcoming Public Meetings

DATE: Wednesday, January 11th, 2023.

TIME: 2-4 PM and 6-8 PM (duplicate sessions).

LOCATION: New Jersey Institute of Technology (NJIT), Campus Center, 150 Bleeker St., Newark, NJ 07103. Sessions are in the 1st-floor Atrium.

MORE INFO: Click [here](#) to view the flyer.

TRANSLATED FLYERS: [Arabic](#) | [Chinese](#) | [Hindi](#) | [Portuguese](#) | [Spanish](#)

DATE: Tuesday, January 17th, 2023.

TIME: 2-4 PM and 6-8 PM (duplicate sessions).

LOCATION: Community Board 18, 1097 Bergen Avenue, Brooklyn, NY, 11234. Sessions will be held in the community meeting room.

MORE INFO: On-site parking is available. Mass transit access: see <https://new.mta.info/> Bus routes B47/B82/B6 have nearby stops. Closest bus stop is B47 route, Ralph Avenue/Avenue J stop. Click [here](#) to view the flyer.



Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement

NEW YORK-NEW JERSEY HARBOR AND TRIBUTARIES COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

September 2022

NEW YORK STATE Department of Environmental Conservation

NEW YORK CITY Department of State NYC Mayor's Office of Climate & Environmental Justice



READERS GUIDE



Provides an overview of:

- Main report chapter contents
- Appendices and sub-appendices
- Web-based tools

Main Report

- Chapter 1: Introduction
- Chapter 2: Existing Conditions
- Chapter 3: Future Without Project Conditions
- Chapter 4: Plan Formulation
- Chapter 5: Tentatively Selected Plan
- Chapter 6: Effects and Consequences of the Alternative Plans
- Chapter 7: Environmental Compliance
- Chapter 8: Public Coordination and Views
- Chapter 9: Recommendations
- Chapter 10: List of Preparers
- Chapter 11: References

- Appendix A: Environmental
- Appendix B: Engineering
- Appendix C: Cost Engineering
- Appendix D: Economics
- Appendix E: Map Series
- Appendix F: Real Estate
- Appendix G: Public/Agency Coordination
- Appendix H: Stakeholder List

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.



STORYMAP HUB

ArcGIS StoryMaps is a web-based interactive application that includes maps in the context of narrative text and other multimedia content

<https://hats-cenan.hub.arcgis.com/>



New York-New Jersey Harbor and Tributaries Coastal Storm Risk Management Feasibility Study

NYNJHAT Study Story Map Homepage

This Hub and story maps are visual representations of the 2022 Draft New York-New Jersey Harbor and Tributaries Coastal Storm Risk Management Feasibility Study. Our Story Map emphasizes the Tentatively Selected Plan (Alternative 3B). Please visit the U.S. Army Corps of Engineers [Study Website](#) where you'll be able to download the entire Draft Report (PDF format).

This Hub and associated Story Maps will be updated throughout the planning process.

Upcoming Public Meetings: Thursday October 27th (1800-2000) & Saturday November 5th (1000-1200)

See the [Study Website](#) for more details on the Public Meetings

LATEST UPDATE: October 21st 2022

For better viewing experience, please use Google Chrome or Mozilla Firefox browsers. Also, please use a PC to interact with the story maps.

GET STARTED with the [Glossary of Terms Story Map](#) which explains the different types of features and other terms used on this site and in the Study. Then watch the [YouTube video](#) below which explains the features of this Hub and all the Story Maps associated with it. From there you can explore wherever you want including the [Gallery of Resources and Tools!](#)

GIS Story Map technology visualizes the concepts presented in the draft integrated feasibility report and Tier 1 Environmental Impact Statement by allowing you to:

- See how the proposed project could reduce flooding
- Learn how the alternative plans were identified and evaluated and why the alternatives were generated
- Learn about potential environmental impacts and benefits

INTERACTIVE MAP

Use the map to the right to explore

Find address or place

-- Quick Links --

Story Maps:



WHAT'S ON THE HUB?



Interactive Maps

- Alternative plans
- Future with and without project flooding
- Compare alternatives
- Real estate easements
- Environmental and cultural
- Environmental justice

Engineering

Future With Project (FWP) Condition

Swipe through the map to see what future conditions are anticipated to exist should there be no outcome as a result of this study.

The map on the **left** shows what areas will be at risk of coastal flooding for the next 100 years if the HATS project does not take place, based on our most recent analysis. The map on the **right** shows the 100-year flood extent that will result from the actions outlined in Alternative 3b, the TSP for this project (features highlighted in pink).

Powered by Esri

Engineering

Storm Surge Barriers (SSB)

SSBs are in-water structures with an opening (or openings) to allow for the passage of flow and vessels during normal day-to-day conditions. These openings are gated and can be closed such that the structure effectively impedes the storm surge and provide flood risk reduction for the region upstream of the barrier.

Shore-Based Measures (SBM)

SBMs are land based CSRM structures such as floodwalls, levees, beach/dunes, elevated promenades, etc. They are designed to provide flood risk reduction for 100-year Return Period (RP) storm events (1% Annual Exceedance).

Concept for the Verrazano Storm Surge Barrier - Artist Photo Visualization

- “Plain language” summaries
 - Renderings
 - ADCIRC animations
- ... and a lot more!



FOUR IMPORTANT THINGS TO NOTE



3. Your feedback is important

- The Study Team is here today to answer your questions and hear your feedback
- **Send all written comments for the record via email or mail**
- The public comment period closes March 7, 2023

4. This is one of a series of public meetings

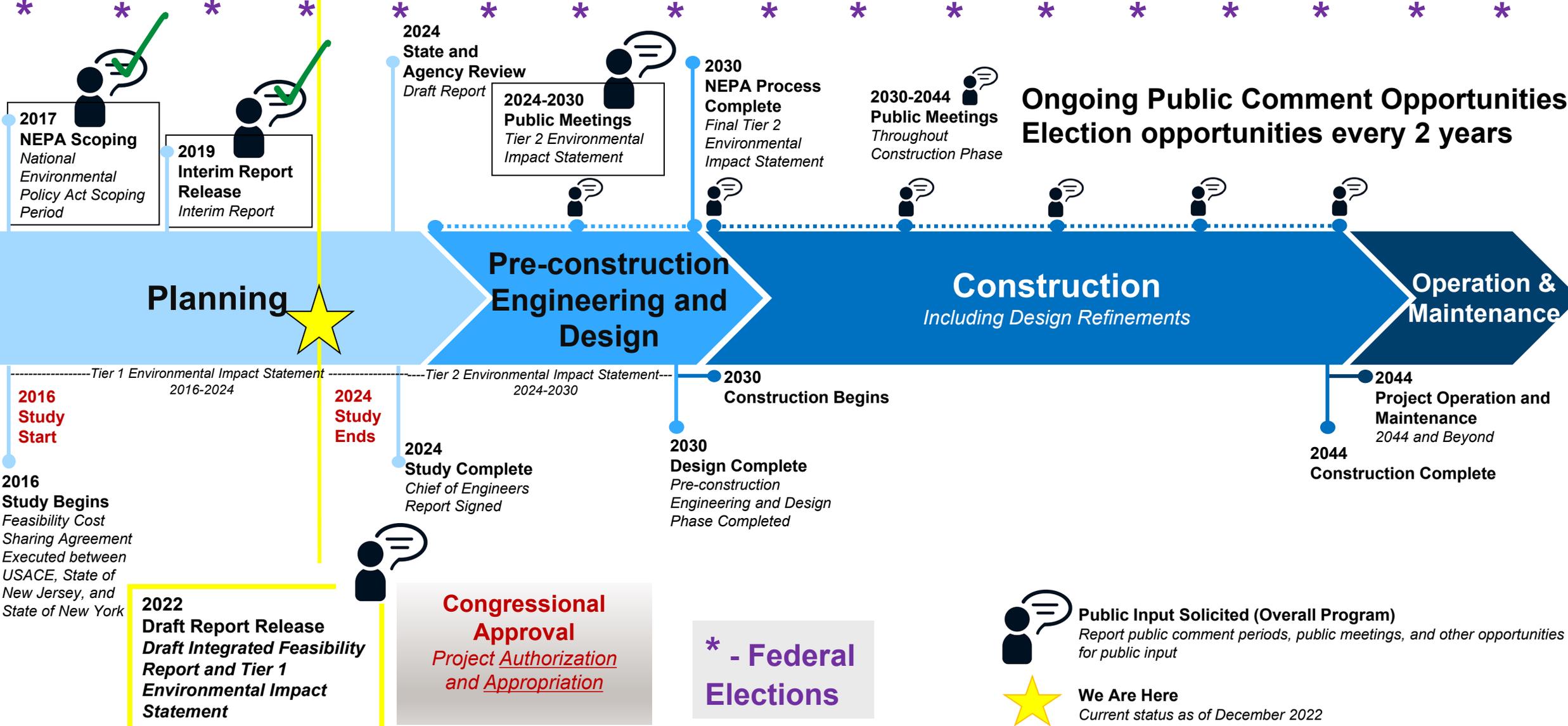
- There will be upcoming in-person and additional virtual public meetings
- Meeting information will be posted to the study website and shared via email



PUBLIC INVOLVEMENT OPPORTUNITIES



2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048





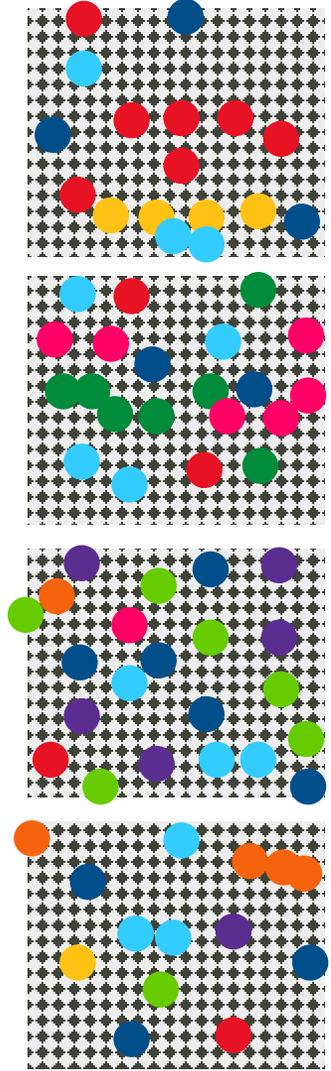
PROCESSING PUBLIC INVOLVEMENT



Step 1:

Look for common ideas/concerns.

Results from Public Comment Periods



Step 2:

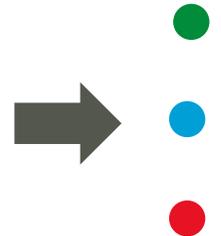
Common ideas/concerns that are feasible to execute or mitigate.

An idea/concern that is **FEASIBLE** to execute and/or mitigate is one that meets **ALL** of the below considerations:

1. Does it **conflict w/** local, state, or federal **policy's or laws?**
2. Is it **with-in our authorization** to solve?
3. Do we have the **technology** to make it happen or mitigate it?
4. Does it create a **problem for someone else?**
5. Is it **cost** prohibitive?
6. Is it **equitable?**
7. Can it happen in a **timely** manner?
8. Is it **flexible** over time for future uncertainties/unknowns?
9. Finally, Are there **additional negative impacts on the Environment, Endangered species, Historical or Cultural sites, the Local Economy, Viewsheds, Traffic Patterns, Community Safety, Industry Support, Hazard waste remediation, Real Estate availability?....and much much more.**

Step 3:

Incorporate the comment into the plan.

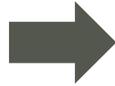




FOLLOW-UP TO PUBLIC TO INVOLVEMENT



Step 3:
Incorporate the
comment into the
plan.



Step 4:
Inform the public
where their ideas
were incorporated



Recommendations are incorporated into the plan already:

1. Extended the public comment period to March 7th
2. Improved Web Design and digital communications
3. Routine engagement with interested/involved non-governmental organizations and local communities to ensure appropriate public comment locations, access, and languages
4. Routine engagement with interested/involved non-governmental organizations and local communities regarding delivery of timely information
5. Continued outreach to local leaders seeking common community concerns
6. Develop communications which further community understanding of the process.



NEW YORK-NEW JERSEY HARBOR AND TRIBUTARIES COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY



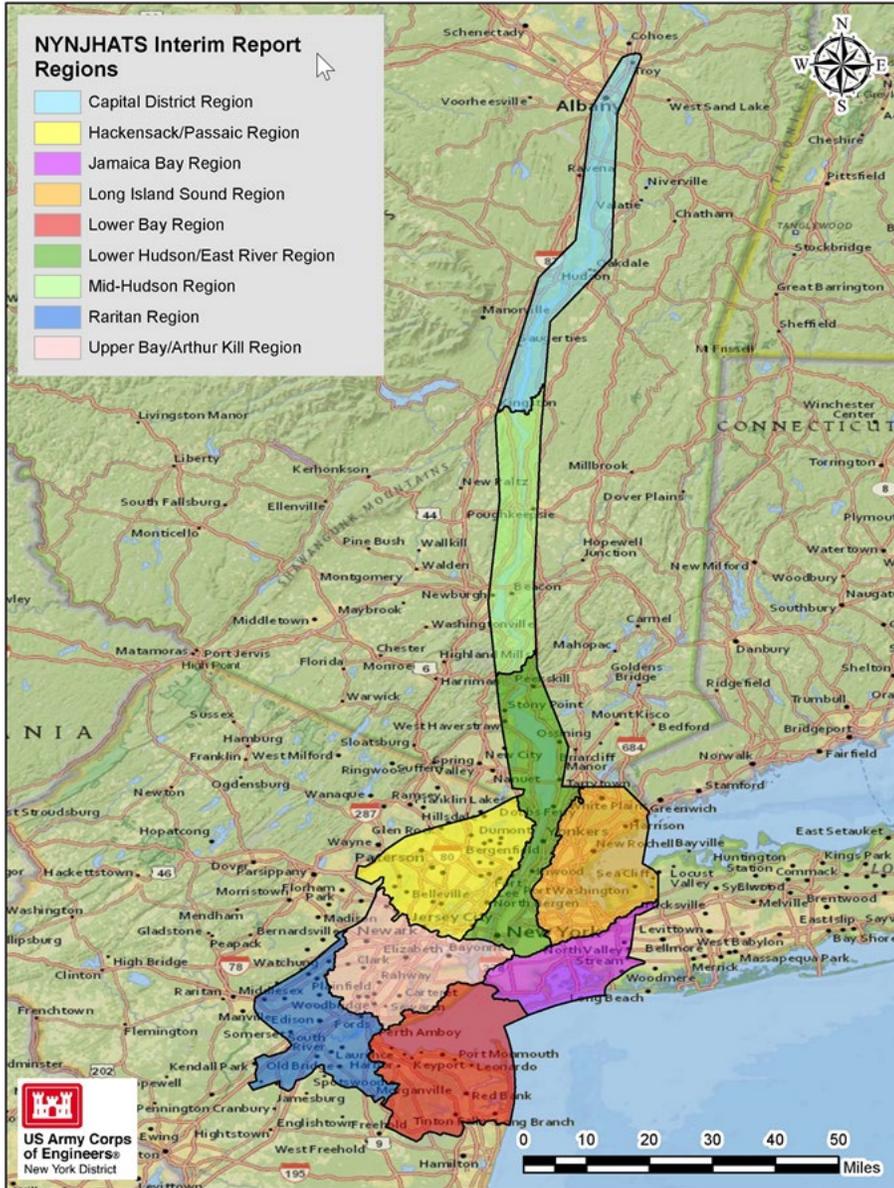
Department of
Environmental
Conservation



NYC Mayor's Office of Climate &
Environmental Justice



Department of
State



STUDY AREA

- The largest and most densely populated of the 9 NACCS Focus Areas
- Area covers 2,150+ square miles and 900+ miles of affected shoreline
- 25 counties in New York & New Jersey
- Affected population of roughly 16 million people, including New York City and the six most populated cities in New Jersey

COASTAL STORM RISKS & DAMAGES

- Significant Life/Safety Risk and over 275,000 Structures in Potential Impact Area
- Incorporates Dozens of Other Ongoing and Planned CSRMS Projects in Study Area
- Present Value Damages for 100-Year Storm Range from \$100+B for Intermediate Sea Level Rise to over \$350B for High Sea Level Rise Projection

STUDY SCOPE

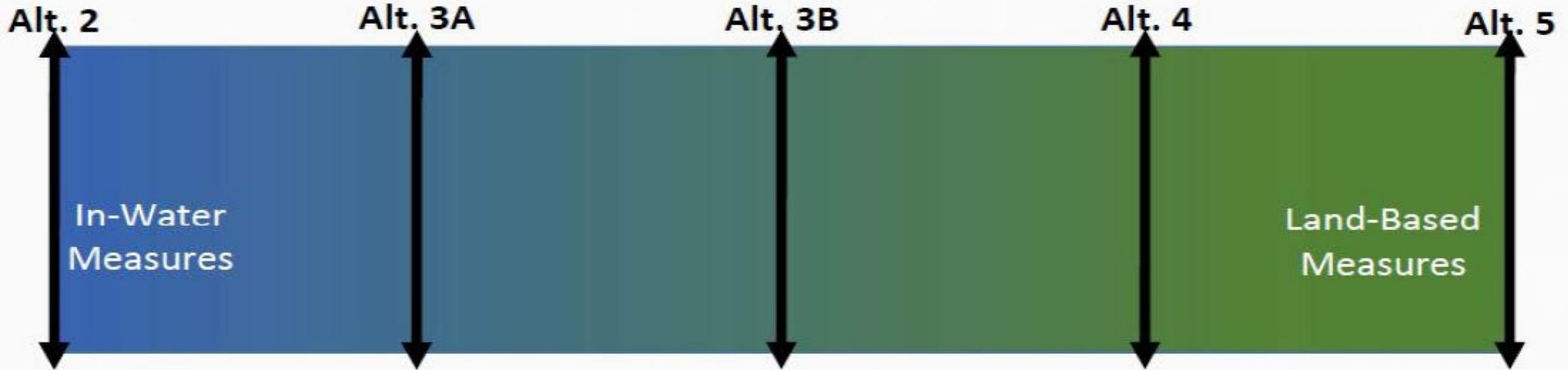
- **Study Cost:** \$19.4M, cost-shared 50/50 with NYSDEC and NJDEP thru July 2022, and 100% federal thereafter.
- **Study Schedule:** Assistant Secretary of the Army for Civil Works Approved (7 Apr 21) Second Exemption for Study Extension to 2024 Completion
- **Funding:** Federal funding (\$1.45M) resumed in October 2021 following lapses in fiscal years 2020 and 2021. Study also received \$6,724,000 of Disaster Relief Suppl. Appros. Act funds.
- **Study Scope:** WRDA 2020 includes study specific language

STUDY SCHEDULE

- Draft Feasibility Report and integrated Tier 1 Environmental Impact Statement Released for extended public day review with meetings planned throughout area. Comment closing date is March 7, 2023.
- See WWW.NAN.USACE.ARMY.MIL/NYNJHATS for Draft Report and dates, times and locations of future public in-person and virtual meetings.
- Final Chief of Engineers Report Approved to be Completed in 2024



ALTERNATIVE PLANS – PROS & CONS WITH EACH



Alternative 1: No action

Alternative 2: Harbor-wide storm surge barrier + shore-based measures

Alternative 3A: Multi-basin storm surge barriers + shore-based measures

Alternative 3B: Multi-basin storm surge barriers + shore-based measures

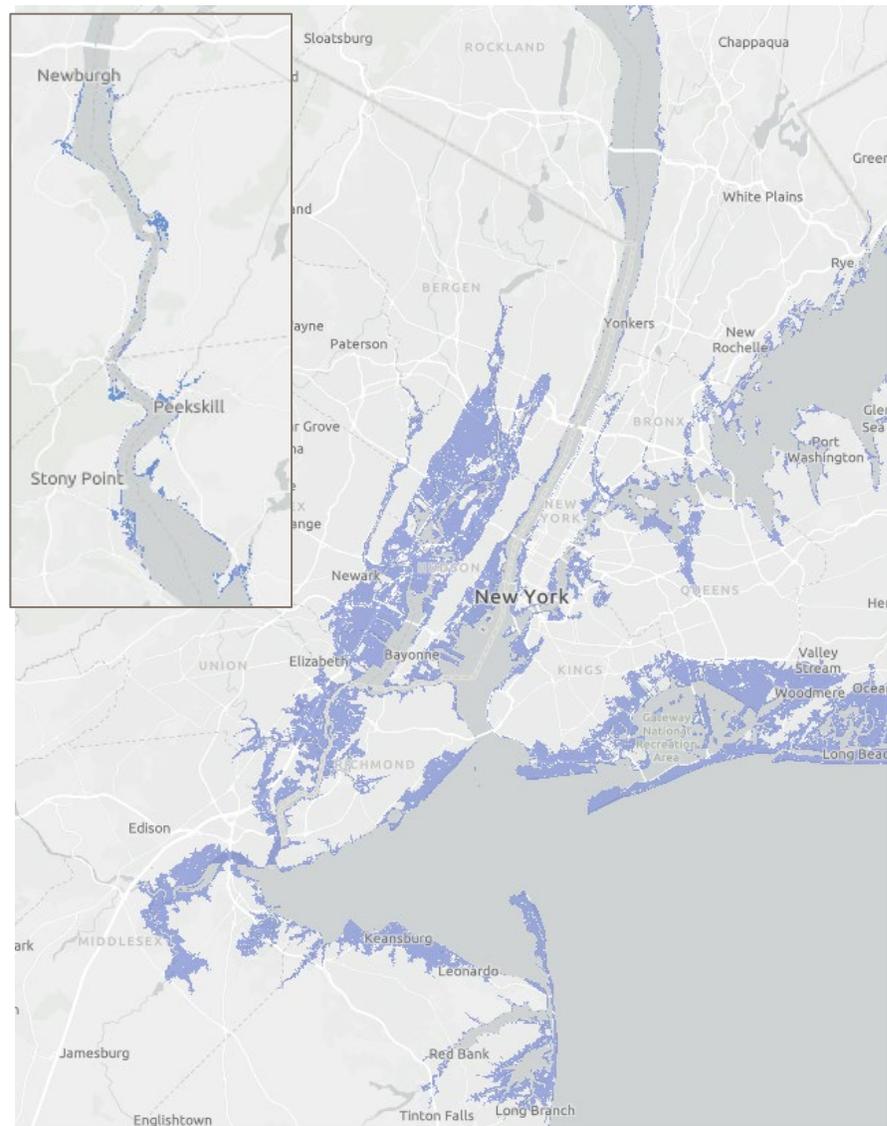
Alternative 4: Single-basin storm surge barriers + shore-based measures

Alternative 5: Shore-based measures only

- Alternatives span spectrum from large in-water storm surge gates to numerous shoreline-based structures. Alternatives also have (or will have) complementary non-structural and natural and nature-based features (where feasible).
- Best Solution Appears to Involve Multiple, Layered Features
- Possible Phased Implementation:
 - 1) Short-term: Construct Actionable Features,
 - 2) Mid-Term: Further Evaluate, Design and possibly Construct Complex Features,
 - 3) Long-Term: Adapt and expand features due to further sea level rise and climate change



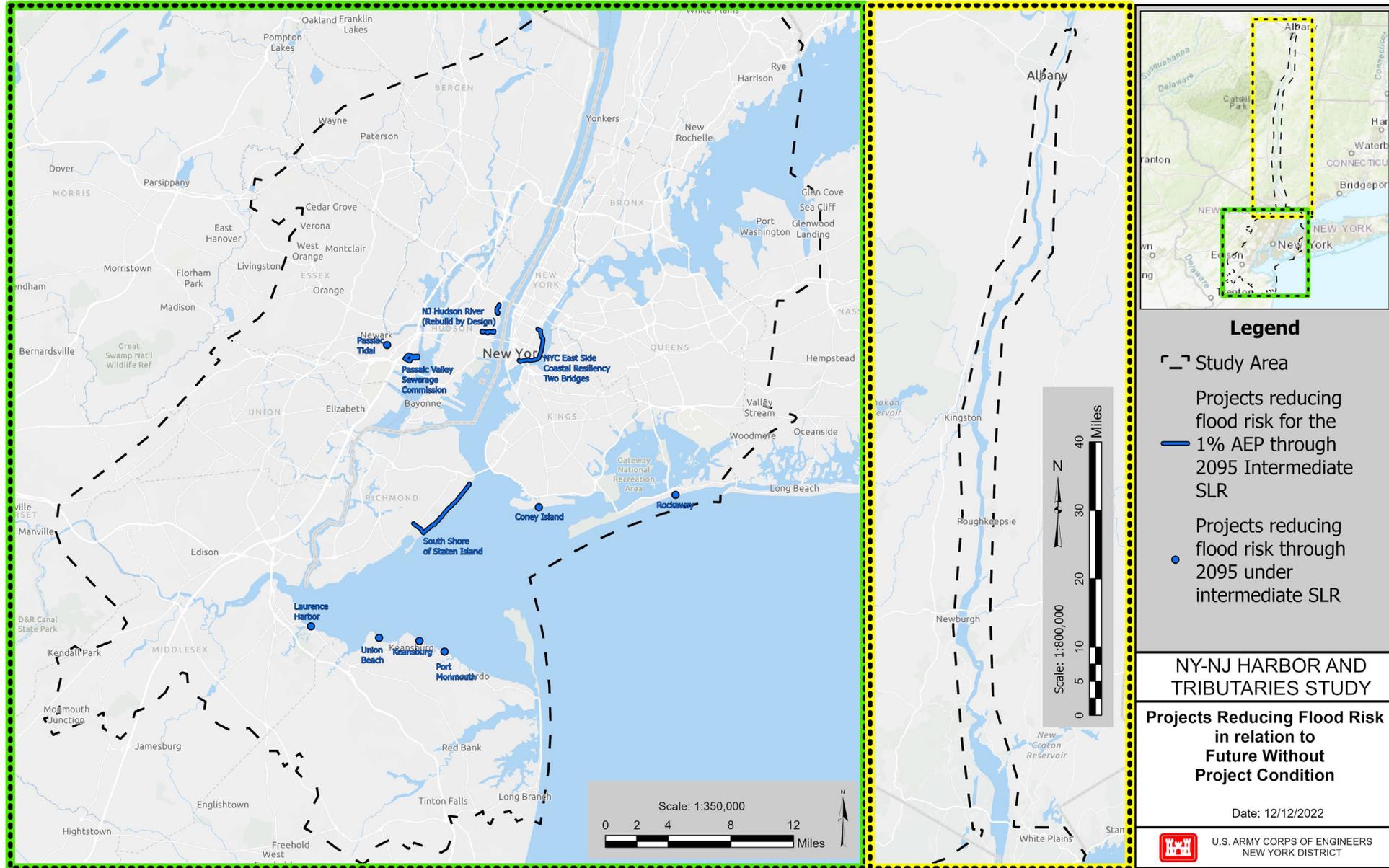
EXISTING & FUTURE CONDITIONS WITHOUT PROJECT



1% flood extent (with intermediate RSLC)

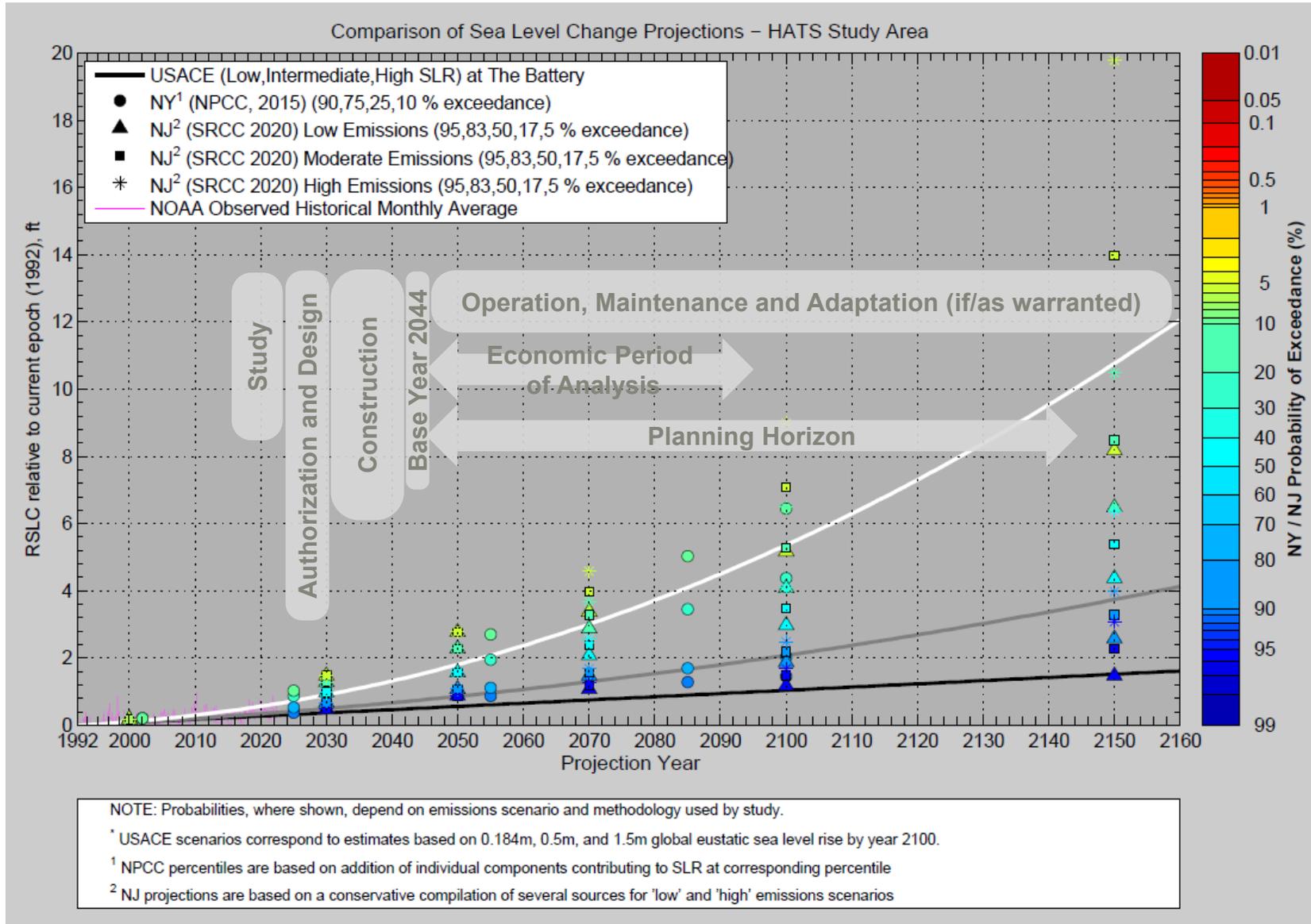


OTHER CONSTRUCTED AND ONGOING PROJECTS (BLUE) ASSUMED AS PART OF FUTURE BASELINE CONDITION





USACE RELATIVE SEA LEVEL CHANGE AT BATTERY COMPARED TO STATES AND CITY PROJECTIONS



ADDITIONAL CONSIDERATIONS WITH STORM-SURGE BARRIERS – RISK REDUCTION FEATURES AND INDUCED FLOODING-MITIGATION FEATURES





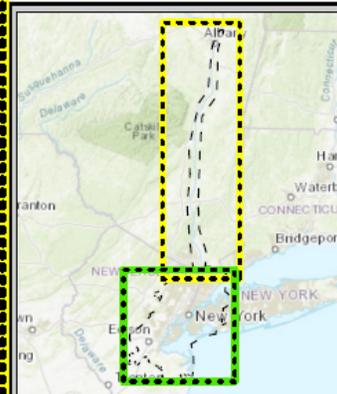
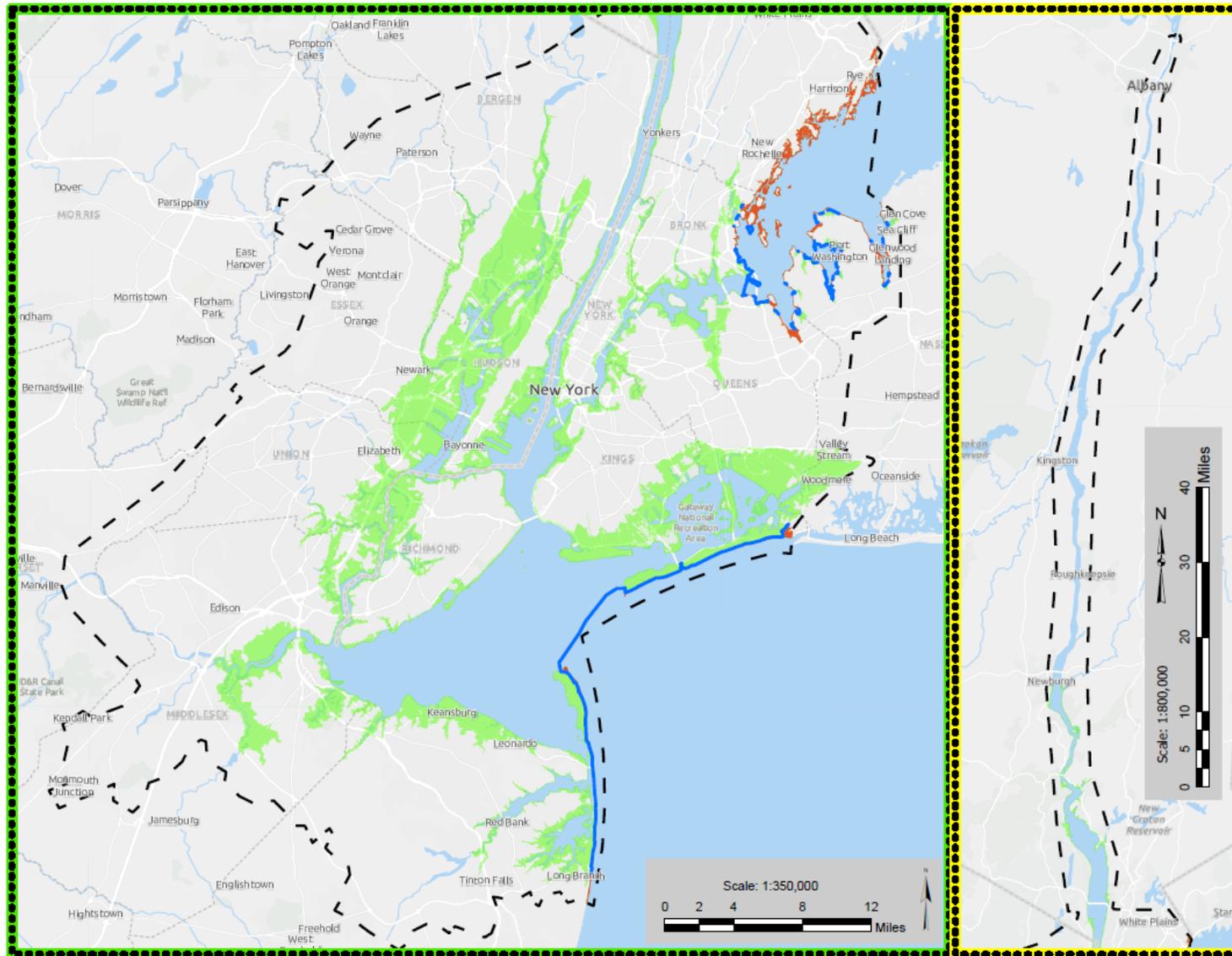
ALTERNATIVE 2



**96.0% Study Area
at Direct Risk Benefited**

Feature Type	Approx. Miles
Storm Surge Barriers	7.4
Shoreline Based Measures	24.2
Induced Flooding-Mitigation Features	22.5
Risk Reduction Features (not shown)	36.2

Alternative	
First Cost (\$B):	\$ 112.3
Total Present Value Cost (\$B):	\$ 150.2
Estimated Construction Duration (years):	32



Legend

- Study Area
- Alternative 2 - CSRM Measures (SSB, SBM, IFF)
- CSRM Reduced Risk with Project Alt2 (area directly benefited)
- Residual Risk with Project Alt2 (area not benefited)

NY-NJ HARBOR AND TRIBUTARIES STUDY

**Alternative 2
Future With Project
Reduced Risk & Residual Risk
(1% AEP with Intermediate
Sea Level Rise in 2095)**
Date: 12/8/2022



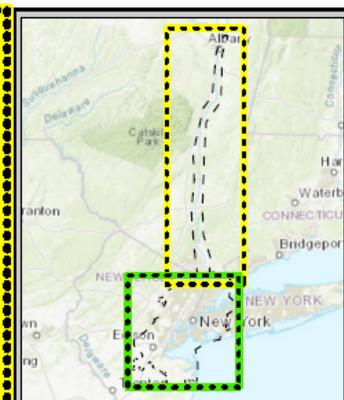
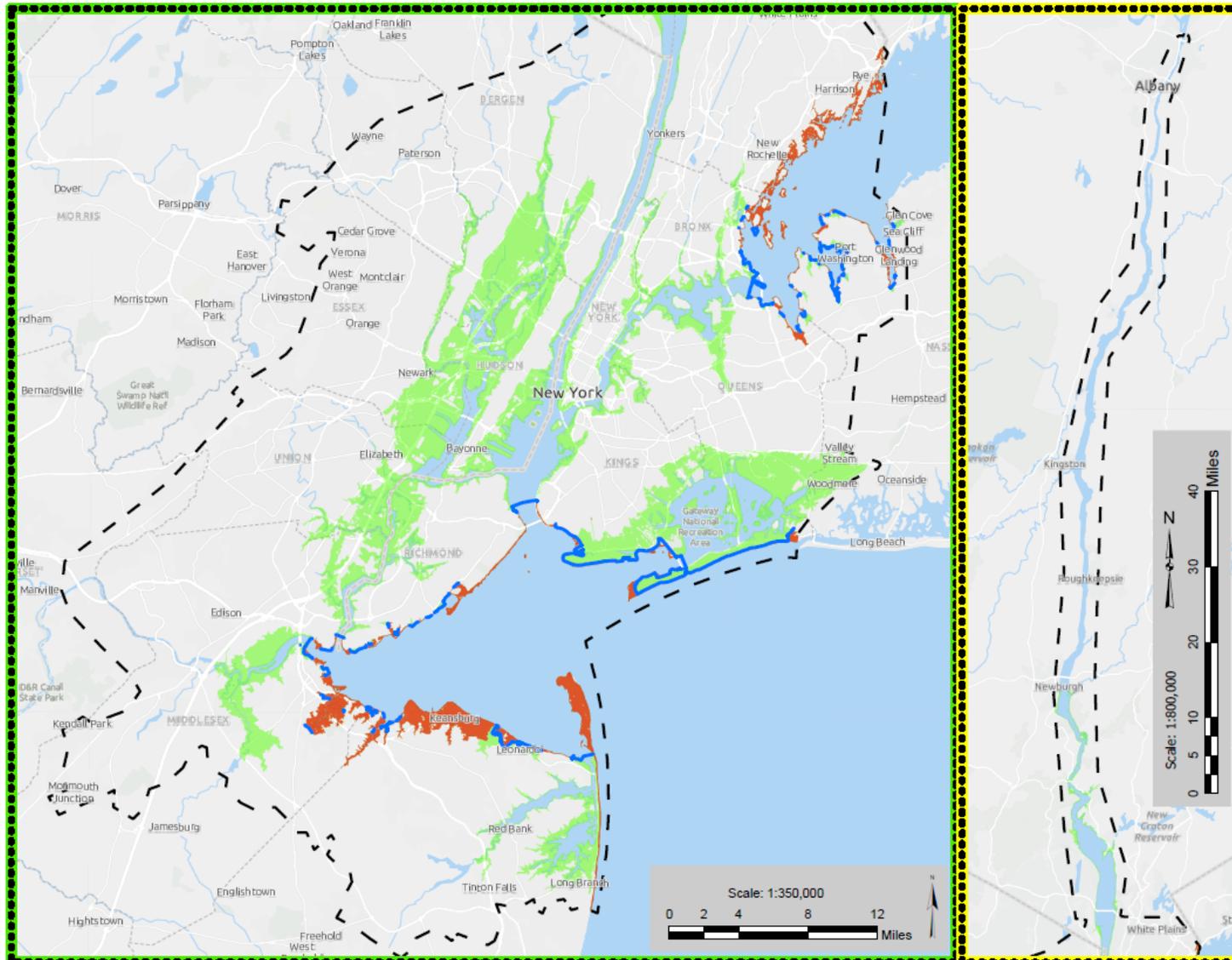
ALTERNATIVE 3A



87.1% Study Area at Direct Risk Benefited

Feature Type	Approx. Miles
Storm Surge Barriers	3.7
Shoreline Based Measures	22.7
Induced Flooding-Mitigation Features	51.5
Risk Reduction Features (not shown)	27.1

Alternative	
First Cost (\$B):	\$ 76.9
Total Present Value Cost (\$B):	\$ 95.7
Estimated Construction Duration (years):	24



Legend

- Study Area
- Alternative 3A - CSRM Measures (SSB, SBM, IFF)
- CSRM Reduced Risk with Project Alt3A (area directly benefited)
- Residual Risk with Project Alt3A (area not benefited)

NY-NJ HARBOR AND TRIBUTARIES STUDY

Alternative 3A
Future With Project
Reduced Risk & Residual Risk
(1% AEP with Intermediate Sea Level Rise in 2095)
 Date: 12/8/2022

U.S. ARMY CORPS OF ENGINEERS
 NEW YORK DISTRICT



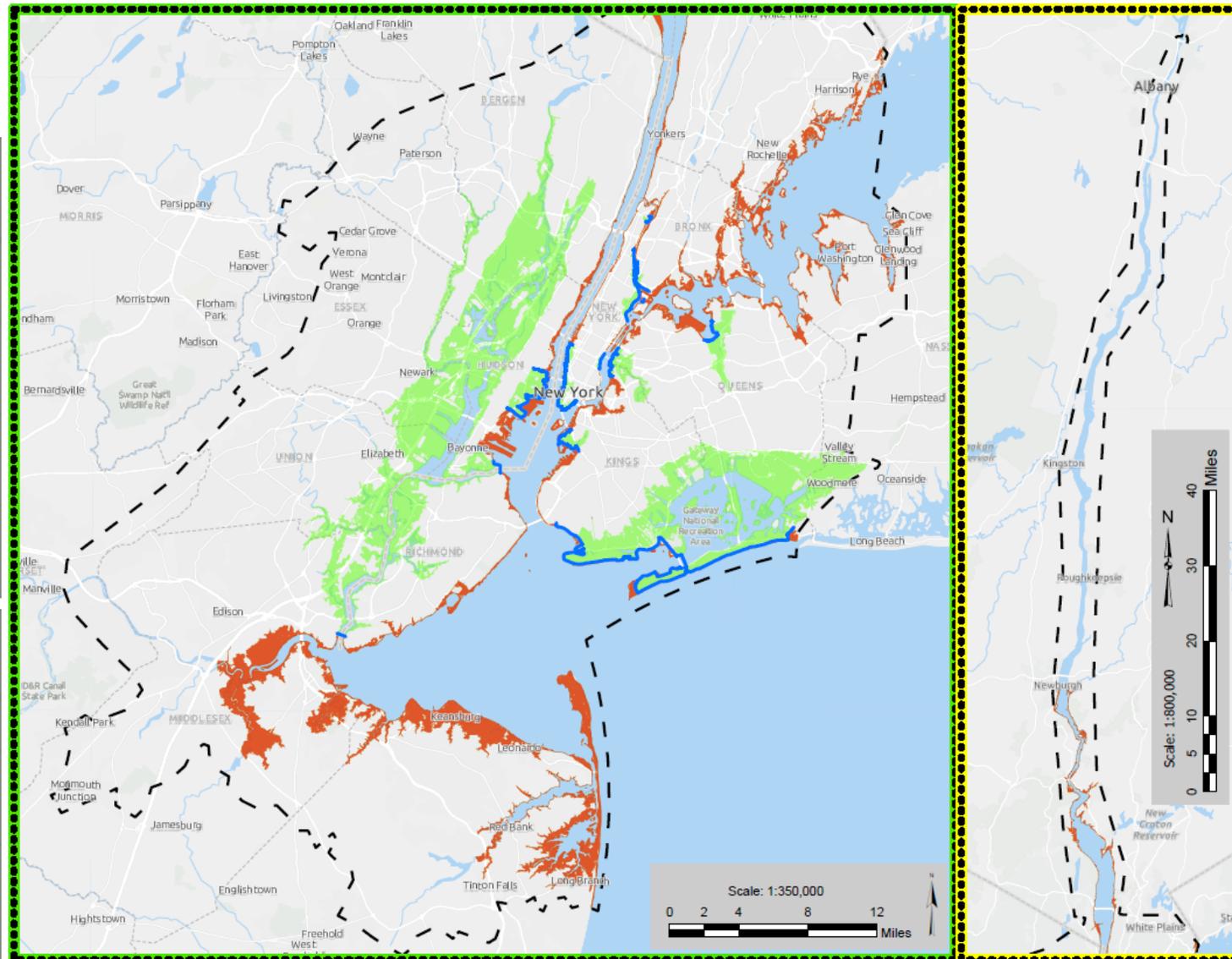
ALTERNATIVE 3B – THE TENTATIVELY SELECTED PLAN



63.0% Study Area at Direct Risk Benefited

Feature Type	Approx. Miles
Storm Surge Barriers	2.2
Shoreline Based Measures	50.6
Induced Flooding-Mitigation Features	11.8
Risk Reduction Features (not shown)	18.7

Alternative	
First Cost (\$B):	\$ 52.7
Total Present Value Cost (\$B):	\$ 76.2
Estimated Construction Duration (years):	14



Legend

- Study Area
- Alternative 3B - CSRM Measures (SSB, SBM, IFF)
- CSRM Reduced Risk with Project Alt3B (area directly benefited)
- Residual Risk with Project Alt3B (area not benefited)

NY-NJ HARBOR AND TRIBUTARIES STUDY

**Alternative 3B
Future With Project
Reduced Risk & Residual Risk
(1% AEP with Intermediate
Sea Level Rise in 2095)**
Date: 12/8/2022



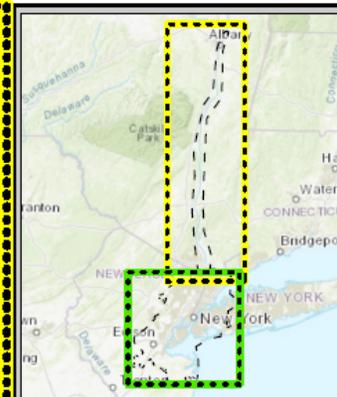
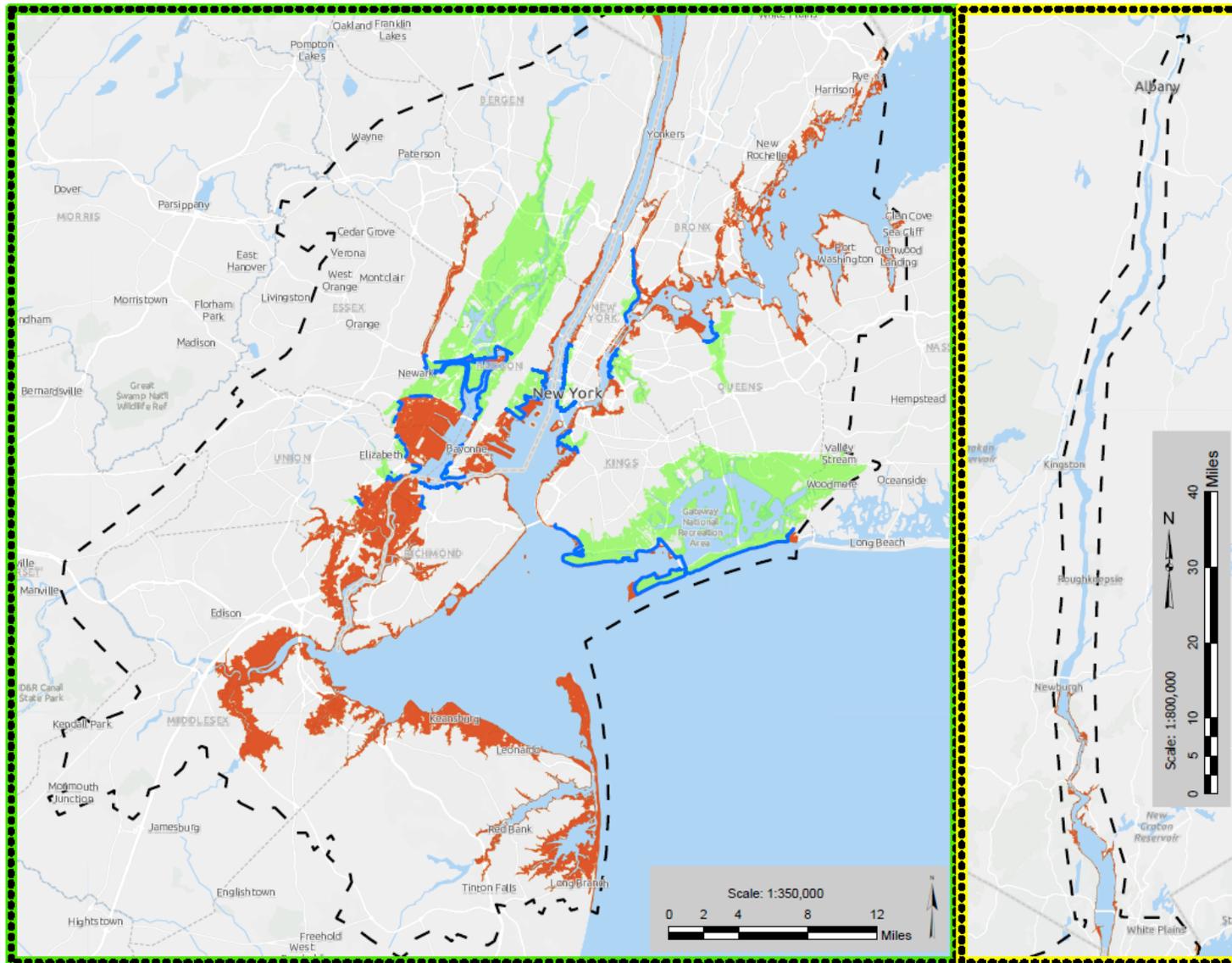
ALTERNATIVE 4



45.9% Study Area at Direct Risk Benefited

Feature Type	Approx. Miles
Storm Surge Barriers	1.4
Shoreline Based Measures	54.7
Induced Flooding-Mitigation Features	41.4
Risk Reduction Features (not shown)	8.5

Alternative	
First Cost (\$B):	\$ 43.0
Total Present Value Cost (\$B):	\$ 62.5
Estimated Construction Duration (years):	14



Legend

- Study Area
- Alternative 4 - CSRM Measures (SSB, SBM, IFF)
- CSRM Reduced Risk with Project Alt4 (area directly benefited)
- Residual Risk with Project Alt4 (area not benefited)

NY-NJ HARBOR AND TRIBUTARIES STUDY

Alternative 4
Future With Project
Reduced Risk & Residual Risk
(1% AEP with Intermediate Sea Level Rise in 2095)
 Date: 12/8/2022



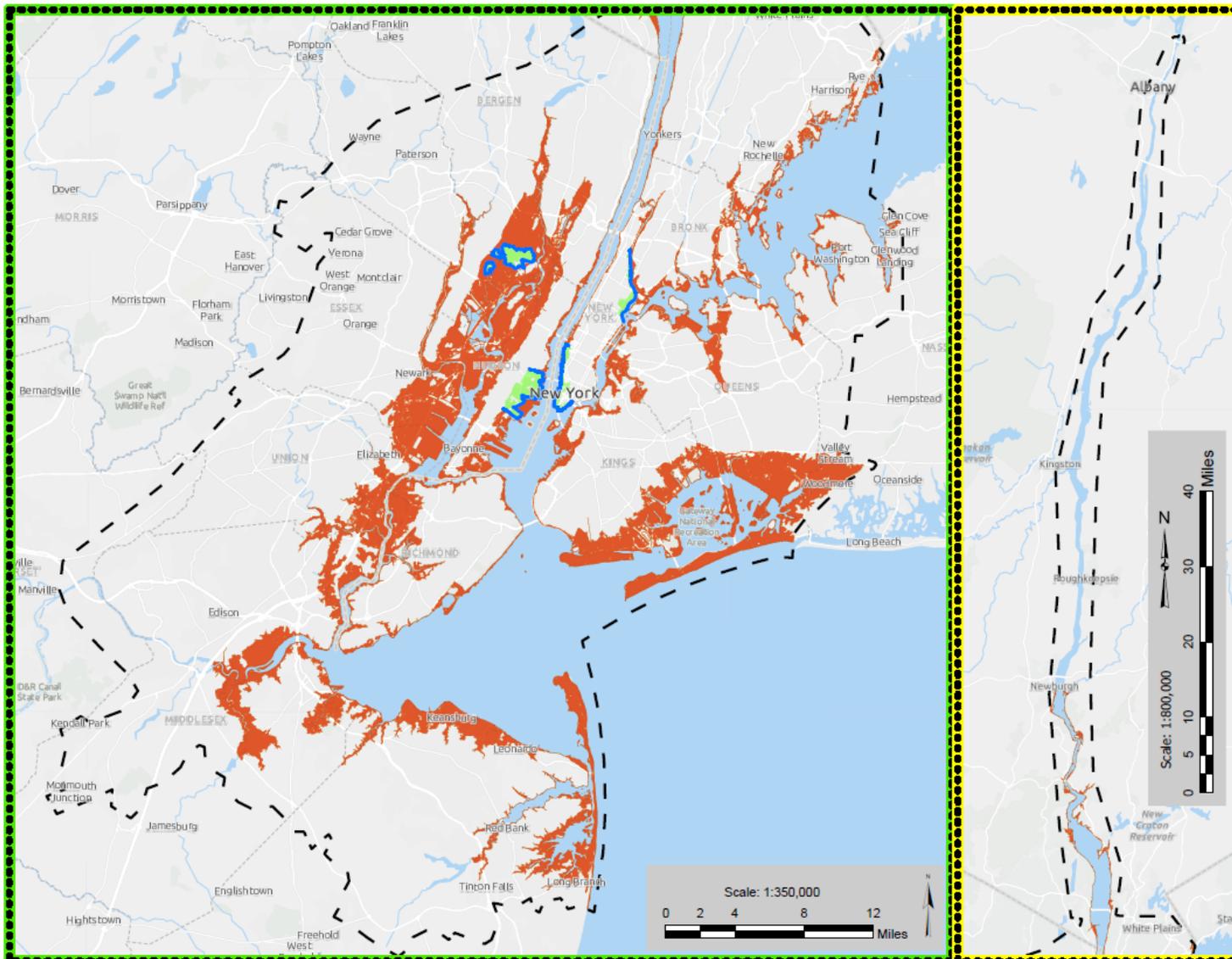
ALTERNATIVE 5



3.3% Study Area at Direct Risk Benefited

Feature Type	Approx. Miles
Storm Surge Barriers	0
Shoreline Based Measures	31.1
Induced Flooding-Mitigation Features	0
Risk Reduction Features (N/A)	0

Alternative	
First Cost (\$B):	\$ 16.0
Total Present Value Cost (\$B):	\$ 25.8
Estimated Construction Duration (years):	5



Legend

- Study Area
- Alternative 5 - CSRM Measures (SBM)
- CSRM Reduced Risk with Project Alt5 (area directly benefited)
- Residual Risk with Project Alt5 (area not benefited)

NY-NJ HARBOR AND TRIBUTARIES STUDY

Alternative 5
Future With Project
Reduced Risk & Residual Risk
(1% AEP with Intermediate Sea Level Rise in 2095)
 Date: 12/8/2022

U.S. ARMY CORPS OF ENGINEERS
 NEW YORK DISTRICT

REMINDER – PLEASE FILL OUT YOUR COMMENT CARD IF YOU HAVE ANY QUESTIONS. WE WILL BE COLLECTING THEM SHORTLY.



ENVIRONMENTAL COMPLIANCE



Multiple laws, executive orders and regulations are considered under the NEPA process:

- National Environmental Policy Act
 - Preserves historic and archaeological sites*
- National Historic Preservation Act, as amended
 - Preserves historic and archaeological sites*
- Clean Water Act
 - Prevents water pollution*
- Endangered Species Act
 - Protects plants and animals from extinction*
- Clean Air Act
 - Prevents air pollution*
- Environmental Justice
 - Addressing equity in adverse and beneficial environmental effects*
- Other Federal and State laws



Piping Plover.



Atlantic Sturgeon.



TYPES OF NEPA ANALYSIS



- Categorical Exclusion
- Environmental Assessment (EA)
- Environmental Impact Statement (EIS)
- Tiered Environmental Impact Statement (EIS)

Least



Most

TIER 1 – Consists of a broad-scale review of the Alternatives during the feasibility phase.

TIER 2 – Consists of subsequent more detailed reviews as the designs are further refined during the pre-construction engineering design phase.

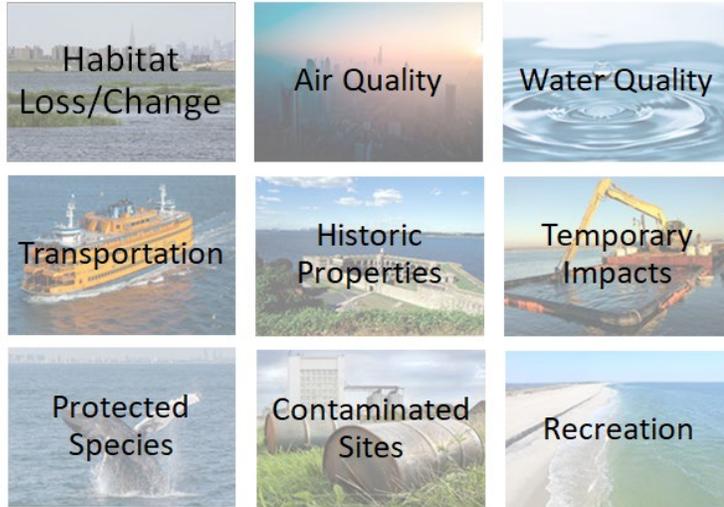




DRAFT TIER 1 EIS: REPORT ORGANIZATION



EXISTING CONDITIONS Chapter 2



- 50 environmental resources assessed
- Organized by Planning Region

ENVIRONMENTAL CONSEQUENCES Potential for Adverse Impacts by Measure Type Chapter 6

RESOURCE	STORM SURGE BARRIERS	TIDE GATES	FLOODWALL	FLOODWALLS WITH PARK	LEVEES	ELEVATED PROMENADES	BURIED SEAWALLS/SAND DUNES	SEAWALLS	REVTMENTS	SEAWALLS WITH REVETMENTS	DEPLOYABLE FLOOD BARRIERS	BERMS	BULKHEADS	PEDESTRIAN/VEHICULAR GATES	NAVIGABLE GATES	ROAD RAISING
Wildlife	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Fish	Y+	Y+	Y+	Y+	N	Y+	Y+	Y+	Y+	Y+	Y+	N	Y+	N	Y+	N
Migratory Fish	Y	Y	Y	Y	N	Y	Y	Y	N	N	Y	Y	Y	N	Y	N
Terrestrial Vegetation	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y
Submerged Aquatic Vegetation	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Invasive and Aquatic Nuisance Species	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N
Threatened and Endangered Species Terrestrial	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y+	Y

- Draft Tier 1 assesses Structural Measures only
- Final Tier 1 will also assess ringwalls, nonstructural, and Natural and Nature-Based Features

ENVIRONMENTAL CONSEQUENCES Applied Scoring Methodology Chapter 6

Impact Rating Definitions	
Impact Rating and Numerical Score	Description
High (5)	Effects to the resource would have substantial consequences, locally and/or regionally. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would not be enough to reduce the significance of effect and therefore, effects to the resource would not be environmentally acceptable.
Moderate to High (4)	Effects to the resource would be locally and/or regionally significant. Impacts would be within regulatory standards; however, existing resource conditions are expected to be affected in the near-term, but not necessarily in the long term. Mitigation measures to reduce any potential adverse impacts would be necessary.
Moderate (3)	Effects to the resource are expected to be moderate in the near-term and localized. Impacts would be within or below regulatory standards, as applicable, and the use of mitigation measures would reduce potential adverse impacts, if applicable.
Low (2)	Effects to the resource would either be negligible or, if detectable, have minor temporary impacts locally to the resource. The impacts would be well below regulatory standards, as applicable, and mitigation measures may be implemented to sustain low to no impact to the resource.
No Impact (1)	There would be no impacts to the resource because the resource would not be affected.

- Defining Tier 1 Scope of Direct, Indirect, and Cumulative Impacts - BROADLY
- Estimating Beneficial Environmental Effects (“+”)
- Incorporating Cooperating Agency and Stakeholder Input
- Estimating In-Kind Mitigated Impacts
- Identifying Out-Of-Kind Mitigated Impacts

Review Aid: StoryMap <https://hats-cenan.hub.arcgis.com/>



ENVIRONMENTAL IMPACTS AND BENEFITS



All alternatives, including the no action alternative, have potential adverse impacts.

NO ACTION ADVERSE IMPACTS

- Coastal storm risk would continue to impact wildlife, and threatened and endangered species, habitat; changes in water quality (salinity and DO) and flow patterns, the spread of invasive or aquatic nuisance species, low-lying areas would continue to experience coastal flood damages to special status land.

POTENTIAL ADVERSE IMPACTS

- In-water measures may impact fish species, migratory patterns, and habitat (low to moderate-high).
- Hazardous, Toxic, and Radioactive Waste sites are prevalent and may delay construction.
- National Park Service property
- Viewshed

POTENTIAL BENEFICIAL EFFECTS

- Reef effect of in-water measures attracting numerous species of shellfish, algae, and other invertebrates.
- Reduced risk of coastal flooding to special status species habitat and areas (e.g. threatened and endangered species, Coastal Barrier Resources Act areas, etc.)

*For additional details and information, refer to Chapter 6 of the Draft Integrated FR/Tier 1 EIS



ENVIRONMENTAL PLAN COMPARISON



FOOTPRINT/CONSTRUCTION SCORE CARD	ALTERNATIVE				
	2	3A	3B	4	5
NATURAL AND PHYSICAL ENVIRONMENT					
Wildlife and Vegetation ^A	1.75	1.77	1.51	1.53	1.20
Special Status Species (Terrestrial) ^B	2.11	2.0	1.66	1.66	1.33
Special Status Species (Aquatic) ^C	1.63	1.77	1.5	1.44	1.05
Special Status Areas ^D	1.66	1.62	1.41	1.43	1.16
Commercial and Recreational Fishing	2.0	2.22	1.77	1.66	1.11
Physical Resources ^E	1.94	2.08	1.69	1.66	1.33
Hydrological Resources ^F	1.53	1.73	1.46	1.46	1.06
Water Quality	2.11	2.22	1.77	1.66	1.33
Ecosystems (NYBEM)	*To be incorporated for the Final FR/Tier 1 EIS				
Air Quality and Clean Air Act ^G	1	1	1	1	1
Regional Climate and Climate Change	1	1	1	1	1
Cultural Resources ^H	2.77	2.66	2.66	2.66	2.22
Native American Lands	1	1	1	1	1
Hazardous, Toxic, and Radioactive Waste Sites	2.2	2.22	2.0	2.0	1.55
Navigation	1.22	1.44	1.22	1.11	1.0
Noise and Vibration	2.0	2.22	1.77	1.66	1.33
Environmental Justice	1.66	1.66	1.55	1.55	1.33
CALCULATION: Sum of the Footprint/Construction Impact Ratings (x) divided by the total number of resources included in each resource category (y). (x = alternative score; y = # of resources) x ÷ y = Rating (1-5)					
1 - No Impact, 2 - Low Impact, 3 - Moderate Impacts, 4 - Moderate-High Impact, 5 - High Impact					
ALTERNATIVE TOTAL: (rounded to the nearest 10 th)	1.7	1.8	1.6	1.5	1.3

Tentatively Selected Plan

OPERATIONS AND MAINTENANCE SCORE CARD	ALTERNATIVE				
	2	3A	3B	4	5
NATURAL AND PHYSICAL ENVIRONMENT					
Wildlife and Vegetation ^A	1.42	1.44	1.31	1.27	1.12
Special Status Species (Terrestrial) ^B	1.77	1.77	1.51	1.55	1.33
Special Status Species (Aquatic) ^C	1.27	1.30	1.22	1.13	1.02
Special Status Areas ^D	1.26	1.25	1.23	1.18	1.05
Commercial and Recreational Fishing	1.88	1.55	1.55	1.33	1.11
Physical Resources ^E	1.30	1.38	1.25	1.30	1.08
Hydrological Resources ^F	1.20	1.42	1.17	1.17	1.0
Water Quality	1.66	1.55	1.44	1.22	1.0
Ecosystems (NYBEM)	*To be incorporated for the Final FR/ Tier 1 EIS				
Air Quality and Clean Air Act ^G	1	1	1	1	1
Regional Climate and Climate Change	1	1	1	1	1
Cultural Resources ^H	2.0	1.55	1.22	1.55	1.22
Native American Lands	1	1	1	1	1
Hazardous, Toxic, and Radioactive Waste Sites	1.66	1.44	1.33	1.33	1.0
Navigation	1.22	1.44	1.22	1.11	1.0
Noise and Vibration	1.0	1.0	1.0	1.0	1.0
Environmental Justice	1.77	1.66	1.55	1.55	1.33
CALCULATION: Sum of the Operations and Maintenance Assumption Ratings (x) divided by the total number of resources in each resource category (y). (x = alternative score; y = # of resources) x ÷ y = Rating (1-5)					
1 - No Impact, 2 - Low Impact, 3 - Moderate Impacts, 4 - Moderate-High Impact, 5 - High Impact					
ALTERNATIVE TOTAL: (rounded to the nearest 10 th)	1.4	1.4	1.3	1.2	1.1

Tentatively Selected Plan

MITIGATED IMPACT SCORE CARD	ALTERNATIVE				
	2	3A	3B	4	5
NATURAL AND PHYSICAL ENVIRONMENT					
Wildlife and Vegetation ^A	1.51	1.53	1.37	1.35	1.12
Special Status Species (Terrestrial) ^B	1.16	1.05	1.05	1.05	1.0
Special Status Species (Aquatic) ^C	1.50	1.5	1.33	1.25	1.02
Special Status Areas ^D	1.12	1.11	1.07	1.08	1.06
Commercial and Recreational Fishing	2.11	2.11	1.77	1.66	1.11
Physical Resources ^E	1.41	1.52	1.33	1.41	1.11
Hydrological Resources ^F	1.24	1.33	1.13	1.13	1.06
Water Quality	1.11	1.0	1.0	1.0	1.0
Ecosystems (NYBEM)	*To be incorporated for the Final FR/ Tier 1 EIS				
Air Quality and Clean Air Act ^G	1	1	1	1	1
Regional Climate, Climate Change, and RSLC	1	1	1	1	1
Cultural Resources ^H	1.2	1.33	1.11	1.22	1.11
Native American Lands	1	1	1	1	1
Hazardous, Toxic, and Radioactive Waste Sites	1.88	1.88	1.55	1.77	1.44
Navigation	1.22	1.44	1.22	1.11	1.0
Noise and Vibration	1.22	1.44	1.22	1.11	1.0
Environmental Justice	1.0	1.0	1.0	1.0	1.0
CALCULATION: Sum of the Footprint/Construction impact ratings and Operations and Maintenance Assumption Ratings (x) divided by the total number of resources. (x = alternative score; y = # of resources) x ÷ y = Rating (1-5)					
1 - No Impact, 2 - Low Impact, 3 - Moderate Impacts, 4 - Moderate-High Impact, 5 - High Impact					
ALTERNATIVE TOTAL: (Rounded to the nearest 10 th)	1.3	1.3	1.2	1.2	1.1

Tentatively Selected Plan

Key Takeaways:

- All Alternatives incur impacts to varying magnitudes.
- Impacts are generally observed to be highest during construction but are temporary.
- Impact producing factors are dependent on in-water vs. on-land and structural measure type.
- All Alternatives incur beneficial effects.



ENVIRONMENTAL JUSTICE



Defining Disadvantaged Communities (DAC):

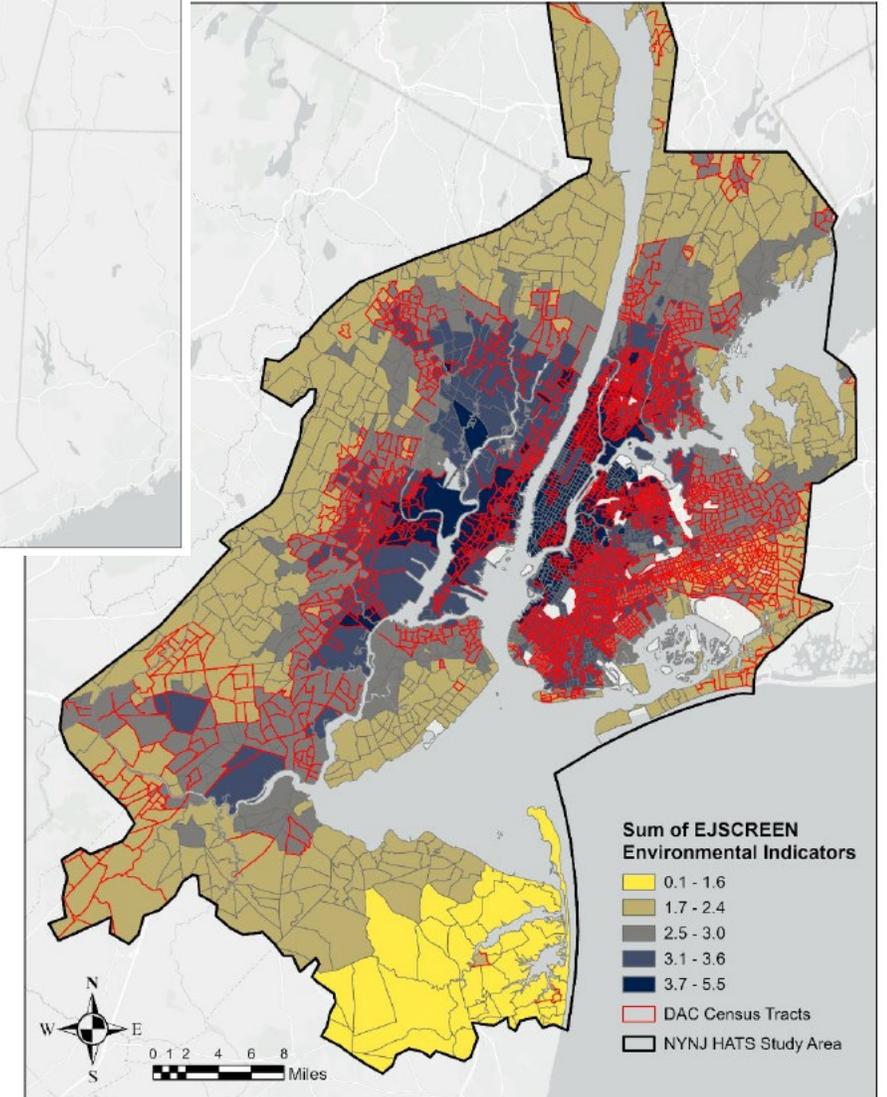
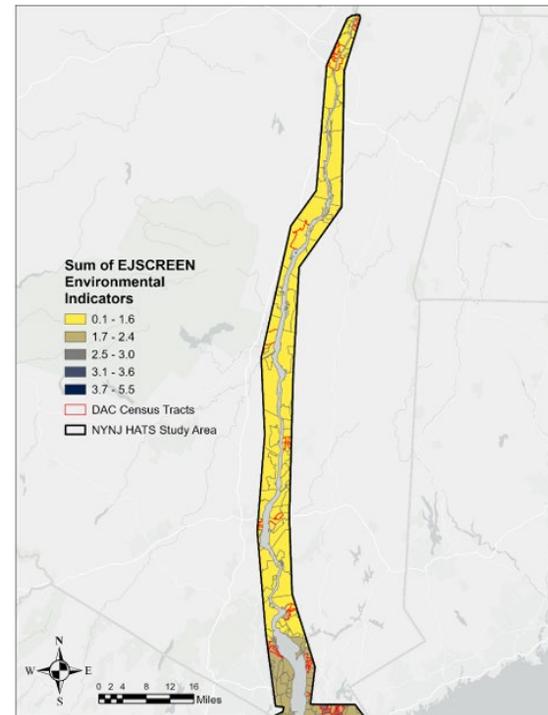
- 23.59% or more of the population below the federal poverty level
- 51.1% or more of the population identify as minority

Environmental Burdens:

- EPA's EJ Screen

Additional Vulnerability Factors Considered:

- Elderly/Very young
- Disabled
- Female-headed households
- English Proficiency



EJ and the TSP/Alternative 3B

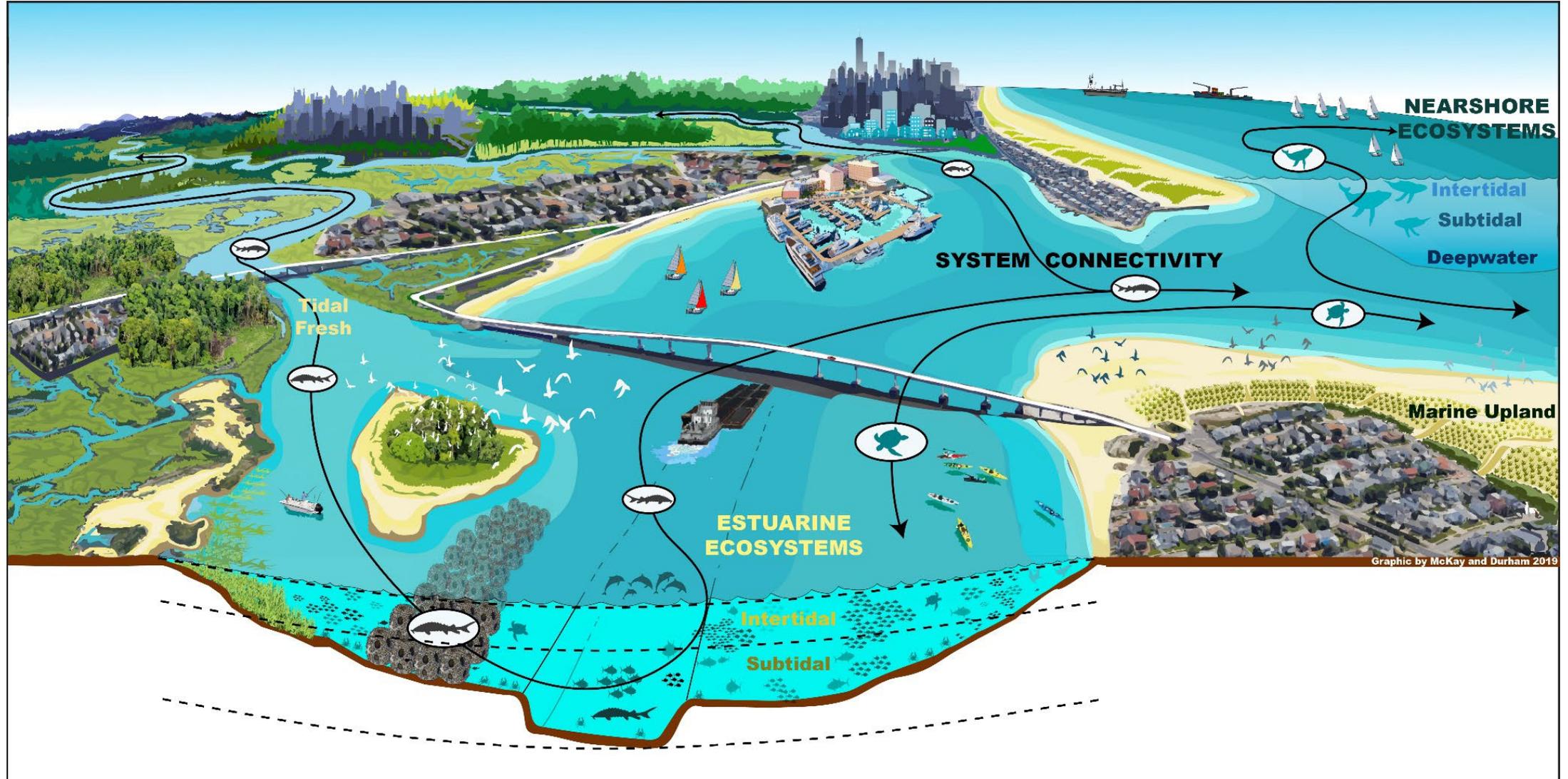
63% of census tracts in the Reduced Risk Areas meet the criteria for DAC

63 census tracts in the construction footprint meet the criteria for DAC

Virtually every feature of the TSP touches a DAC



NEW YORK BIGHT ECOLOGICAL MODEL



REMINDER – PLEASE FILL OUT YOUR COMMENT CARD IF YOU HAVE ANY QUESTIONS. WE WILL BE COLLECTING THEM SHORTLY.



PROJECT BENEFITS & COSTS – ON AN AVERAGE ANNUAL BASIS (INTERMEDIATE RSLC)



Alternative	Average Annual Cost	Average Annual Benefits*	Net Benefits*	BCR
2	\$5.0B	\$4.6B	-\$0.5B	0.91
3A	\$3.2B	\$6.4B	\$3.2B	1.99
3B	\$2.6B	\$6.3B	\$3.7B	2.45
4	\$2.1B	\$5.0B	\$2.9B	2.39
5	\$0.9B	\$1.9B	\$1.0B	2.21

* Benefits currently based on estimated damages avoided to structures in study area. Critical infrastructure and other possible benefits under refinement and have not been included in the net benefit calculations at this time.



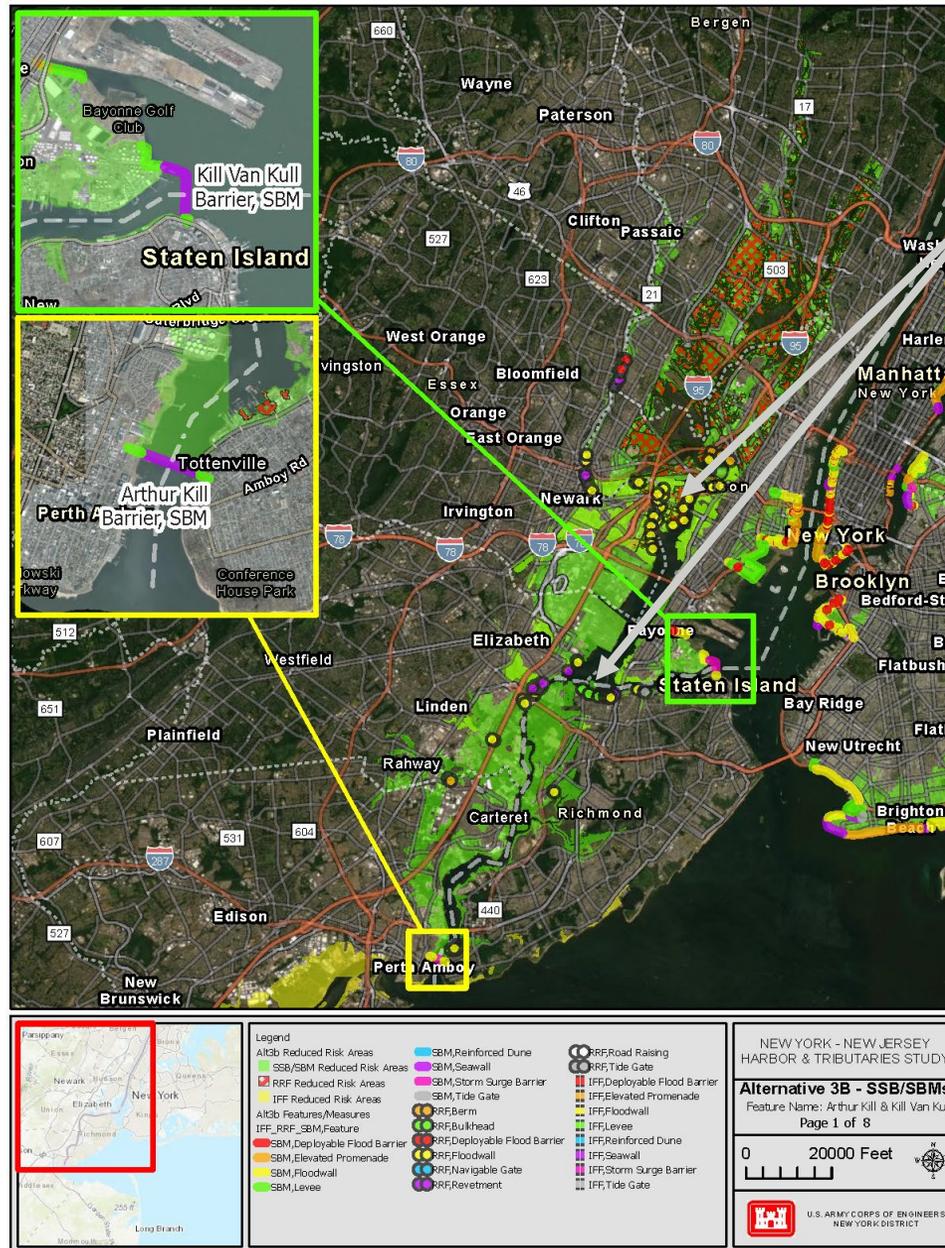
TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



Kill Van Kull & Arthur Kill Storm Surge Barrier Feature

- Numerous Risk Reduction Features (structural and nonstructural) behind storm surge barriers in both Staten Island and New Jersey
- Other considerations:
 - Kill Van Kull and Arthur Kill are major channels in Port – navigational access & impacts

Note Risk Reduction Features behind Storm Surge Barriers



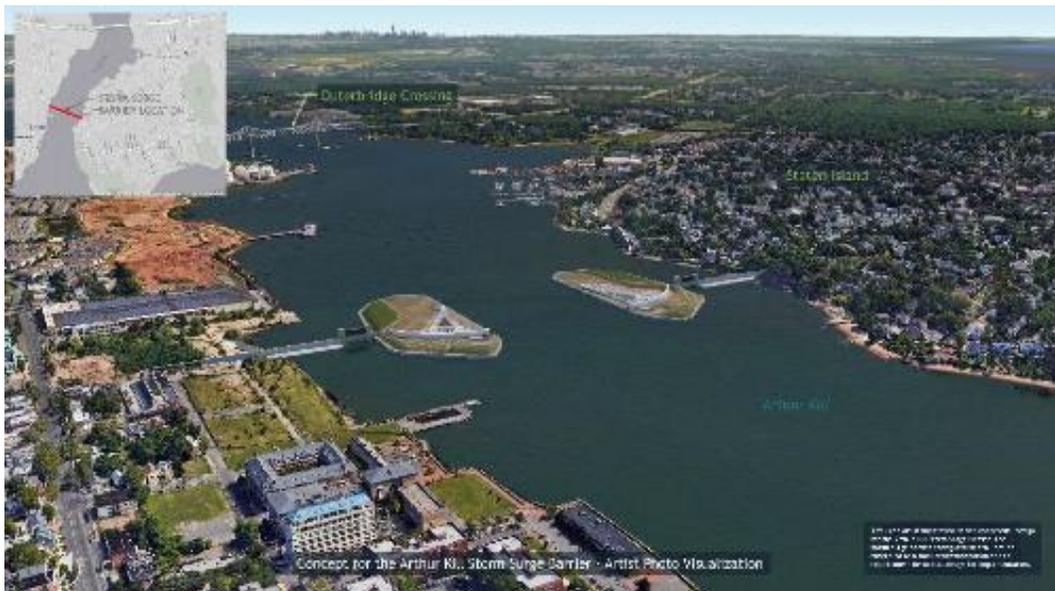


TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



Kill Van Kull Storm Surge Barrier:

- Navigable Passage: Floating Sector Gate
- 800 foot opening
- 19 foot crest elevation (NAVD88) for currently selected design storm event
- 5 Auxiliary Lift Gates
- Total Length in Water: 3,300 feet (approximately)
- Shorebased Tie-Ins: 4,800+ feet comprised of floodwalls, railroad and vehicular gates



Arthur Kill Storm Surge Barrier:

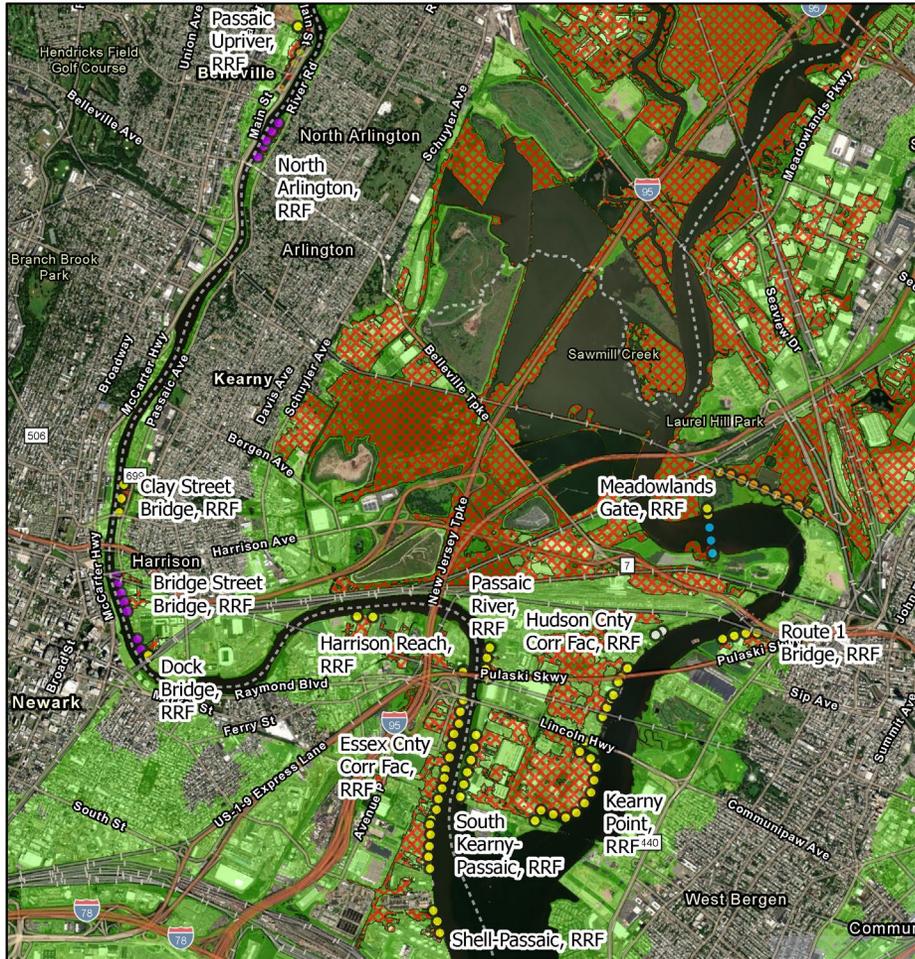
- Navigable Passage: Floating Sector Gate
- 600 foot opening
- 19 foot crest elevation (NAVD88) for currently selected design storm event
- 2 Auxiliary Lift Gates
- Total Length in Water: 2,300 feet (approximately)
- Shorebased Tie-Ins: 700+ feet comprised of floodwalls



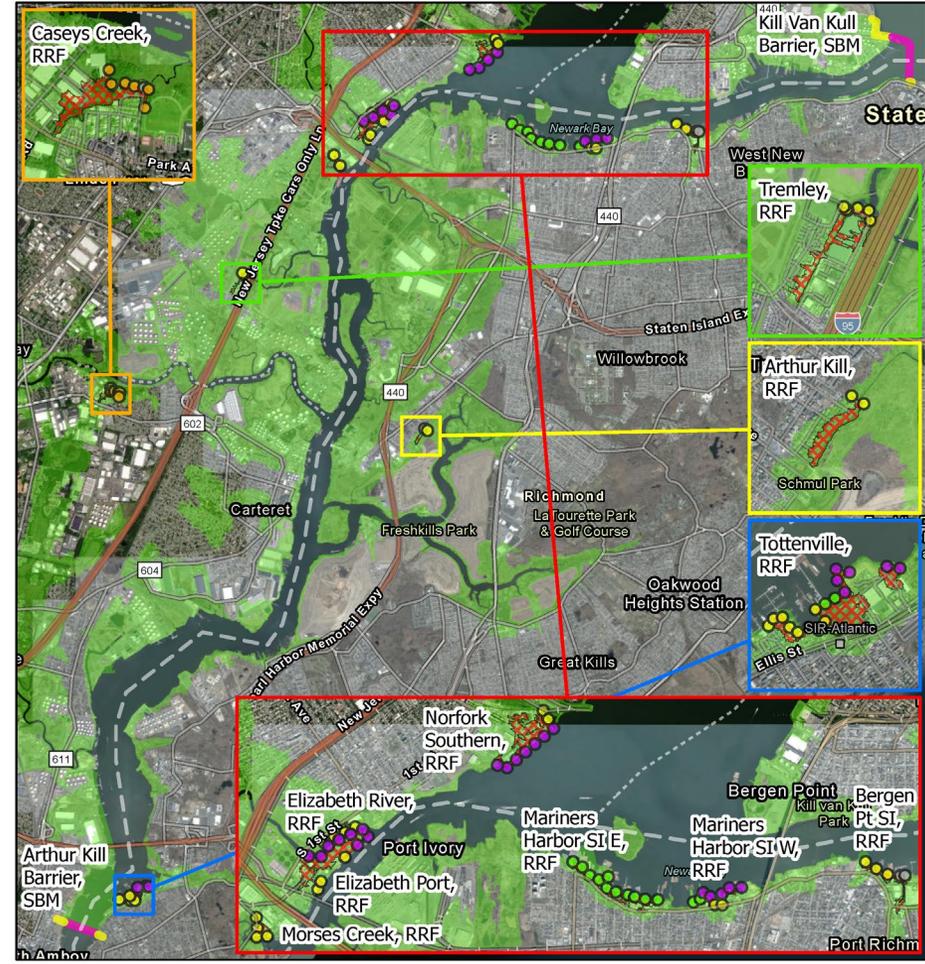
TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



Residual Risk Features – Northern New Jersey



Residual Risk Features – NJ & SI

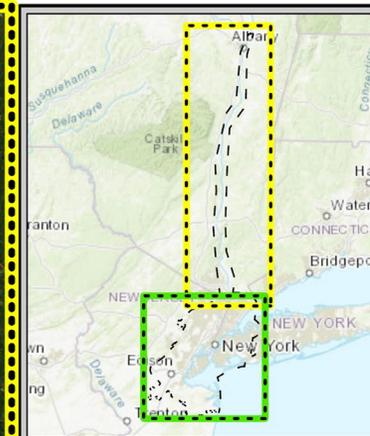
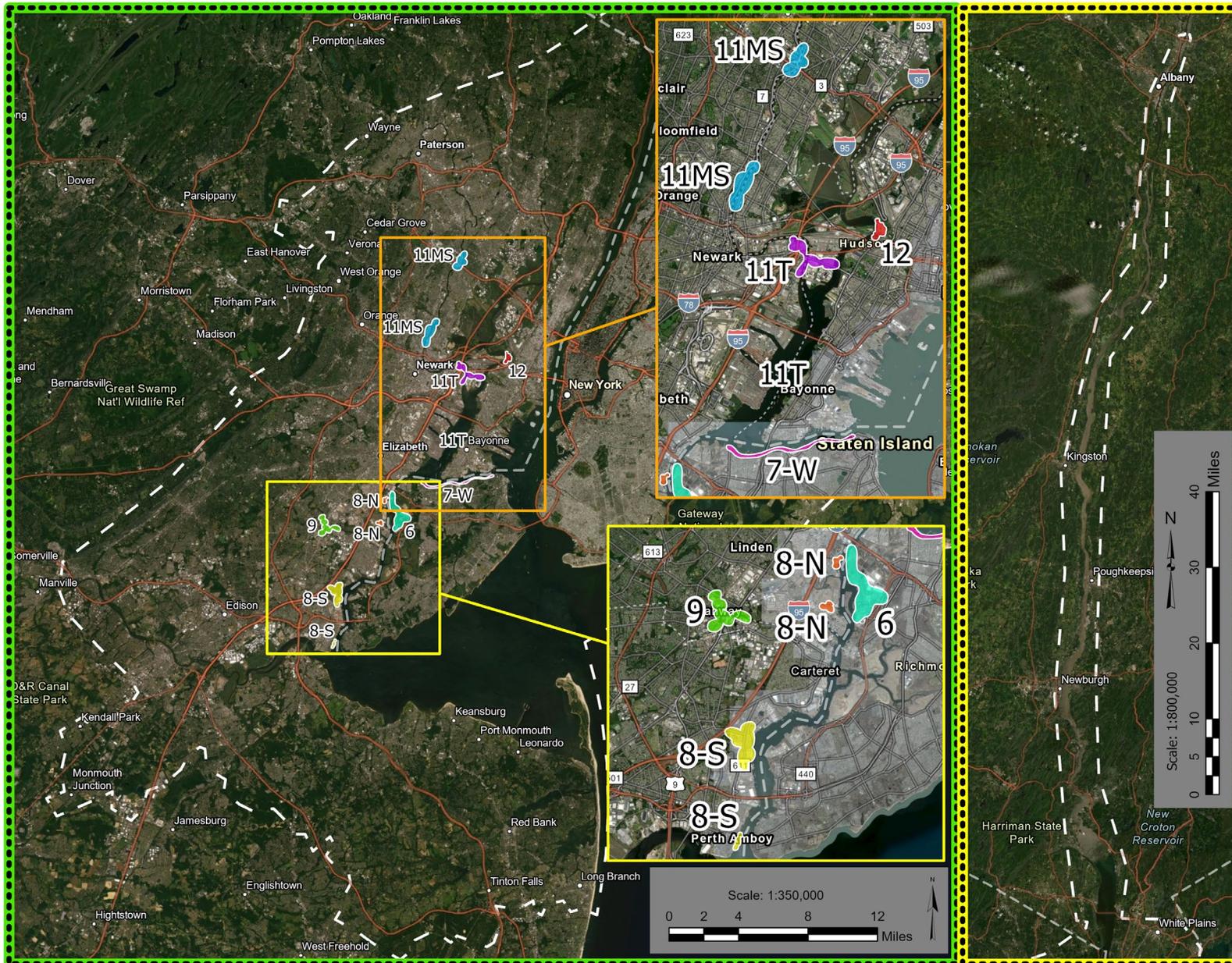


	Legend Alt3b Features/Measures ● RRF, Berm ● RRF, Deployable Flood Barrier ● RRF, Floodwall ● RRF, Navigable Gate	● RRF, Revetment ○ RRF, Road Raising Alt3b Reduced Risk Areas SSB/SBM Reduced Risk Areas RRF Reduced Risk Areas	NEW YORK - NEW JERSEY HARBOR & TRIBUTARIES STUDY Alternative 3B - RRFs New Jersey (Northern) RRFs 0 4000 Feet

	Legend Alt3b Features/Measures ● SBM, Floodwall ● SBM, Storm Surge Barrier ● RRF, Berm ● RRF, Bulkhead ● RRF, Floodwall	● RRF, Revetment ○ RRF, Tide Gate Alt3b Reduced Risk Areas SSB/SBM Reduced Risk Areas RRF Reduced Risk Areas	NEW YORK - NEW JERSEY HARBOR & TRIBUTARIES STUDY Alternative 3B - RRFs New Jersey (Southern) RRFs 0 5000 Feet



TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



	Reach	Structures		
		NJ	NYC	Total
	6	0	7	7
	7W	0	12	12
	8N	18	0	18
	8S	39	0	39
	9	31	0	31
	11MS	16	0	16
	11T	16	0	16
	12	19	0	19
		139	19	158

NY-NJ HARBOR AND TRIBUTARIES STUDY

Alternative 3B
Provisionally Identified Areas for Possible Ringwalls and/or Nonstructural Measures

Date: 10/23/2022

U.S. ARMY CORPS OF ENGINEERS
 NEW YORK DISTRICT



TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



South Brooklyn and Jamaica Bay Area

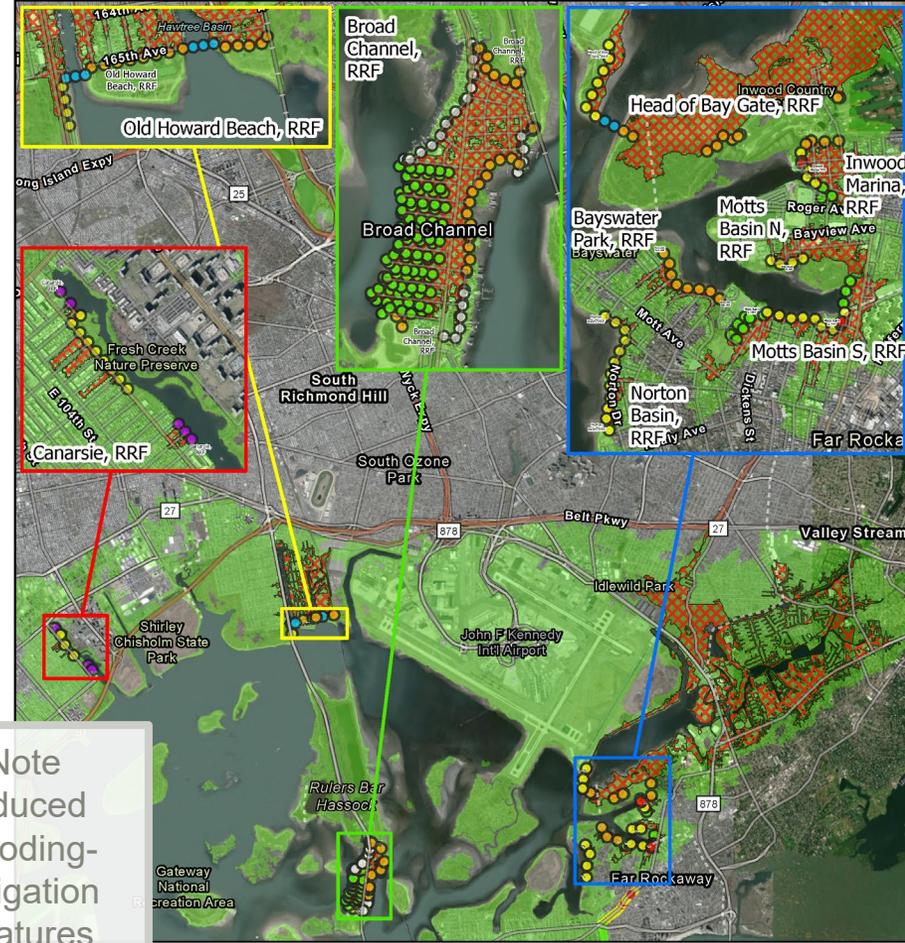
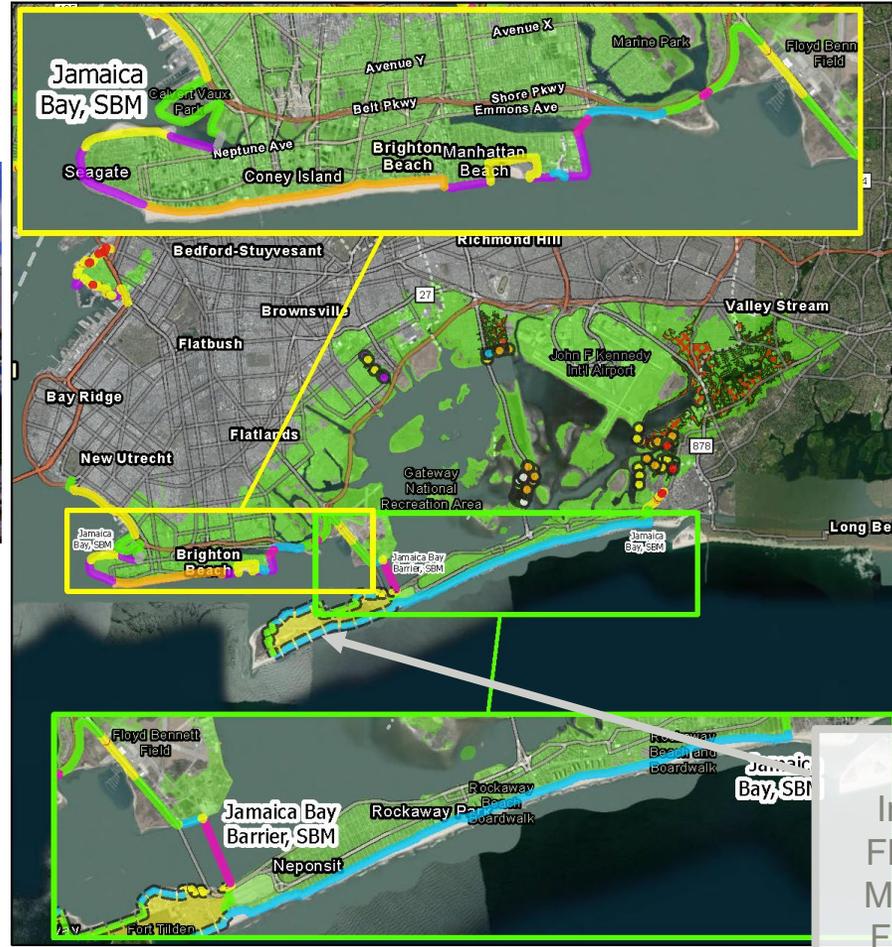
Risk Reduction Feature Details

Coney Island Boardwalk

Existing Conditions



Rendering of Initial Proposal



Note Induced Flooding-Mitigation Features Outside of Storm Surge Barrier

	<p>Legend</p> <ul style="list-style-type: none"> Alt3b Reduced Risk Areas SSB/SBM Reduced Risk Areas RRF Reduced Risk Areas IFF Reduced Risk Areas Alt3b Features/Measures IFF_RRF_Feature SBM_Deployable Flood Barrier SBM_Elevated Promenade SBM_Floodwall SBM_Levee SBM_Reinforced Dune SBM_Seawall SBM_Storm Surge Barrier SBM_Tide Gate RRF_Berm RRF_Bulkhead RRF_Deployable Flood Barrier RRF_Floodwall RRF_Navigable Gate RRF_Revatment RRF_Road Raising RRF_Tide Gate IFF_Deployable Flood Barrier IFF_Elevated Promenade IFF_Floodwall IFF_Levee IFF_Reinforced Dune IFF_Seawall IFF_Storm Surge Barrier IFF_Tide Gate 	<p>NEW YORK - NEW JERSEY HARBOR & TRIBUTARIES STUDY</p> <p>Alternative 3B - RRFs</p> <p>Feature Name: Jamaica Bay</p> <p>Page 5 of 10</p> <p>0 10000 Feet</p>		<p>Legend</p> <p>Alt3b Features/Measures</p> <ul style="list-style-type: none"> SBM, Deployable Flood Barrier SBM, Floodwall SBM, Levee RRF, Berm RRF, Bulkhead RRF, Floodwall RRF, Navigable Gate RRF, Revatment RRF, Road Raising Alt3b Reduced Risk Areas SSB/SBM Reduced Risk Areas RRF, Deployable Flood Barrier RRF, Floodwall RRF, Navigable Gate RRF, Revatment RRF, Road Raising RRF, Reduced Risk Areas 	<p>NEW YORK - NEW JERSEY HARBOR & TRIBUTARIES STUDY</p> <p>Alternative 3B - RRFs</p> <p>New York RRFs</p> <p>0 5000 Feet</p>
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SOUTH BROOKLYN SHORELINE-BASED MEASURES AND JAMAICA BAY STORM SURGE BARRIER



Jamaica Bay Storm Surge Barrier:

2 – 200 foot wide Sector Gates

15 Auxiliary Lift Gates

Total Length in Water: 3,800 feet

Crest elevation*: 18 feet (NAVD88)

Sheepshead Bay Storm Surge Barrier:

100 foot wide Sector Gate

2 Auxiliary Lift Gates

Total Length in Water: 800 feet

Crest elevation*: 17 feet (NAVD88)

Gerritsen Creek Storm Surge Barrier:

115 foot wide Vertical Lift Gate

2 Auxiliary Lift Gates

Total Length in Water: 400 feet

Crest elevation*: 17 feet (NAVD88)

Shoreline-Based Tie-In's:

Total Length: 116,000+ feet

Measures include: Floodwalls, levees, reinforced dunes, pedestrian and vehicle gates, elevated promenades, seawalls, and tide gates



* - For currently selected design storm event



TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



Lower Manhattan Area

Shoreline based features only

- Total length: 31,000+ feet
- Measures include: Floodwalls, levees, flip up barriers, pedestrian and vehicle gates, elevated promenades, floodwalls with park, and seawalls
- Other considerations:
 - May need additional stormwater and wastewater pump station improvements
 - Need to reconcile NYNJHAT study plan for area with other non-federal plans for portions of area



Note
Induced
Flooding-
Mitigation
Features

	Legend Alt3b Features/Measures SBM, Deployable Flood Barrier SBM, Elevated Promenade SBM, Floodwall SBM, Levee SBM, Seawall	IFF, Elevated Promenade IFF, Floodwall IFF, Seawall Alt3b Reduced Risk Areas SSB/SBM Reduced Risk Areas IFF Reduced Risk Areas	NEW YORK - NEW JERSEY HARBOR & TRIBUTARIES STUDY Alternative 3B - SSB/SBMs Feature Name: New York, City West Side Page 7 of 8 0 3000 Feet
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Christopher Street

Existing Conditions



Rendering of Initial Proposal



Proposed During Storm Conditions





TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



Shoreline based features only

- Total length: 25,000 feet
- Measures include:
Floodwalls, vehicle gates, elevated promenades, and seawalls

106th Street

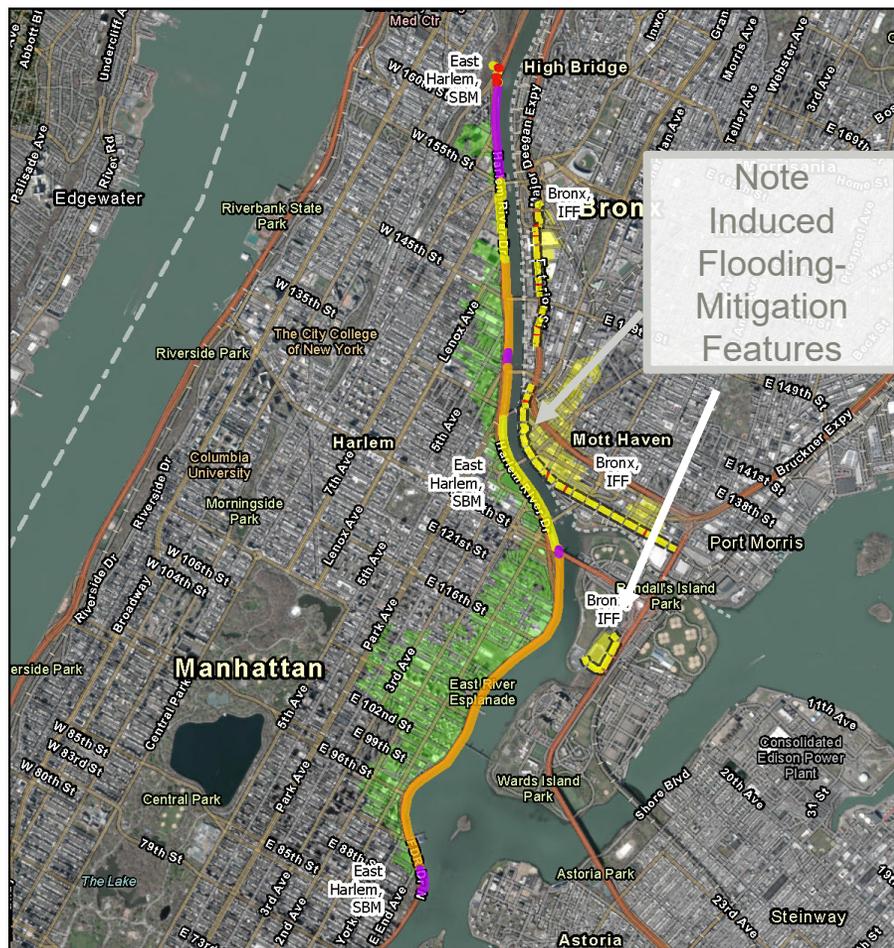
Existing Conditions



Rendering of Initial Proposal



East Harlem and Bronx Area



	Legend Alt3b Features/Measures SBM, Deployable Flood Barrier SBM, Elevated Promenade SBM, Floodwall SBM, Seawall	IFF, Deployable Flood Barrier IFF, Floodwall Alt3b Reduced Risk Areas SSB/SBM Reduced Risk Areas IFF Reduced Risk Areas	NEW YORK - NEW JERSEY HARBOR & TRIBUTARIES STUDY Alternative 3B - SSB/SBMs Feature Name: East Harlem SBM Page 2 of 8
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145th Street

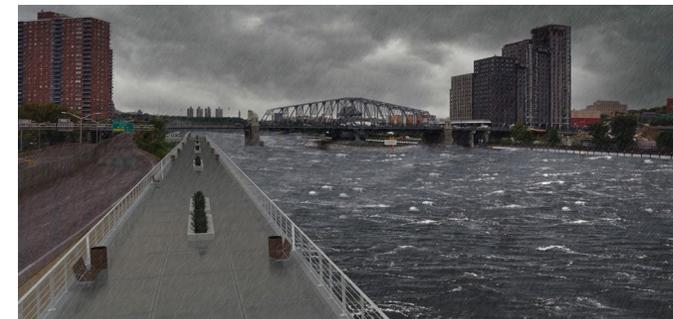
Existing Conditions



Rendering of Initial Proposal



Proposed During Storm Conditions





TENTATIVELY SELECTED PLAN FEATURES IN DETAIL

Liberty State Park



Shoreline based features only

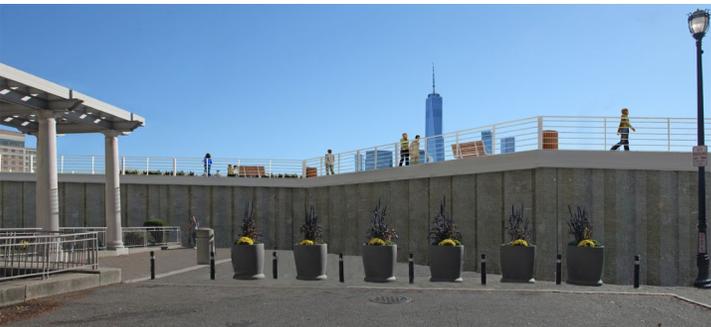
- Total length: 43,000+ feet
- Measures include: Floodwalls, levees, pedestrian, railroad and vehicle gates, elevated promenades, and seawalls

York Street

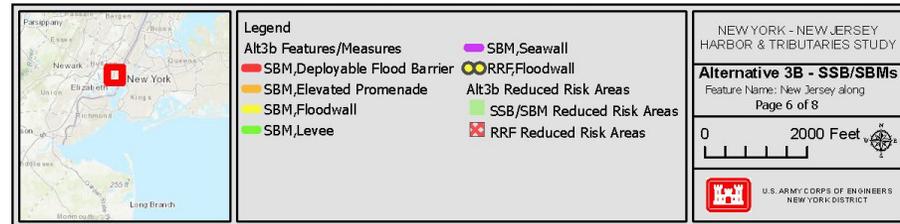
Existing Conditions



Rendering of Initial Proposal



Jersey City Area



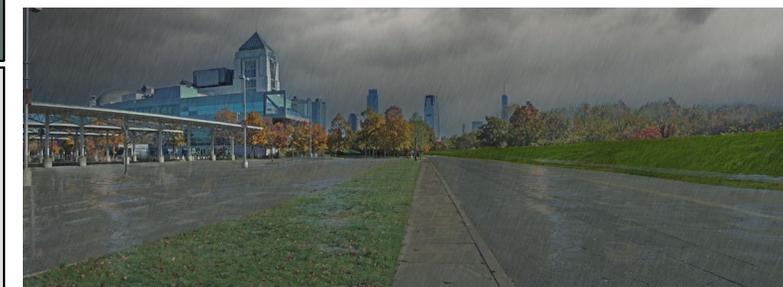
Existing Conditions



Rendering of Initial Proposal



Proposed During Storm Conditions





TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



Newtown Creek Area

Storm surge barrier with shoreline based tie-ins

Newtown Creek Storm Surge Barrier

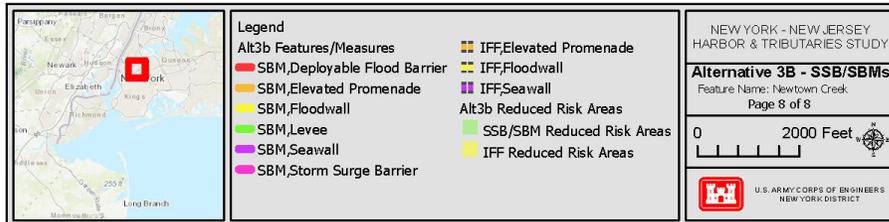
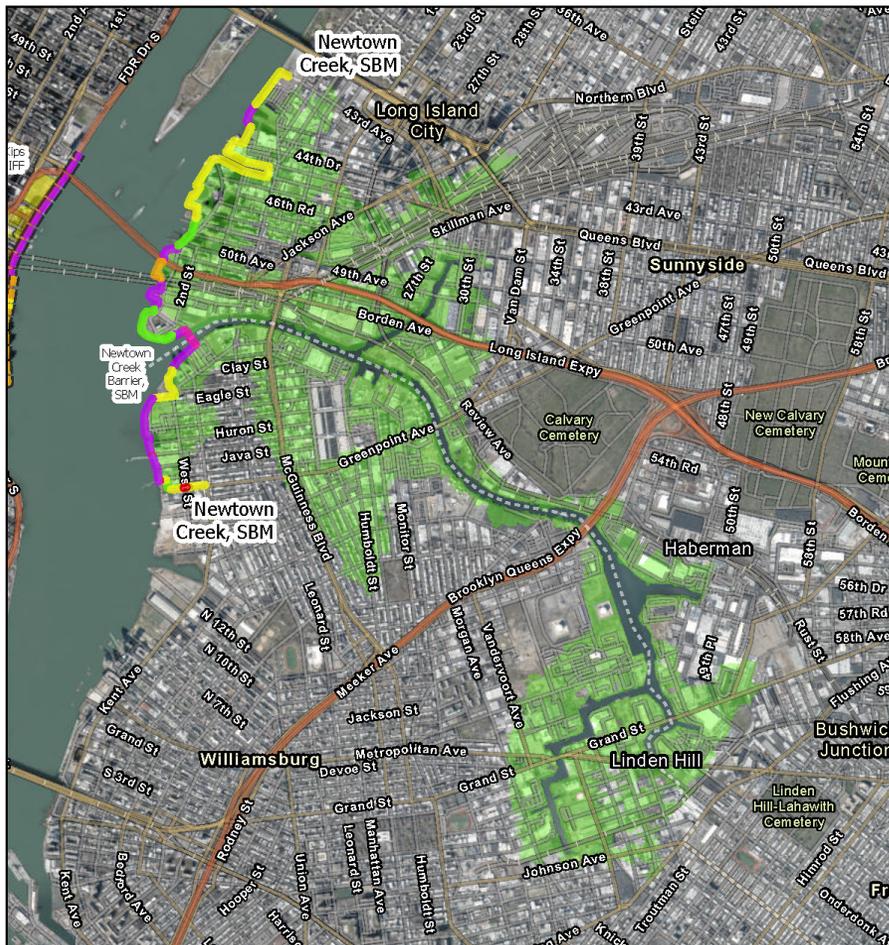
- 130 ft. wide Sector Gate
- 17 foot crest elevation (NAVD88) for currently selected design storm event

Shoreline-based Tie-ins

- 15,000+ ft. of measures including floodwalls, levees, pedestrian & vehicle gates, elevated promenades, and seawalls

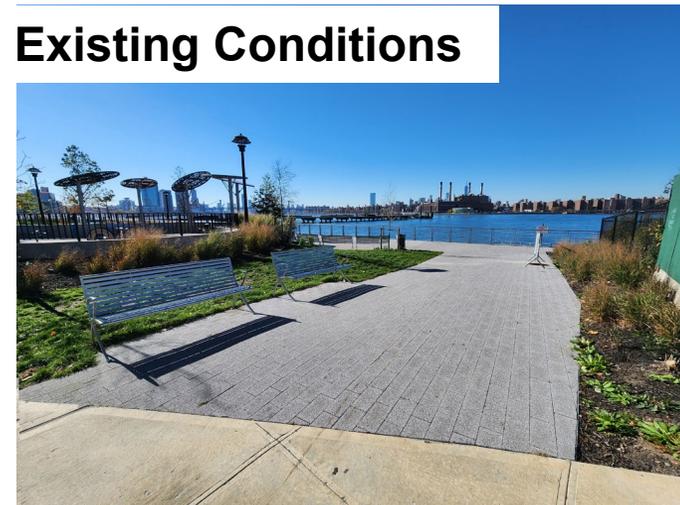
Other considerations:

- May need extension of NYCDEP Wastewater Treatment Plant discharge to outside storm surge barrier
- Known contamination issues

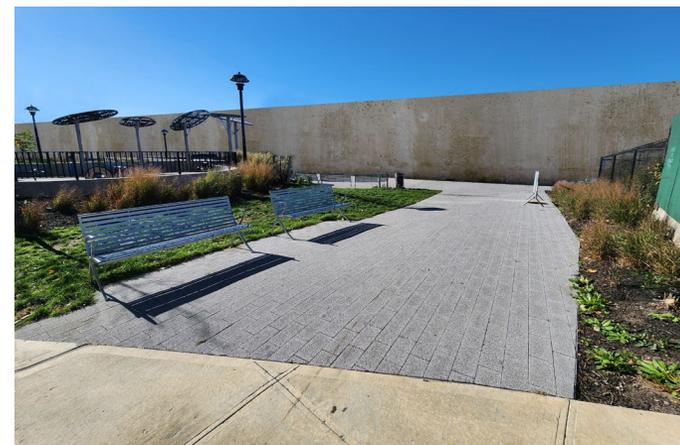


Huron Street, Brooklyn

Existing Conditions



Rendering of Initial Proposal





TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



Storm surge barrier with shoreline-based tie-ins

Gowanus Creek Storm Surge Barrier

- 100 foot wide Sector Gate
- 16 foot crest elevation (NAVD88) for currently selected design storm event
- Total Length in Water: 130 feet

Shore-based Tie-ins

- Total Length: 18,000+ feet
- Measures include: Floodwalls, levees, vehicle gates, and seawalls

Other considerations:

- Known contamination issues

Red Hook and Gowanus Creek Area



	Legend Alt3b Features/Measures ■ SBM, Deployable Flood Barrier ■ SBM, Floodwall ■ SBM, Levee ■ SBM, Seawall ■ SBM, Storm Surge Barrier ■ Alt3b Reduced Risk Areas ■ SSB/SBM Reduced Risk Areas	NEW YORK - NEW JERSEY HARBOR & TRIBUTARIES STUDY Alternative 3B - SSB/SBMs Feature Name: Gowanus Canal Page 4 of 8 0 1000 Feet
	U.S. ARMY CORPS OF ENGINEERS NEW YORK DISTRICT	

Coffey Street, Red Hook, Brooklyn

Existing Conditions



Rendering of Initial Proposal





TENTATIVELY SELECTED PLAN FEATURES IN DETAIL



Storm surge barrier with shoreline-based tie-ins

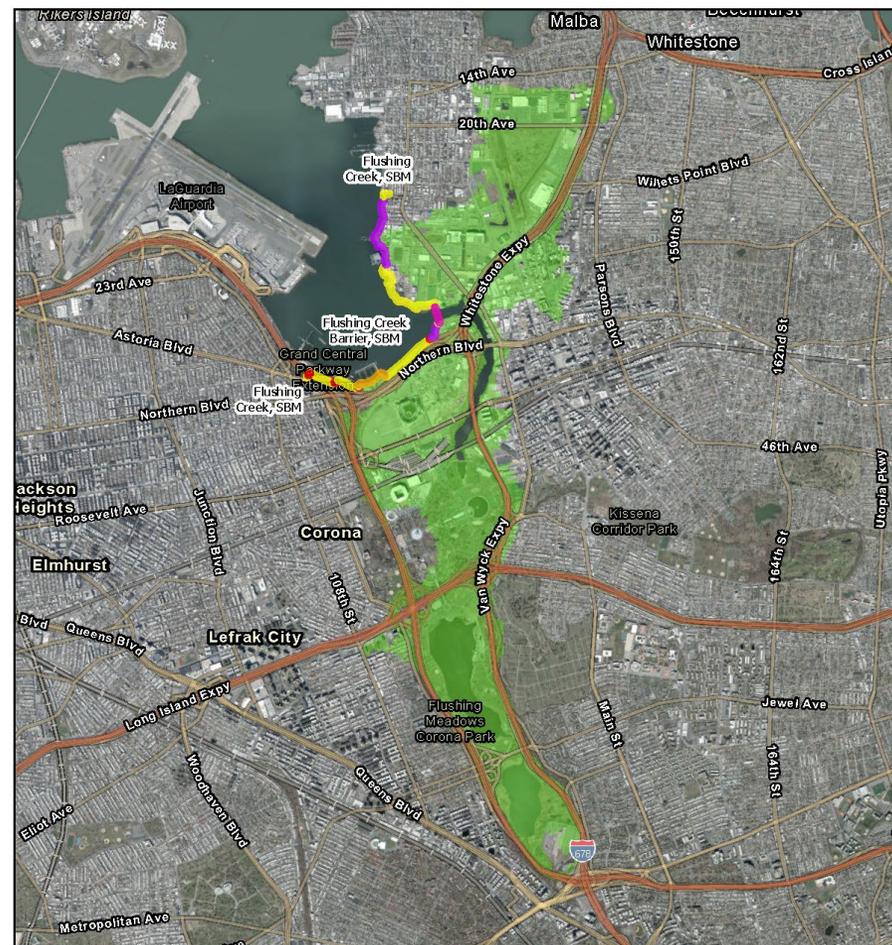
Flushing Creek Storm Surge Barrier

- 135 foot wide Vertical Lift Gate Storm Surge Barrier
- 18 foot crest elevation (NAVD88) for currently selected design storm event
- 2 Auxiliary Lift Gates
- Total Length in Water: 500 feet

Shoreline-based Tie-ins

- Total Length: 11,000+ feet
- Measures include: Floodwalls, vehicle gates, elevated promenades, floodwalls with park, and seawalls

Flushing Bay Area



	Legend Alt3b Features/Measures - SBM, Deployable Flood Barrier - SBM, Elevated Promenade - SBM, Floodwall - SBM, Seawall - SBM, Storm Surge Barrier Alt3b Reduced Risk Areas - SSB/SBM Reduced Risk Areas	NEW YORK - NEW JERSEY HARBOR & TRIBUTARIES STUDY Alternative 3B - SSB/SBMs Feature Name: Flushing Creek Page 3 of 8 0 3000 Feet
	U.S. ARMY CORPS OF ENGINEERS NEW YORK DISTRICT	

Flushing Bay Promenade, Queens

Existing Conditions



Rendering of Initial Proposal



REMINDER – PLEASE FILL OUT YOUR COMMENT CARD IF YOU HAVE ANY QUESTIONS. WE WILL BE COLLECTING THEM SHORTLY.

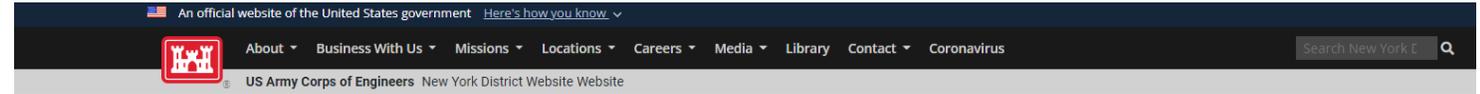


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Draft Report September 2022

The Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement is available for public review. The report summarizes the study planning process, technical analyses, and alternative plans - including the Tentatively Selected Plan.

The [NY/NJHATS Study StoryMap](#) is an interactive platform with interactive web-based content, including interactive maps, animations, renderings, and summaries.

[Readers Guide](#)

[Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement](#)

Appendix A: Environmental

- [Sub-appendix A1: Endangered Species Act \(USFWS\)](#)
- [Sub-appendix A2: Endangered Species Act \(NOAA\)](#)
- [Sub-appendix A3: Essential Fish Habitat](#)
- [Sub-appendix A4: Coastal Zone Management Act](#)
- [Sub-appendix A5: Clean Water Act](#)
- [Sub-appendix A6: Clean Air Act and Greenhouse Gas](#)
- [Sub-appendix A7: Coastal Barrier Resources Act](#)

NY & NJ Harbor & Tributaries Focus Area Feasibility Study (HATS)



Coastal storms have severely impacted the North Atlantic Coast of the United States, including the New York-New Jersey Harbor region. In response to these storms, the US Army Corps of Engineers (Corps) is investigating measures to manage future flood risk in ways that support the long-term resilience and sustainability of the coastal ecosystem and surrounding communities, and reduce the economic costs and risks associated with flood and storm events. In support of this goal, the Corps completed the North Atlantic Coast Comprehensive Study, which identified nine high-risk, focus areas on the north Atlantic Coast for further in-depth analysis into potential coastal storm risk management measures. One of the nine areas identified was the New York-New Jersey Harbor and Tributaries study area.

Upcoming Public Meeting

CONNECT WITH THE STUDY TEAM

Email: NYNJHarbor.TribStudy@usace.army.mil

Mail: Mr. Bryce W. Wisemiller, Project Manager
U.S. Army Corps of Engineers New York District
Jacob K. Javits Federal Building, Room 17-401
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Ms. Cheryl R. Alkemeyer, NEPA Lead
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Prior NY/NJ HATS Study Reports and Presentations

[Prior NY/NJ HATS Study Reports and Presentations](#)



SCHEDULE



Action/Milestone	Date
Execute Feasibility Cost-Sharing Agreement (study start)	✓ 15 July 2016
Release Interim Report	✓ 19 February 2019
Public Meetings for Interim Report	✓ March - October 2019
Delay due to lack of Federal funding	✓ February 2020 – September 2021
Federal funding resumption	✓ October 2021
FCSA Amendment Execution	✓ 28 June 2022
Tentatively Selected Plan Milestone	✓ 26 July 2022
Release Draft Integrated Feasibility Report and Tier 1 EIS	✓ Late September 2022 (156+ day review period)
Public Meetings for Draft Report	October 2022 – February 2023 (Additional in-person and virtual public meetings – see website for updates.)
Public Comment Closing Date	March 7, 2023
Agency Decision Milestone	June 2023
Submit Final Integrated Feasibility Report and Tier 1 EIS	January 2024*
Chief of Engineer’s Report Approval (study end)	June 2024*

* Schedule may be revised.



IN SUMMARY



- The Tentatively Selected Plan (Alternative 3B) is **preliminary** and **conceptual**
 - Considerable work remains to be done
 - Future work will be informed by and focus on issues raised by the public and agencies
- There are many resources on the study website **<https://www.nan.usace.army.mil/NYNJHATS>**
 - Draft Integrated Feasibility Report and integrated Tier 1 Environmental Impact Statement
 - Readers Guide
 - StoryMap Hub
- This is one of a series of public meetings
 - There will be in-person and additional virtual public meetings
 - Meeting information will be posted to the study website and shared via email
- ***Your feedback is an important part of the study process!***



YOUR FEEDBACK IS IMPORTANT



The Study Team is here today to answer your questions and hear your feedback (please fill out your comment cards)

Written Comments

- Send all written comments for the record via email or mail
- The public comment period closes March 7, 2023.

Mr. Bryce W. Wisemiller, Project Manager

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More Opportunities to Provide Feedback

- There will be in-person and additional virtual public meetings
- Meeting information will be posted to the study website and shared via email



Q&A SESSION



The Study Team will answer all comment card questions first, then, if time allows, open the floor to participants to verbally ask questions and provide feedback.

Ground Rules

- Be respectful of participants and the Study Team
- Please raise your hand so we can collect and collate the comment cards
- If there is time for verbal questions & answers, please ask one question to allow time for others to ask their questions



QUESTIONS?

STUDY WEBSITE

[HTTPS://WWW.NAN.USACE.ARMY.MIL/NYNJHATS](https://www.nan.usace.army.mil/nynjhats)

STORYMAP PORTAL

[HTTPS://HATS-CENAN.HUB.ARCGIS.COM/](https://hats-cenan.hub.arcgis.com/)



NON-FEDERAL PARTNERS



**Department of
Environmental
Conservation**

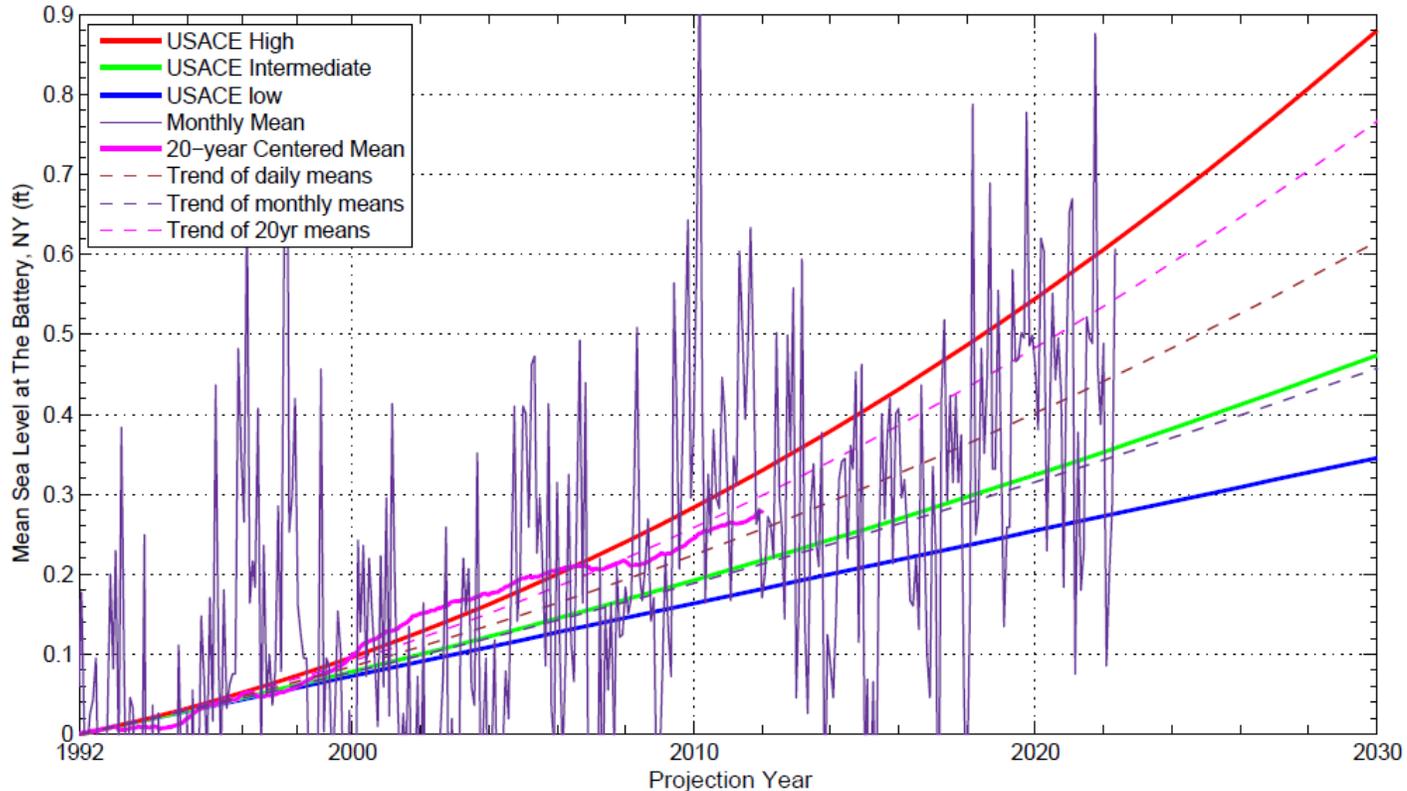
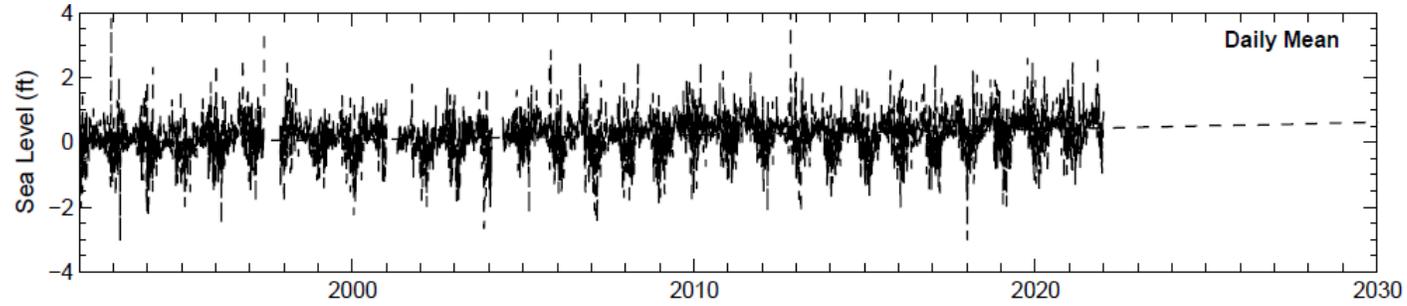


**Department
of State**

NYC Mayor's Office of Climate &
Environmental Justice



USACE RELATIVE SEA LEVEL CHANGE PROJECTION FOR THE BATTERY COMPARED TO NOAA SEA LEVEL MEASUREMENTS



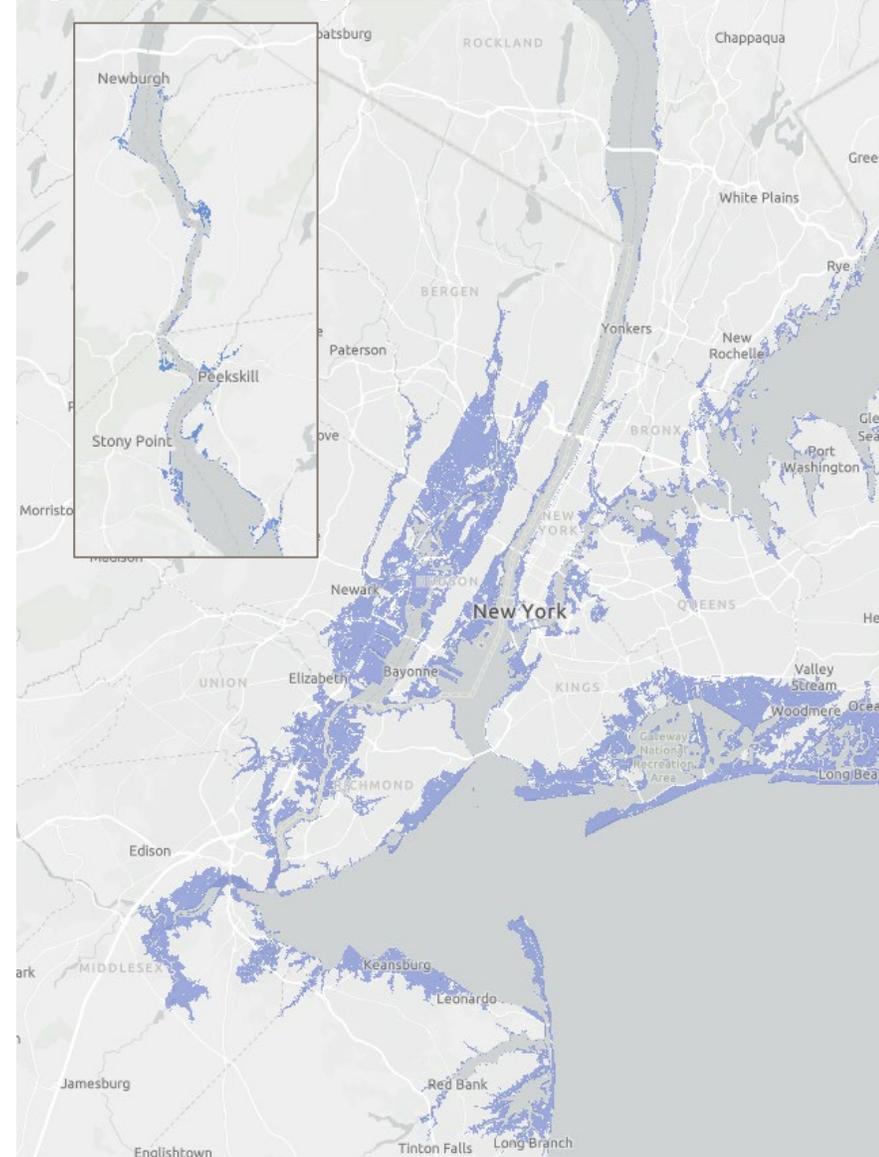


FUTURE WITHOUT-PROJECT (FWOP) CONDITION



Assumptions

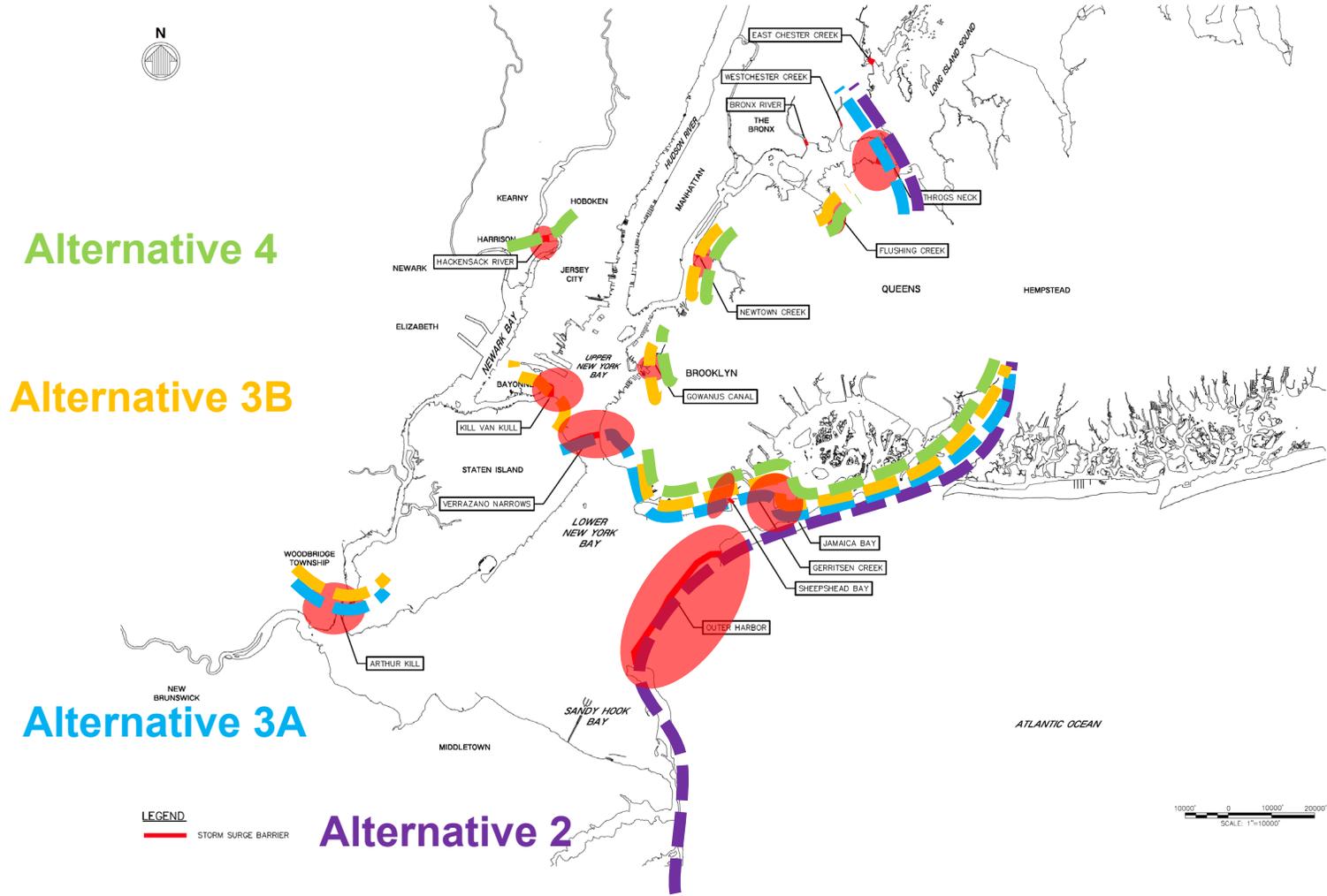
- Investments in coastal storm risk management / resiliency projects will continue
 - Federal, state, local government investment
 - Private investment
- Relative sea level rise over time
 - Used USACE intermediate projection for comparing plans in Draft Report
 - Considering ALL USACE sea level rise projections in future study plan formulation



1% flood extent (with intermediate RSLC)



COMPOSITE: ALTERNATIVE PLANS SHOWING STORM SURGE BARRIER LOCATIONS CONSIDERED



- All alternative plans will include nonstructural measures, as feasible, for areas with unaddressed coastal storm risk
- All alternative plans will include natural and nature-based features where applicable and feasible

Alternative 5 (*shore-based measures only*) not shown in figure



PLAN FORMULATION ITERATIONS



First round of alternatives screening:

- Reflected in Interim Report – released February 2019)
- Focus on identifying scale
- Main decision factor: NED benefits
- Outcome: Alternatives 3A, 3B, 4 were (and are still) best performing

Second round of alternatives screening:

- Reflected in Draft Report now released
- Differentiate among Alternatives 3A, 3B, and 4
- Main decision factors: RSLC, SSB gate operational assumptions, environmental and navigational considerations, refining benefits
- Considered all benefit registers but primarily used national economic development for selection
- Results are presented in the draft integrated feasibility report/EIS

Developing and Optimizing Recommended Plan (done after public review of the Draft Report)

- Main decision factors:
 - Sizing of measures in TSP to maximize net benefits
 - Refine balance between each SSG operation/closing criteria with RRFs, as applicable
 - Adjust alignments for NED, OSE, and EQ considerations
- Results will be presented in the final integrated feasibility report/EIS (2024)



PROJECT COSTS (INTERMEDIATE RSLC)



Alternative	Construction Duration (years)	Years of Full Benefits*	First Costs (not including contingency)	Contingency	OMRR&R and IDC (PV)	Total (Present Value)**
2	32	32	\$70.6B	\$41.7B	\$37.3B	\$150.2B
3A	24	40	\$48.9B	\$28.0B	\$18.7B	\$95.7B
3B	14	50	\$35.6B	\$17.1B	\$23.5B	\$76.2B
4	14	50	\$28.8B	\$14.2B	\$19.4B	\$62.51B
5	5	50	\$10.1B	\$5.9B	\$9.8B	\$25.8B

* - USACE policy only allows a maximum of 50 years of benefits in the economic evaluation, but the alternatives and measures are planned for permanent implementation with an at least one-hundred-year planning horizon

** - Adaptation costs for higher sea level rise projections are under refinement and have not been included in the total cost estimates at this time