Sierra Club, NYC Feb 15, 2023

Sustainability Series:

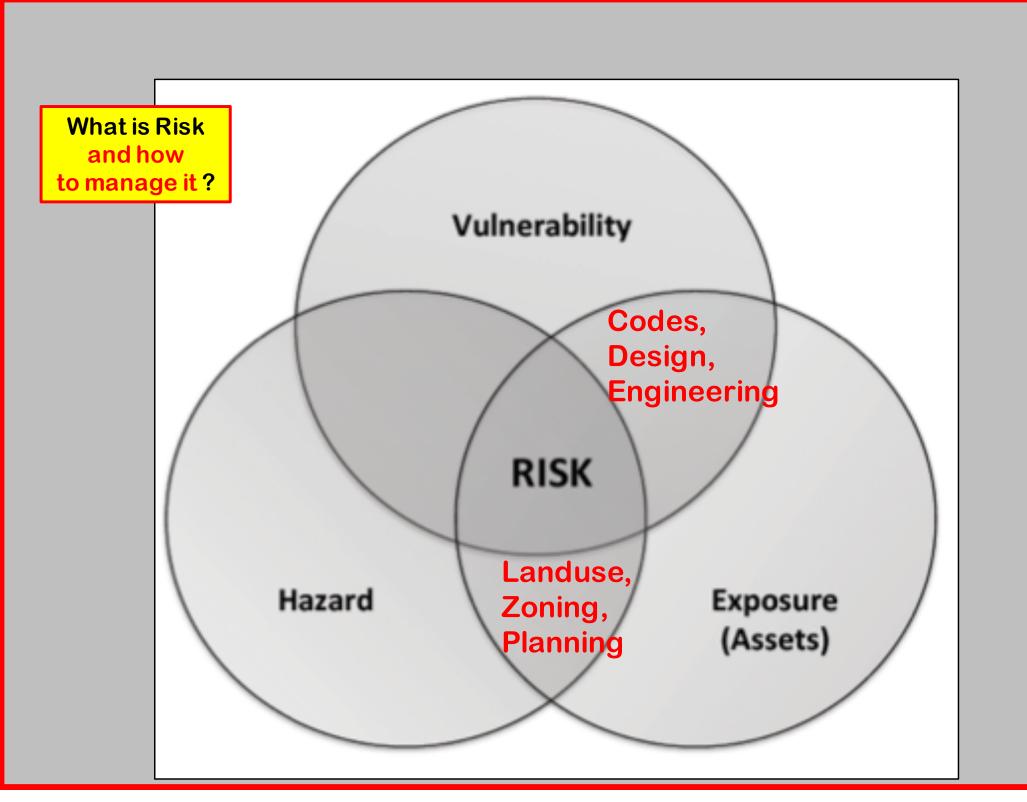
The Future of Coastal Flood Risk Management in NYC:

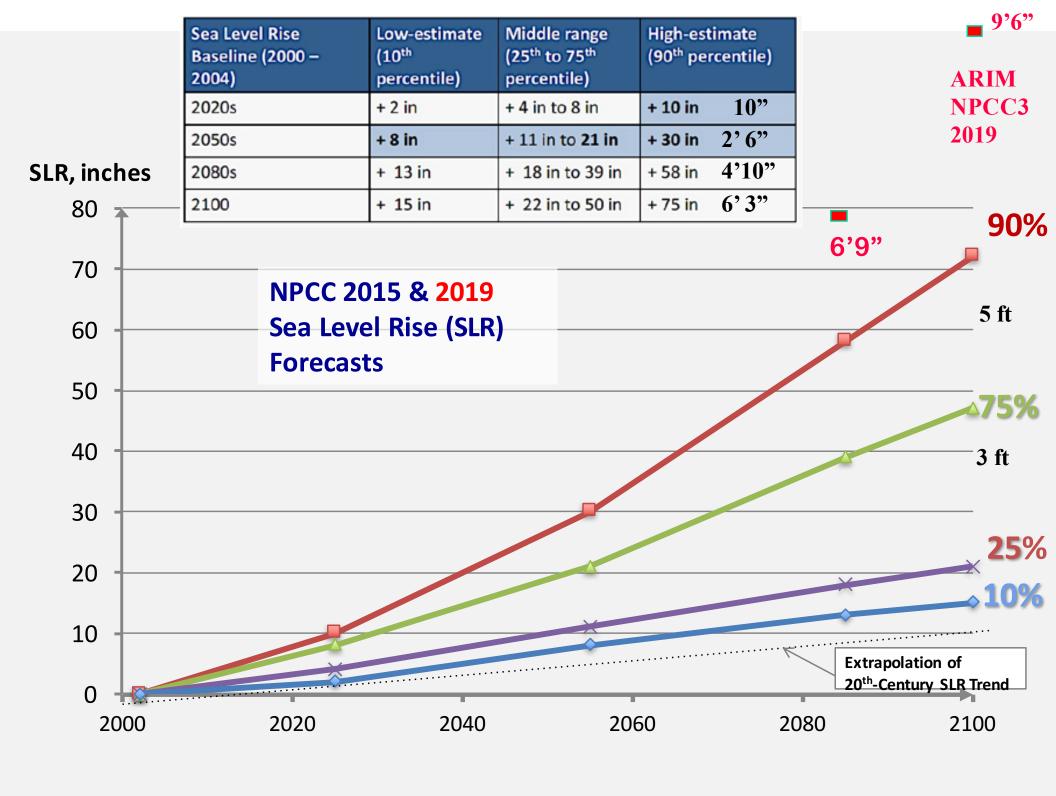
Basic Climate Science and Comments on the USACoE H.A.T.S. Alternatives 2 vs. 3B:

Klaus H. Jacob

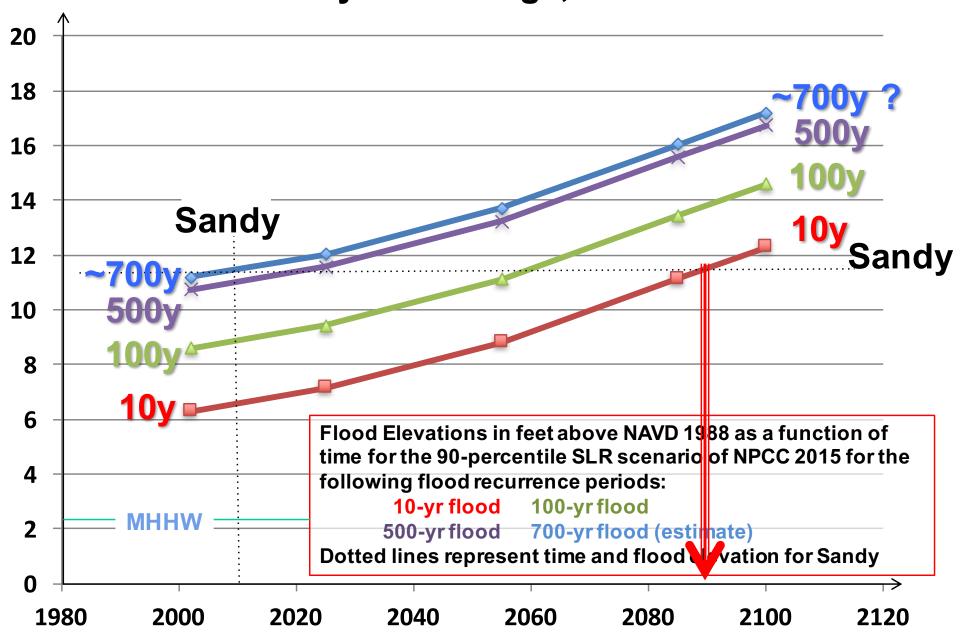
Topics:

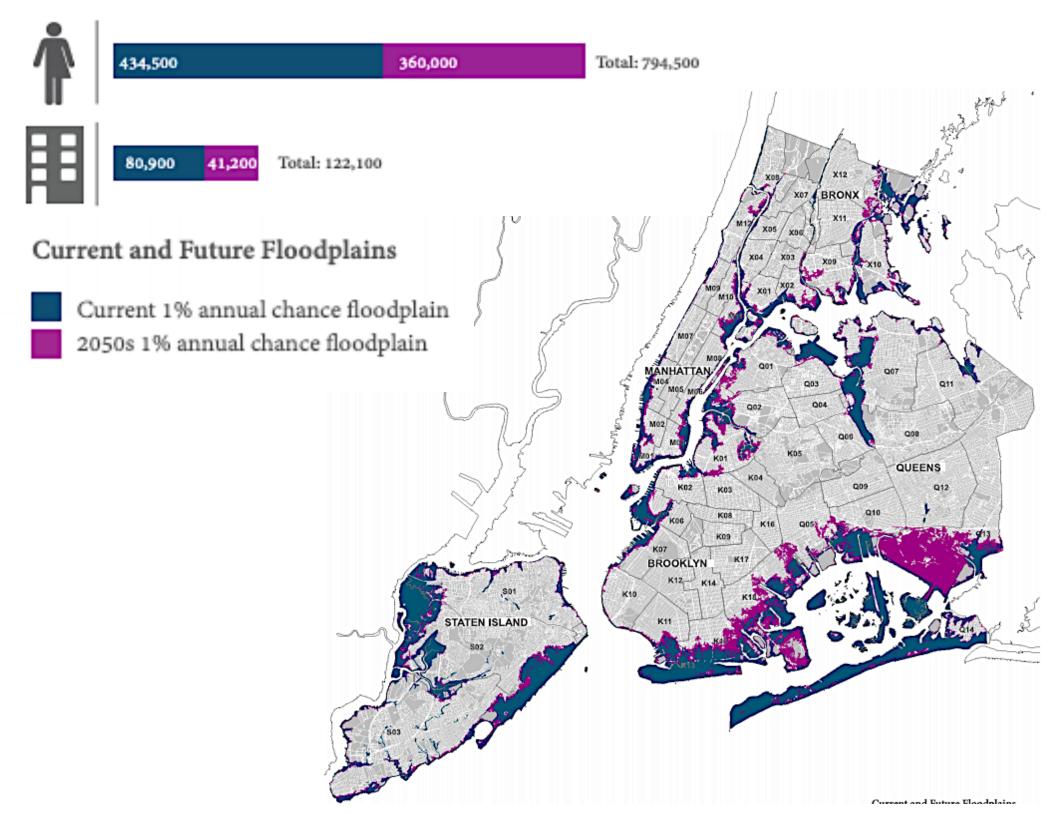
- Climate Change Adaptation and Risk Management (Risk = Hazards x Assets x Vulnerability); => Sustainable Resilience.
- 2. NYC Metro Region (including Hudson Valley) is at Risk from Storm Tides (ST) that will be highly amplified (in 2100 by Factors 10 to 70) by Sea Level Rise (SLR).
- 3. The Assets at Risk just in NYC, if unprotected, will almost double by about 2100 by the combination of ST and SLR.
- 4. Comments on USACoE HATS Alternatives 2 vs. 3B (Updated 3B = Tentative Selected Plan = TSP).
- 5. Summary and Conclusions.

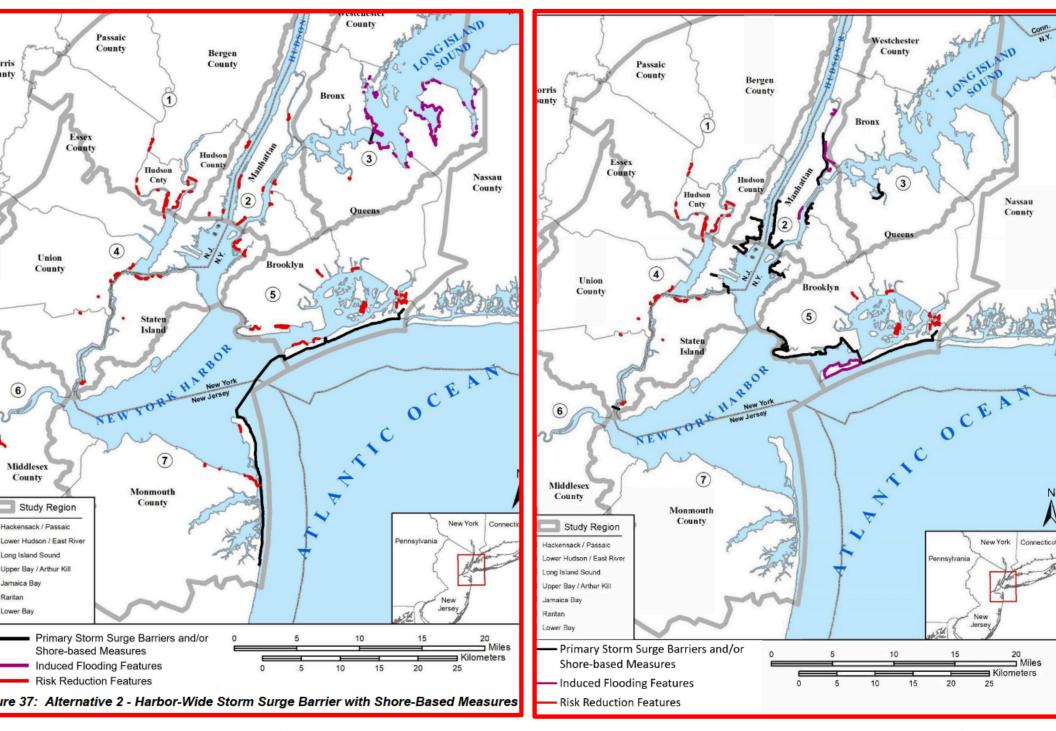




Storm Surge Elevations in feet above NAVD 1988 at Battery Tide Gauge, NYC.







Alternative 2: \$120B?

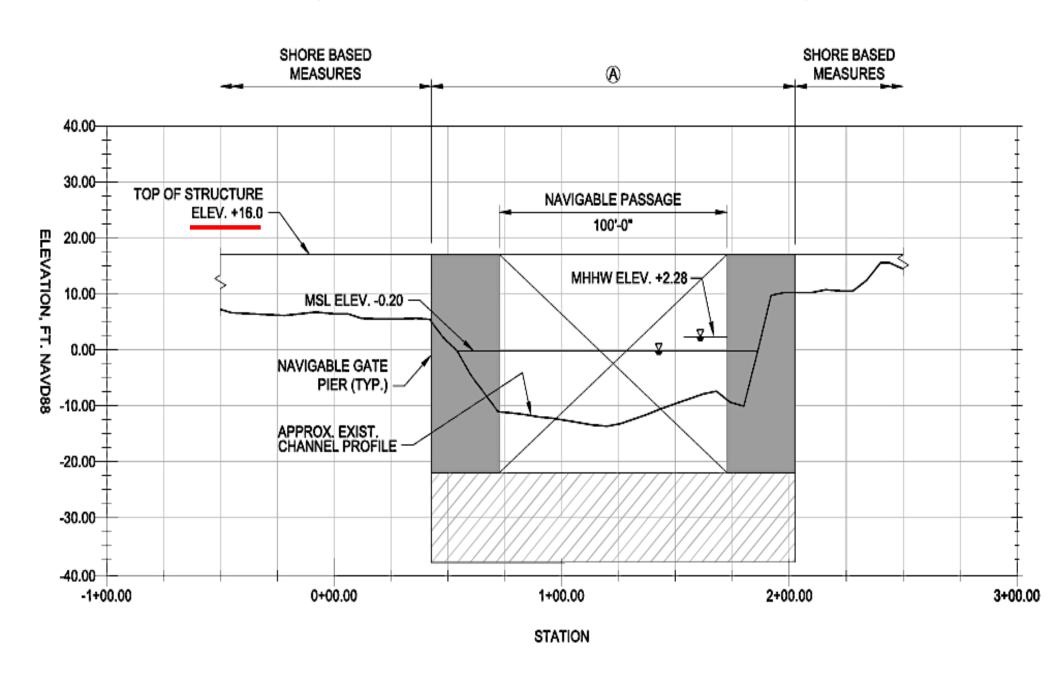
TSP: (Updated) Alternative 3B: \$62B

YORK-NEW JERSEY HARBOR AND TRIBUTARIES STUDY USACE (Low,Intermediate,High SLR) at The Battery NY1 (NPCC, 2015) (90,75,25,10 % exceedance) 0.05 18 0.1 NJ² (SRCC 2020) Low Emissions (95,83,50,17,5 % exceedance) NJ² (SRCC 2020) Moderate Emissions (95,83,50,17,5 % exceedance) 0.5 NJ² (SRCC 2020) High Emissions (95,83,50,17,5 % exceedance) 16 NOAA Observed Historical Monthly Average RSLC relative to current epoch (1992), 20 30 50 60 **NPCC** 90% 100-year Planning Horizon 80 50-year Economic Period 90 **ACoE Intermed SLR** 99 2070 2080 2090 2100 2150 2030 2060 Projection Year NOTE: Probabilities, where shown, depend on emissions scenario and methodology used by study. USACE scenarios correspond to estimates based on 0.184m, 0.5m, and 1.5m global eustatic sea level rise by year 2100. ¹ NPCC percentiles are based on addition of individual components contributing to SLR at corresponding percentile NJ projections are based on a conservative compilation of several sources for 'low' and 'high' emissions scenarios

Figure 24: Comparison of Relative Sea Level Change Projections

GOWANUS CANAL STORM SURGE BARRIER

(LOOKING NORTH, GATES IN THE CLOSED POSITION)



Christopher Street



Rendering of Initial Proposal



Proposed During Storm Condition

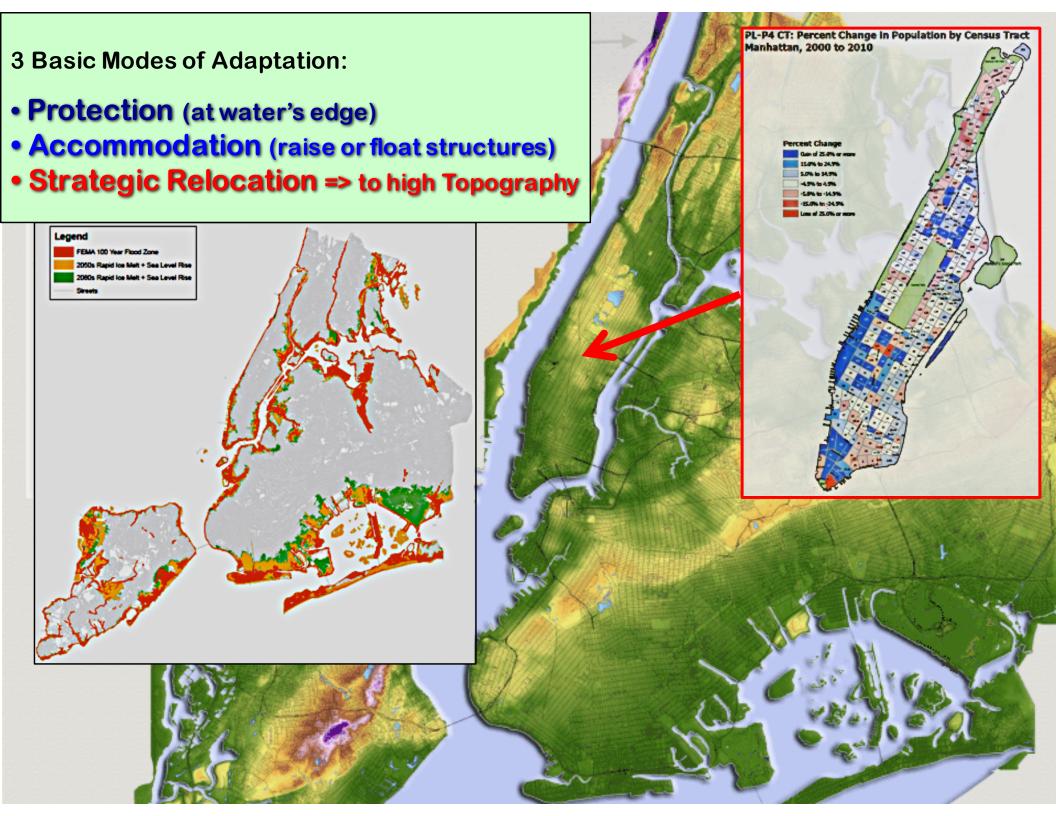


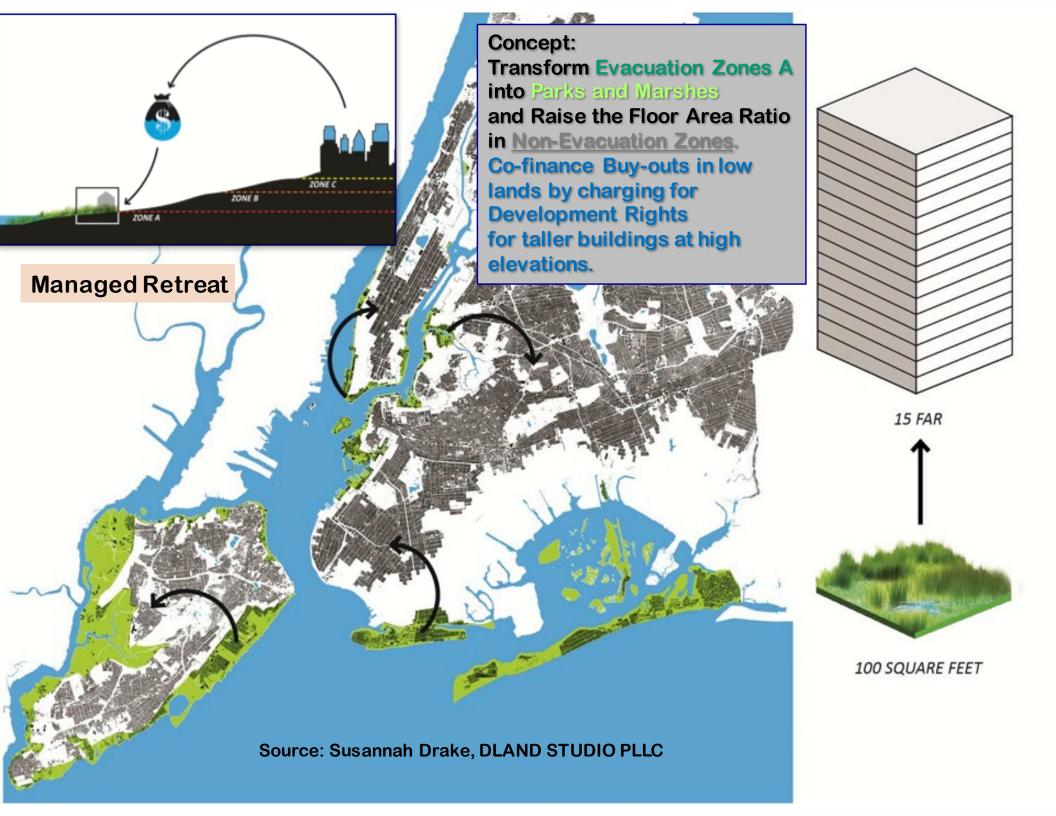
Lower Manhattan Area





https://tribecacitizen.com/2023/02/03/armycorps-has-plans-to-build-a-wall-down-the-westside/



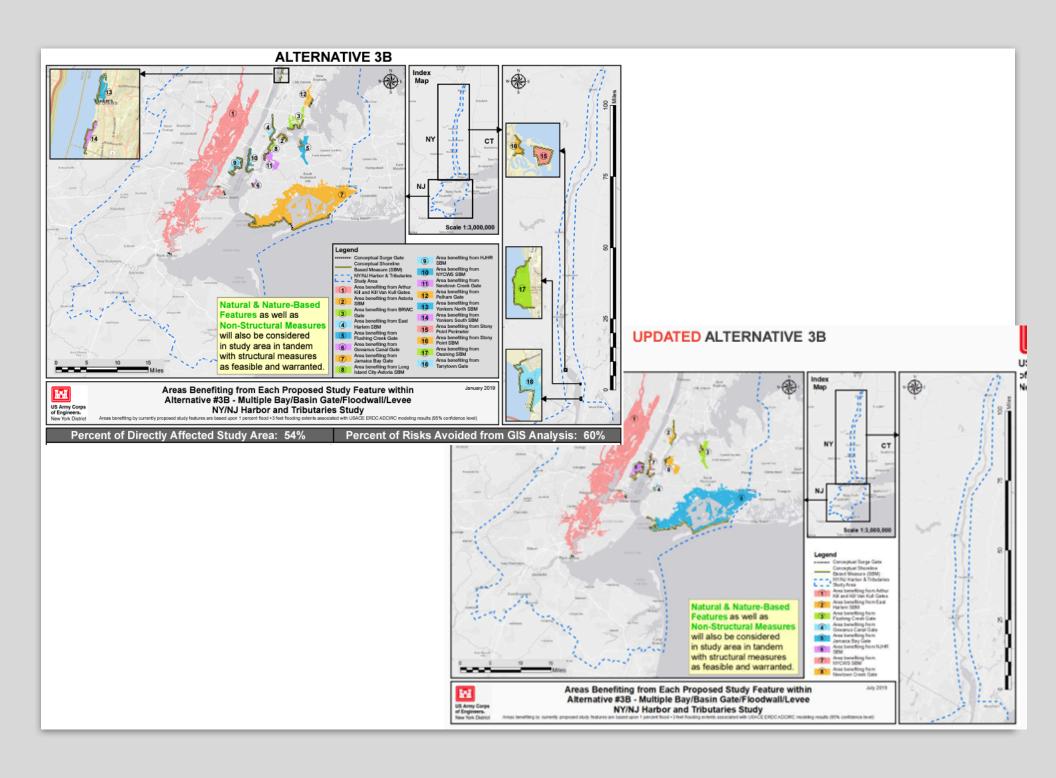


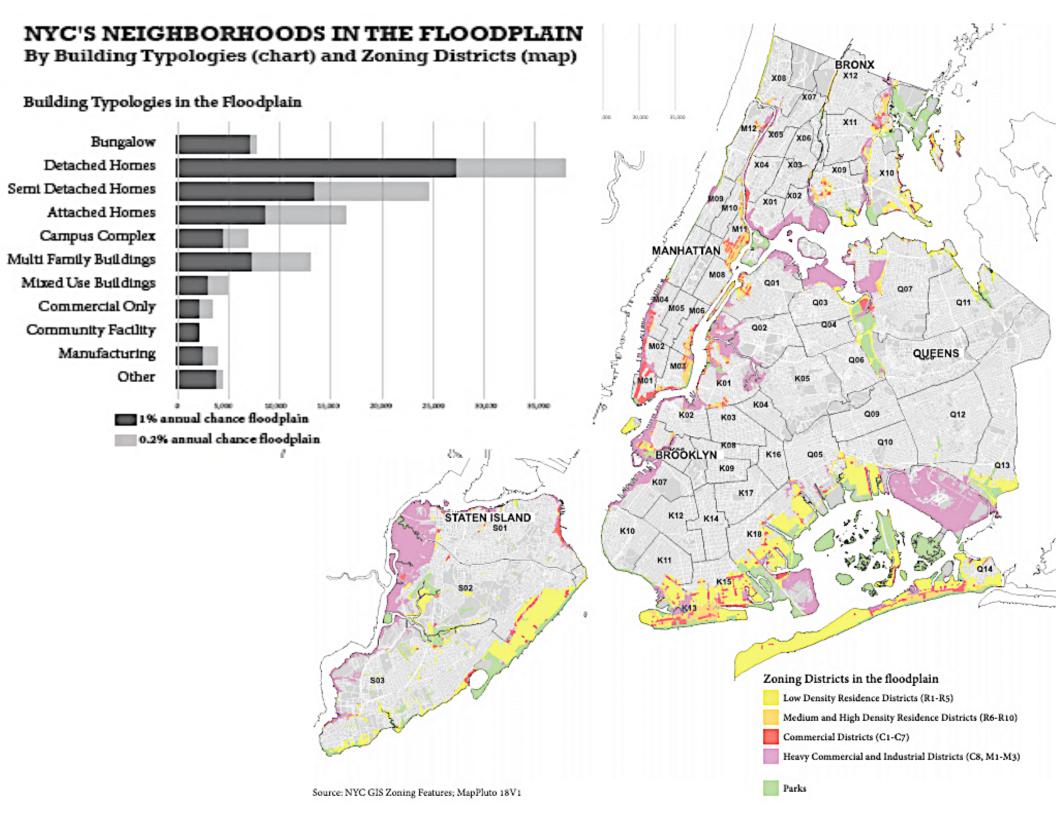
Summary for NYC Metro Region

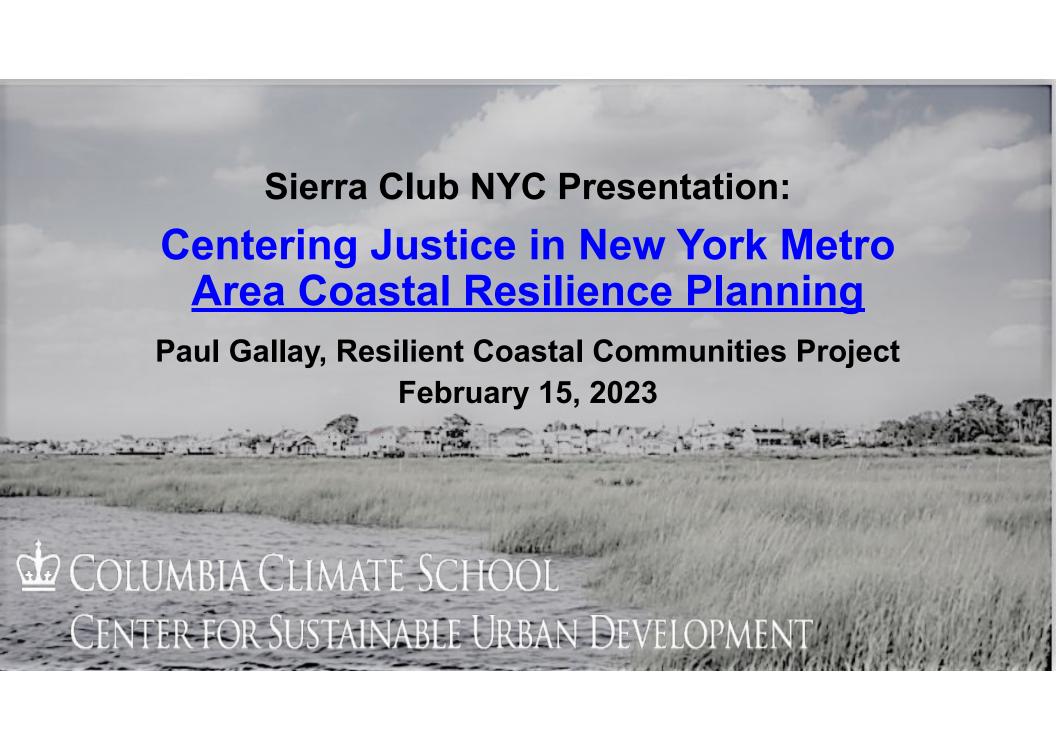
- NYC & Hudson Valley are highly vulnerable under <u>current</u> climate conditions
- Climate Change & Sea Level Rise will rapidly amplify future coastal storm flood risks. => Global Emission Cuts for <2 degrees C crucial.
- Protection by Barriers (Alt. 2) is effective and useful against Storm Surge beyond 2100, but against SLR only for limited time (<2100?). Alt. 3B is designed only for 1%/y (100y) storms and modest SLR to 2050. It leaves many communities in NYC and in the Hudson Valley unprotected. Both Alternatives (2 and 3B) only postpone transformative measures (=> Intergenerational Injustice). Use cost difference between Alt. 2 and 3B towards preparing for Managed Retreat
- Strategic Relocation (Managed Retreat) to higher ground is the only sustainable adaptation strategy (>2100). => Comprehensive Plan with Densification at High Elevations (Rezoning). Financing, starting NOW!
- Transformative, <u>truly sustainable</u> solutions require substantially higher Federal, State, City & Private Sector financing, & Political Will.



Timing can be crucial!!.







Resilient Coastal Communities Project

- Partnership with the NYC Environmental Justice Alliance (NYCEJA)
- 8-person core team; 22-person advisory board
- RCCP addresses the challenges of coastal resilience through:
 - Iterative engaged research
 - Support for community empowerment in public planning
 - Workshops, conferences & other convenings
- Advances Columbia's "Fourth Purpose"





Plans to Strengthen Social Cohesion: What Neighborhoods Facing Climate-driven Flood Risks Want From Resilience Planning

Paul Gallay, Victoria Sanders, Annel Hernandez, Jacqueline Klopp, Bernadette Baird-Zars, and Lexi Scanlon



Read our report – it's just one of the many things we've done

The Wicked Problem of Climate-Induced Coastal Flooding

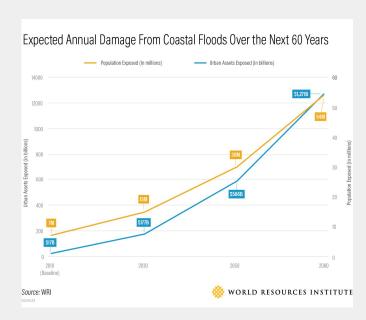
Multiple Risks, Varying Goals

Flood protection measures must address three distinct problems:

- Storm surge (Superstorm Sandy)
- Stationary downpours (Hurricanes Ida, Henri), and
- Sea Level Rise (1-2 feet from 2000-2050 in metro NYC)

At the same time, flood protection planning must address widely varying and potentially competing goals, including:

- Protecting Public Health and Safety
- Safeguarding Natural Systems and Biodiversity
- Preserving Access to Waterfronts
- Protecting Community Character and Property, and
- Redressing Past Inequality and Building Social Cohesion



The Number of People Affected by Floods
Will Double Between 2010 and 2030

RCCP Research Project:

Building Partnerships for Inclusive Climate Resiliency

Research with 10 environmental and climate justice organizations in NY/NJ*

- Interviews in Spring 2022
- Follow up consultation to ensure accountability, trust and accuracy
- Working Paper, Journal Submission, Presentation at "Sandy + 10"



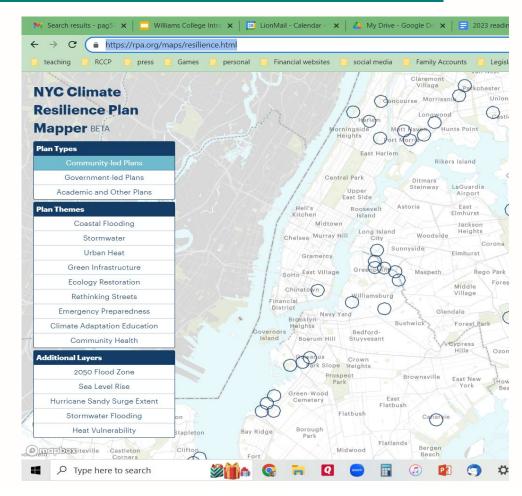
Sandy + 10: Resilience, Equity and Climate Justice

* El Puente, GOLES, Guardians of Flushing Bay, Ironbound Community Corporation, Newtown Creek Alliance, New Jersey Environmental Justice Alliance, RISE, Staten Island Urban Center, The Point CDC, UPROSE.

RESEARCH FINDINGS

COMMUNITY EXPERTISE IS UNIQUE AND ESSENTIAL

- 1. Communities have knowledge agencies lack
- 2. Many community-based groups already have sophisticated plans
- 3. Communities are frustrated yet still want to collaborate
- 4. Most communities feel they have little access to agency leaders and have some mistrust



FINDINGS

NY/NJ COMMUNITIES UNDERSTAND AND ARE READY TO EXPLAIN - HOW ISSUES CONNECT

- 1. How flood risks compound with other risks- heat, food, rental insecurity, etc.
- 2. How coastal flooding intersects with runoff, rainfall, storms, pollutants, etc.
- 3. <u>And</u> how the historic location of industry, lack of green areas, redlining, etc. lives on in their areas.

....yet funding and engagement remains fully siloed - not based in community priorities



UPROSE, 2022

RECOMMENDATIONS: COMMUNITY EMPOWERMENT & HATS

ADDRESS BARRIERS TO CO-PLANNING

- -Revise timetable and strategy for HATS public engagement
- Dedicate financial support to empowerment
 - i. Provide funding to support community participation
 - ii. Dedicate staff to working with organizations to share expertise and support capacity building
- Reform "public comment" process to facilitate iterative dialogue and foster co-planning

RECOMMENDATION: TAKE A HOLISTIC APPROACH

FOSTER SOCIAL COHESION, NOT JUST "RESILIENCE"

- 1. Multiple types of flood risk and broader infrastructure issues must be addressed equitably
- 2. Recognize and frame intersectionality within communities
- 3. Adopt holistic lens of racial, economic, and ecological impact and equity, consistent with the Biden Administration's Justice40 program and March 2022 Army Corps Guidance

NEW YORK'S

CLIMATE LEADERSHIP and

COMMUNITY PROTECTION ACT

JUSTICE 40

Reducing Coastal Flood Risk: What Success Looks Like

The Best Solutions Are Built in Layers, by:

- Expanding "Green Infrastructure"
- Restoring And Expanding Wetlands And Other Natural Areas
- Preventing Development In Sensitive Areas Or Moving Out Of Unsafe Areas
- Using Waterfront Barriers, Where Needed
- Elevating Or Flood Proofing Existing Structures

Necessary Conditions for Equitable and Effective Coastal Resilience Planning

- Is there a strong legal framework requiring collaboration?
- Is there agency cooperation?
- Is there funding for effective community participation?
- Have agreed-upon goals been established?
- Is sufficient time being made available to plan collaboratively?
- Are provisions in place for continuing engagement, after plans are made and under construction?

U.S. ARMY CORPS OF ENGINEERS

NY-NJ HARBOR AND TRIBUTARIES STUDY

REBUILD BY DESIGN

Sierra Club February 15, 2023

UNDERSTANDING THE USACE HATS PROCESS + PROPOSAL

HAT STUDY

TENTATIVELY SELECTED PLAN

GETTING TO KNOW THE PROPOSED MEASURES

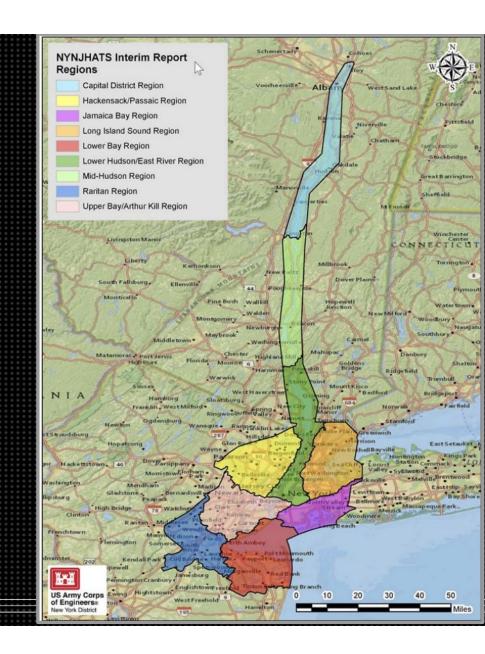
USACE TIMELINE & GETTING INVOLVED

WRITING EFFECTIVE COMMENTS



NY-NJ HARBOR AND TRIBUTARIES STUDY AREA

- Study authorized in 2016 by Congress
- Address coastal flood risk
 - 100-year storm + Sea Level Rise
- 2,150+ sq miles and 900+ miles of affected shoreline
- 5 Alternatives
- Tentatively Selected Plan: 3B



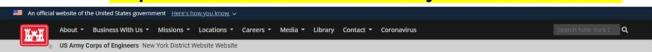




DRAFT REPORT



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



A / 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 NYNIHAT 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
- 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

Upcoming Public Meetings

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

LOCATION: New Jersey Institute of Technology (NIIT), 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

TIME: 2-4 PM and 6-8 PM (duplicate

LOCATION: Community Board 18, 1097 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 | 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**

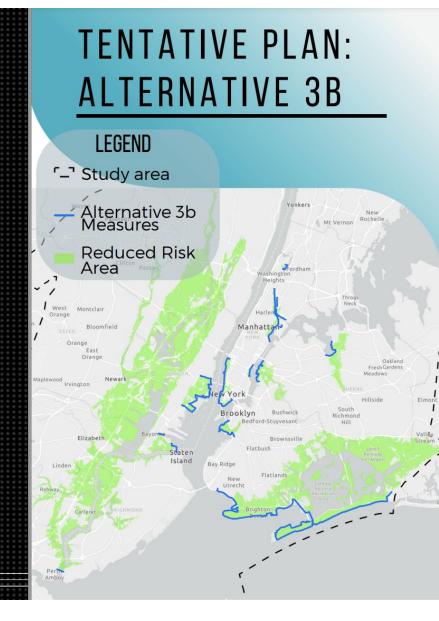
September 2022



UNDERSTANDING 3B

Mix of barriers, floodwalls, levees, pumps, nonstructural, and natural and nature-based features

- Cost \$53B
- Risk Reduction to 63% of the studied area
- Construction time 14 years
- Economically justifiable \$3.7B average annual net benefits
- Environmentally acceptable see EIS report
- 63% of census tracts in the Reduced Risk
 Areas meet the criteria for Disadvantaged
 Communities (DAC)





GET TO KNOW THE PROPOSED MEASURES



EAST RIVER AT HURON STREET (GREENPOINT) SEAWALL CONCEPT





GET TO KNOW THE MEASURES IN THE REGION



EAST RIVER AT HURON STREET (GREENPOINT) SEAWALL CONCEPT

Public Meeting Documents

Alternative 2: Future With Project Reduced Risk and Residual Risk

Alternative 3A: Future With Project Reduced Risk and Residual Risk

Alternative 3B: Future With Project Reduced Risk and Residual Risk

Alternative 4: Future With Project Reduced Risk

RIGHT HAND COLUMN OF THE USACE HATS WEBPAGE

New York Bight Ecological Model

Environmental Justice

Tier 1 Environmental Impact Statement

106th Street (Harlem) Elevated Promenade Concept

145th Street (Harlem) Elevated Promenade Concept

Coney Island Elevated Promenade Concept



GET TO KNOW THE MEASURES IN YOUR NEIGHBORHOOD

INTERACTIVE MAP

Use the map to the right to explore the HATS features. Type in an address on the Search bar and hit enter to zoom the map into the area and see if any of the alternatives are near locations you care about.

Alternative 3B is Fuchsia (TSP)

Alternative 2 is Yellow

Alternative 3A is Lime Green

Alternative 4 is Red

Alternative 5 is Light Blue

Use the *Quick Links* to the right of the map to launch into the Story Maps that interest you.





GET TO KNOW THE MEASURES IN YOUR NEIGHBORHOOD

INTERACTIVE MAP

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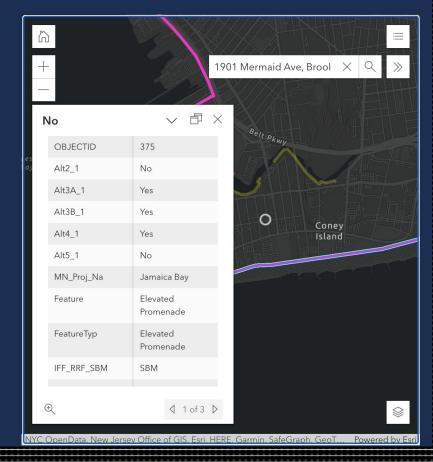
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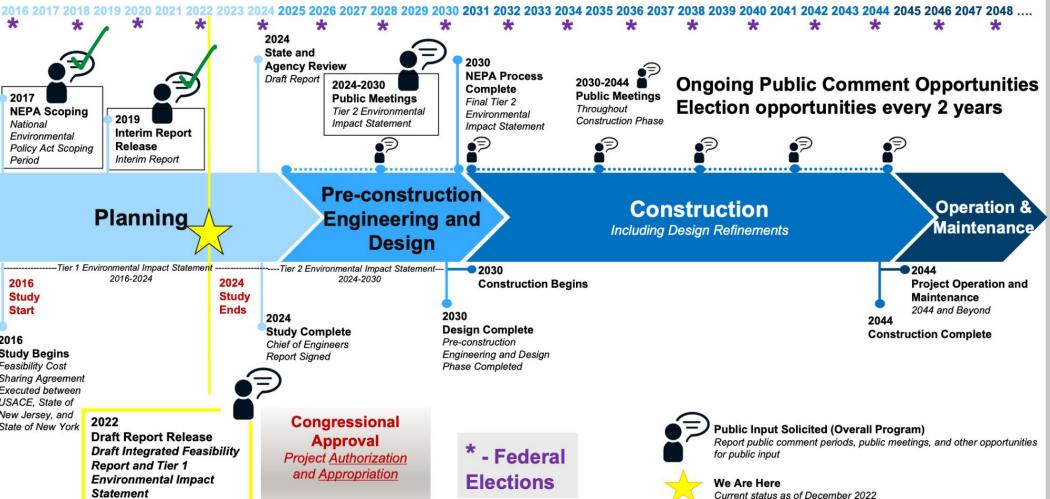






PUBLIC INVOLVEMENT OPPORTUNITIES





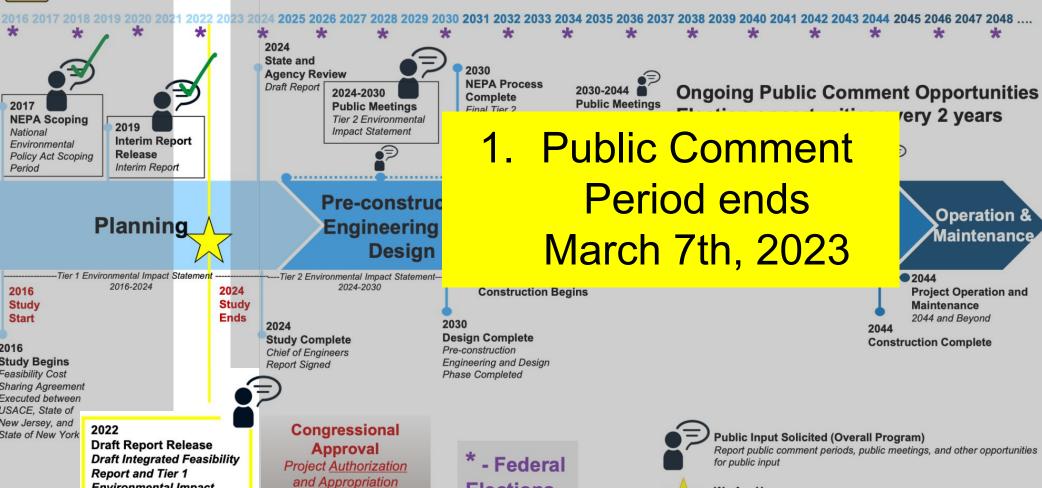


Environmental Impact

Statement

PUBLIC INVOLVEMENT OPPORTUNITIES





Elections

We Are Here

Current status as of December 2022



Report and Tier 1

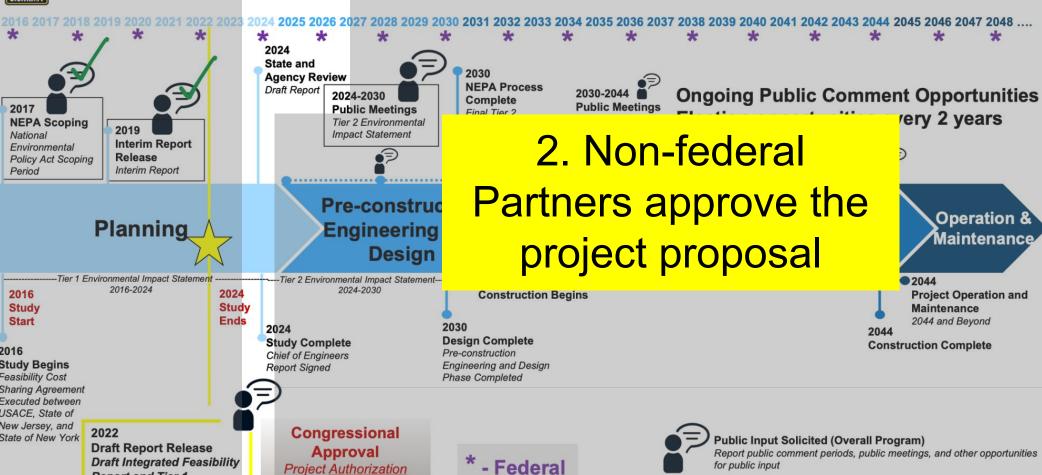
Statement

Environmental Impact

PUBLIC INVOLVEMENT OPPORTUNITIES

and Appropriation





Elections

We Are Here

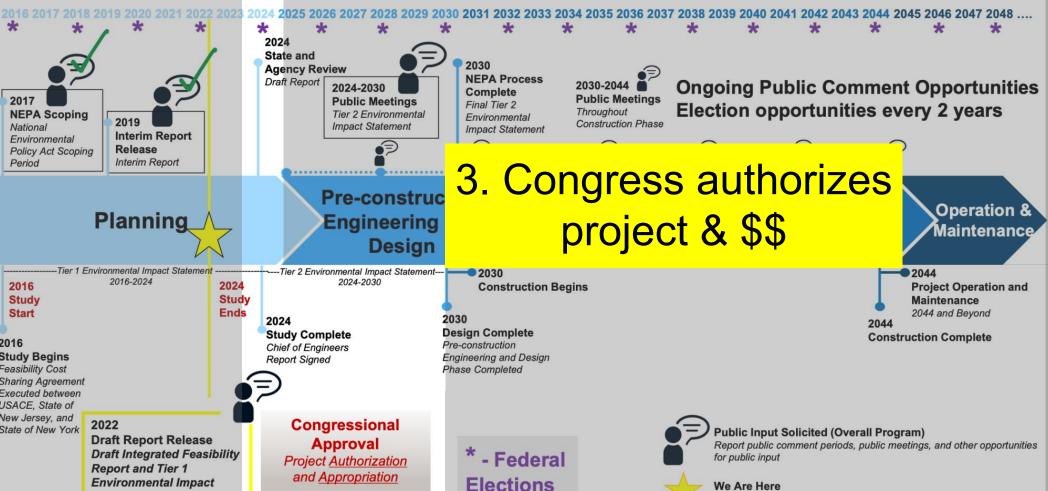
Current status as of December 2022



Statement

PUBLIC INVOLVEMENT OPPORTUNITIES





We Are Here

Current status as of December 2022

ADVOCACY TO DATE

- Robust, iterative public engagement process, responsive to the needs of communities most impacted
- Multi-hazard Approach
- Phased approach prioritizing specific areas
- Holistic lens of racial, economic, and ecological impact & equity
 - reforms to the cost-benefit analyses



GET INVOLVED

- Attend a public meeting
- Sign up for the Army Corps' email list
- Submit public comments

nynjharbor.tribstudy@usace.army.mil

Mr. Bryce W. Wisemiller, Project Manager
U.S. Army Corps of Engineers New York District,
Programs & Projects Management, Planning
Division

Jacob K. Javits Federal Building, Room 17-401 c/o PSC Mail Center 26 Federal Plaza New York, New York 10278 917-790-8307



BECOME AN EXPERT

- USACE HATS website
- Rebuild by Design HATS
 Teach-In
- Comment Writing 101
- Comment Sharing
 - This Friday, February17th 11am-12pm



Introduction	
"I am" attributes Describe your connection to the place	
Problem	
- Clear description of the issue/threat	
Why is that threat a problem? Specify what impacts that threat might have on you and your community.	
unit intercenting it have on you and you community.	
- Specify what parts/locations of the study you like	
Solution (and its benefits)	
- Simple, concise solutions	
What other ideas do you have to control flooding in your neighborhood?	
Reference other projects and studies the Corps should look at.	

Comment Writing Template for the U.S. Army Corps of Engineers New York New Jersey Harbor and Tributaries Feasibility Study, Draft Tier 1 Environmental Impact Statement

omments due March 7, 2023

Instructions: Fill out this template and submit to the U.S. Army Corps of Engineers by March 7, 2023 via enall to <u>NYUHArbor TrikStudy@wace.army.mll</u> or by mall to <u>NYUHArbor TrikStudy@wace.army.mll</u> or by mall to <u>NYUHAR Study Team</u>, Planning <u>Division</u>, U.S. Army Corps of Engineers at 26 Federal Plaza, 1.PP floor New York, NY 10279-2090. All mail post marked by March 7, 2023 will be included in the public record. For more information about the project, visit by <u>8 N Hardor E Tributaties Focus Area Feasibility Sudy (HATS) Tamm,mll).</u>

Thank you for the opportunity to submit comments on the U.S. Army Corps of Engineers (the Corps') New York New Jersey Harbor and Tributaries Feasibility Study (NYNJHATS) and Draft Tier 1

Environmental Impact Statement (EIS). 1

[Inv. work, July]

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in my neighborhood. I think the Corps' shoul



Overvie

New York New Jersey <u>Har</u>bor & Tributaries Feasibility Study



4:19 / 1:07:03





CHECK OUT REBUILDBYDESIGN.ORG FOR

- Session Recordings
- Presentation Slides
- Comment Writing 101
 Recording & Materials
- Guiding Principles for Regional Flood Infrastructure
- Resources for community organizations

rebuildbydesign.org/usace-hats/

THANK YOU!

jlawton@rebuildbydesign.org

