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

Briefing to Newtown Creek Community Advisory Group on Tentatively Selected Plan

New York District October 19, 2022











AGENDA

- 1. Study Background
- 2. Alternative Plans Evaluated
- 3. Tentative Plan Selection
- 4. Schedule / Next Steps



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



NON-FEDERAL PARTNERS





Department of Environmental Conservation







Mayor's Office of Climate & Environmental Justice





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



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 CSRM 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 DRSAA funds.
- Study Scope: WRDA 2020 includes study specific language

ALTERNATIVES

- 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
- Draft Feasibility Report and integrated Tier 1 Environmental Impact Statement Released for extended public day review with meetings planned throughout area (comment closing date January 6, 2023). See <u>WWW.NAN.USACE.ARMY.MIL/NYNJHATS</u> for dates, times and locations of public in-person meetings. (virtual meetings starting October 24th, 27th and November 5th)









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



FUTURE WITHOUT-PROJECT (FWOP) CONDITION

Assumptions

- Investments in coastal storm risk management / resiliency projects will continue
 - Federal, state, local government investment (tracked by FEMA SRIRC database)
 - Private investment
- Relative sea level rise over time
 - Using USACE intermediate projection for plan formulation BUT will consider other projections







ALTERNATIVE 3B WITH OTHER COASTAL STORM RISK MANAGEMENT EXISTING AND UNDERWAY PROJECTS







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







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





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COMPOSITE: ALTERNATIVE PLANS SHOWING STORM SURGE BARRIER LOCATIONS





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

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



IMPLEMENTING STORM SURGE BARRIERS







ASSOCIATED FEATURES (RISK REDUCTION FEATURES AND INDUCED FLOODING-MITIGATION FEATURES)











94.1% Study Area at Direct Risk Benefited





ALTERNATIVE 3A



73.7% Study Area at Direct Risk Benefited



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TENTATIVELY SELECTED PLAN: ALTERNATIVE 3B



62.75% Study Area at Direct Risk Benefited

Alternative 3B includes:

- Jamaica Bay and Southern Brooklyn Storm Surge Gate and Shoreline-based Measures
- Kill Van Kull and Arthur Kill Storm Surge Gates with Shoreline-based tie-ins
- Storm Surge Gates and Shoreline-based tie-ins for Gowanus, Newtown and Flushing Creeks
- Shoreline-based measures for Lower Manhattan, East Harlem, and Jersey City
- Numerous other complementary structural, nonstructural, and NNBFs (not shown here) to complement measures listed above and better manage remaining residual

risk (many under development & evaluation)









33.1% Study Area at Direct Risk Benefited





ALTERNATIVE 5

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2.6% Study Area at Direct Risk Benefited





PLAN FORMULATION ITERATIONS



First round of alternatives screening: 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: 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

TSP Optimization (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 (early 2024)



DRAFT TIER 1 ENVIRONMENTAL IMPACT STATEMENT



Existing Conditions

Environmental Consequences

			Impact Rating Definitions		
Habitht	and the second sec		Impact Rating	Description	
Loss/Change	Air Quality	Water Quality	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.	
Transportation Historic		Temporary	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 necessarily	
	Properties	impacts	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.	
Protected Contaminated Reg		Recreation	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.	
	Contraction of the second		No Impact - 1	There would be no impacts to the resource because the resource would not be affected.	
 Defining Scope of Direct, Indirect, and 			 Incorporating Cooperating Agency and 		
Cumulative Impacts - BROADLY			Stakeholder Input		

- Estimating Beneficial Environmental Effects
- Estimating Mitigated Impacts
- Identifying Unmitigable Impacts

YOU ARE HERE!

**NAN is employing a tiered-NEPA approach in which the Tier 1 EIS will demonstrate full environmental compliance with NEPA and environmental laws for the "actionable measures" of the recommended plan where the impacts and designs are well understood and minimal changes are anticipated during the preconstruction, engineering design (PED) phase. For measures where some uncertainty remains on the design of the measure or additional modeling is needed to fully understand and quantify the effects of the action, an overview of the worst-case scenario of impacts will be provided to give the decision maker a full understanding of the possible impacts. For these measures, additional NEPA will be completed during PED to more accurately disclose the impacts based on refined designs and updated modeling.



PROJECT COSTS (INTERMEDIATE RSLC)



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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





PROJECT BENEFITS (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.





Kill Van Kull Storm Surge Barrier



Arthur Kill Storm Surge Barrier





Note Risk Reduction Features behind Storm Surge Barriers





Residual Risk Features – Northern New Jersey



Residual Risk Features – NJ & SI







East Harlem and Bronx Area



Flushing Bay Area



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Red Hook and Gowanus Creek Area

Newtown Creek Area

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NEWTOWN CREEK STORM SURGE BARRIER AND SHORELINE BASED TIE-IN DETAILS

- 130 ft. wide Sector Gate Storm Surge Barrier (+17 ft. NAVD88 crest elevation) with seawall tie-ins to shore
- 16,178 ft. of shoreline-based tieins including floodwalls, levees, pedestrian & vehicle gates, elevated promenades, and seawalls
- May need extension of NYCDEP Wastewater Treatment Plant discharge to outside Storm Surge Barrier Known contamination issues

Jersey City Area

Lower Manhattan Area

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South Brooklyn and Jamaica Bay Area

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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.

Start Here

The <u>NYNJHAT Study StoryMap</u> 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

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

Library Contact - Coronavirus

Media 👻

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.

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	Cctober 2021
FCSA Amendment Execution	28 June 2022
Tentatively Selected Plan Milestone	26 July 2022
Release Draft Integrated Feasibility Report and Tier	Late September 2022 (90+ day review
1 EIS	period)
Public Meetings for Draft Report	October – December 2022 (virtual in October, in
	person at locations TBD in November-December)
Public Comment Closing Date	January 6, 2023
Agency Decision Milestone	April 2023
Submit Final Integrated Feasibility Report and Tier	January 2024*
1 EIS	
Chief of Engineer's Report Approval	June 2024*

* Schedule may be revised due to actual federal funding resumption shift in 2022

IN SUMMARY

- Draft NY & NJ Harbor and Tributaries Coastal Storm Risk Management Feasibility Report and integrated Tier 1 Environmental Impact Statement has been released for public review
- Tentatively Selected Plan is Alternative 3B
- Study has EXTENDED Public and Agency Review Period through remainder of calendar year
- Public Meetings
 - Virtual in October & early November (October 24th 10:00-12:00, October 27th 6:00-8:00 PM, and November 5th 10:00-12:00)
 - In-Person Meetings at multiple locations around the vast study area in November and December (locations, dates and times will be posted on website listed below)
- Public Comment Period Closes January 6, 2023 (but there will be future opportunities also for public engagement and comment)
- The Draft Report and meeting updates are and will be posted to website: <u>www.nan.usace.army.mil/nynjhats</u>
- USACE has also posted an Interactive Story Map Portal for interactive viewing of Tentatively Selected Plan and the other alternatives (<u>https://hats-cenan.hub.arcgis.com/</u>)
- Considerable work remains to be done on the study
- Future study work will be informed and focused on issues raised by public and other agencies

QUESTIONS?