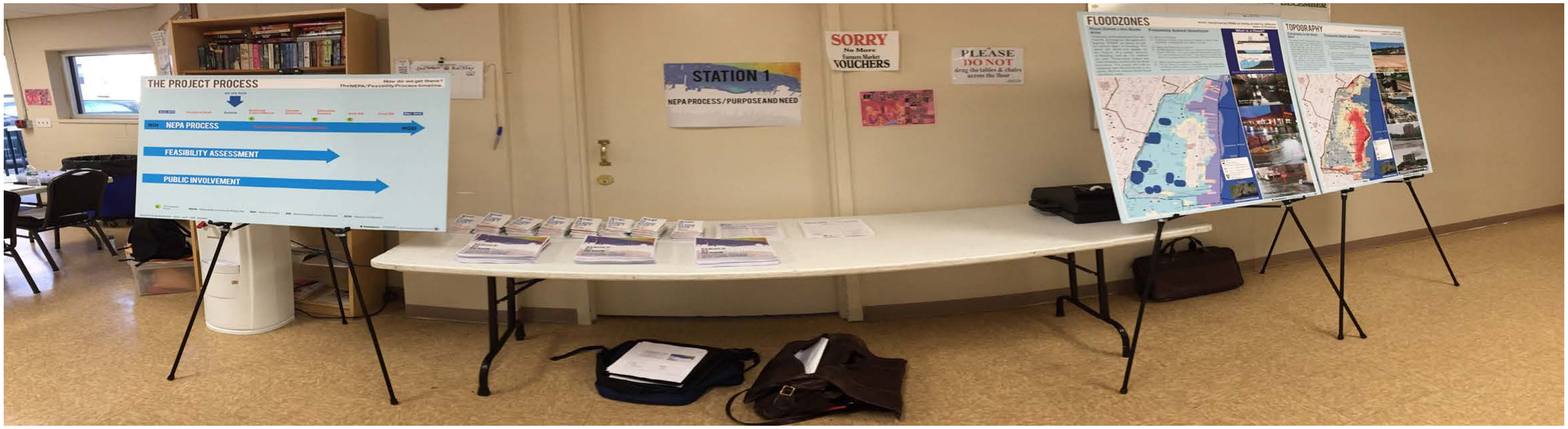

APPENDIX D: HANDOUTS

DATE	MEETING
September 24, 2015	Scoping Public Meeting
November 23, 2015	CAG Concept Meeting
December 10, 2015	Concept Screening
February, 18, 2016	Build Alternatives Meeting
April 7, 2016	Urban Design
July 28, 2016	Alternatives Analysis Workshop
*Full-size versions of the handouts can be found at www.rbd-hudsonriver.nj.gov	

SEPTEMBER 24, 2015
SCOPING PUBLIC MEETING

REBUILD BY DESIGN
· RESIST · DELAY · STORE · DISCHARGE ·
HUDSON RIVER
Hoboken Weehawken Jersey City | New Jersey

LIST OF ACRONYMS

Acronym	Meaning
BFE	Base Flood Elevation
CAA	Clean Air Act
CAG	Citizen Advisory Group
CDBG-DR	Community Development Block Grant - Disaster Recovery
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COP	Citizen Outreach Plan
CRS	Community Rating System
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EJ	Environmental Justice
ESC	Executive Steering Committee
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FR	Federal Register
GI	Green Infrastructure
HUD	U.S. Department of Housing and Urban Development
NEPA	National Environmental Policy Act

Acronym	Meaning
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHSA	North Hudson Sewerage Authority
NJDEP	New Jersey Department of Environmental Protection
NJHPO	New Jersey Historic Preservation Office
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NR	National Register
OMA	Office of Metropolitan Architecture
PANYNJ	Port Authority of New York and New Jersey
RBD	Rebuild by Design
REC	Recognized Environmental Condition
ROD	Record of Decision
SME	Subject Matter Expert
TCT	Technical Coordination Team
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service

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Rebuild by Design Hudson River: ▪ Resist ▪ Delay ▪ Store ▪ Discharge ▪

REBUILD BY DESIGN
· RESIST · DELAY · STORE · DISCHARGE ·
HUDSON RIVER
HOBOKEN WEEHAWKEN JERSEY CITY

A PROJECT TO REDUCE FLOOD RISK

Before we can construct a plan for reducing flood risk, we first need to understand if such a project is buildable, if it will work, and what the impact will be. The Feasibility Study seeks to answer the questions, **'Where and what can we build?'** and **'Will it be effective?'**, while the Environmental Impact Statement examines **'What will be affected?'** in the natural and built environments that make up the Study Area.

What's the Story?

The Federal Department of Housing and Urban Development created the Rebuild By Design competition following Superstorm Sandy in 2012 to develop ideas on how to improve the physical, ecological, and economic resilience of coastal areas following times of flood. Hoboken, Weehawken, and Jersey City were selected through the competition based on damages suffered from Sandy and their long-term historical flooding problems.

The project is being led by the New Jersey Department of Environmental Protection (NJDEP) and includes the following integrated components:

Resist —
A combination of hard infrastructure and soft landscaping features that act as barriers along the coast.

Delay —
Policy recommendations, guidelines, and urban green infrastructure to slow stormwater runoff.

Store —
Green and grey infrastructure improvements that slow down and capture stormwater.

Discharge —
Improving Hoboken's existing stormwater management system.

Where's it Happening?

The Study Area includes the City of Hoboken and extends into Weehawken and Jersey City.

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Key
About Your City
About Our Process
About You

NJDEP – New Jersey Department of Environmental Protection
EIS – Environmental Impact Statement
TES – Technical Environmental Study
DEIS – Draft Environmental Impact Statement
FEIS – Final Environmental Impact Statement
ROD – Record of Decision

What's the Point?

The point of this project is to reduce flood risk.

By understanding the unique challenges that exist in your city, we can provide solutions that not only minimize the impact of flood events on the community, but also provide benefits that enhance the urban condition.

What's happening now?

Right now we are preparing the Draft Scoping Document, which provides a roadmap to how the EIS will be developed.

How can I get involved?

You can help us in determining how best to reduce flood risk in your neighborhood. Attend public meetings and community workshops at various stages throughout the design process, and stay up-to-date by talking to your Citizen Advisory Group community leaders.

The goal is to include public input and engage the entire community in a collective effort towards protecting your city and better preparing it to respond in times of flood.

For more information about the project and future dates, visit our website at:

https://www.rbd-hudsonriver.nj.gov

What's the Plan?

Environmental Impact Statement

Concept Development

We will develop up to five flood risk reduction concepts and share them with you.

You can evaluate these concepts in a Public Meeting based on their strengths and weaknesses.

Alternatives Analysis

Following the evaluation, we will identify the three highest ranked concepts as the project's Build Alternatives, then analyze their impacts in Technical Environmental Studies (TES's).

Information will be presented to stakeholder groups and the general public.

Preparation of DEIS

The culmination of the process is the preparation of the Draft Environmental Impact Statement (DEIS). The DEIS will recommend the selection of the Preferred Alternative.

You can review the DEIS and provide comments on it in a Public Hearing.

Record of Decision

Your input will be incorporated into the DEIS, leading to the completion of the Final Environmental Impact Statement (FEIS).

We will then issue a Record of Decision, which summarizes the results of the environmental review, outlines the Preferred Alternative, and recommends mitigation measures to address the project's environmental impacts.

2015			2016		
SEPT 8	SEPT 24	OCT 9	NOV.*	FEB.*	JULY*
Notice of Intent (NOI) Published	Scoping Document Public Meeting	Scoping Document Comment Closure	Concept Screening Public Meeting	Alternatives Analysis Public Meeting	Draft EIS Public Hearing

*Notices identifying exact date, time, and location will be published at least 15 days in advance.

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WHAT IS FLOOD RISK?

REBUILD BY DESIGN
HUDSON RIVER
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· RESIST · DELAY · STORE · DISCHARGE ·

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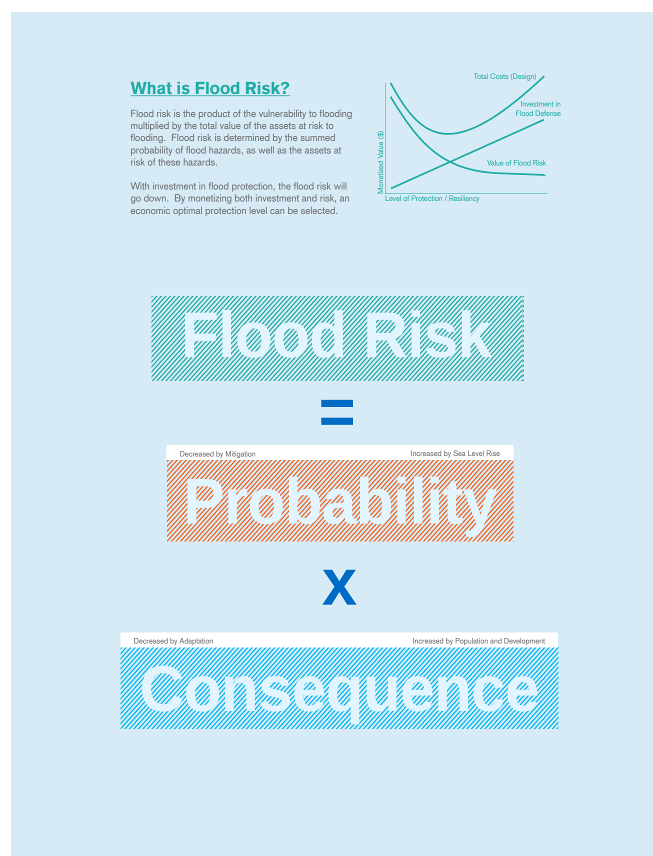

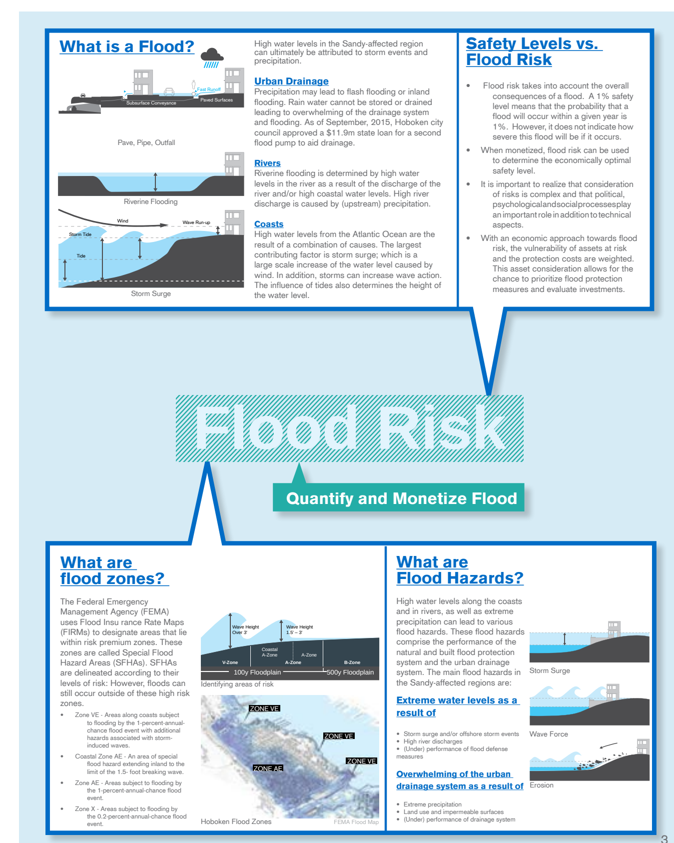

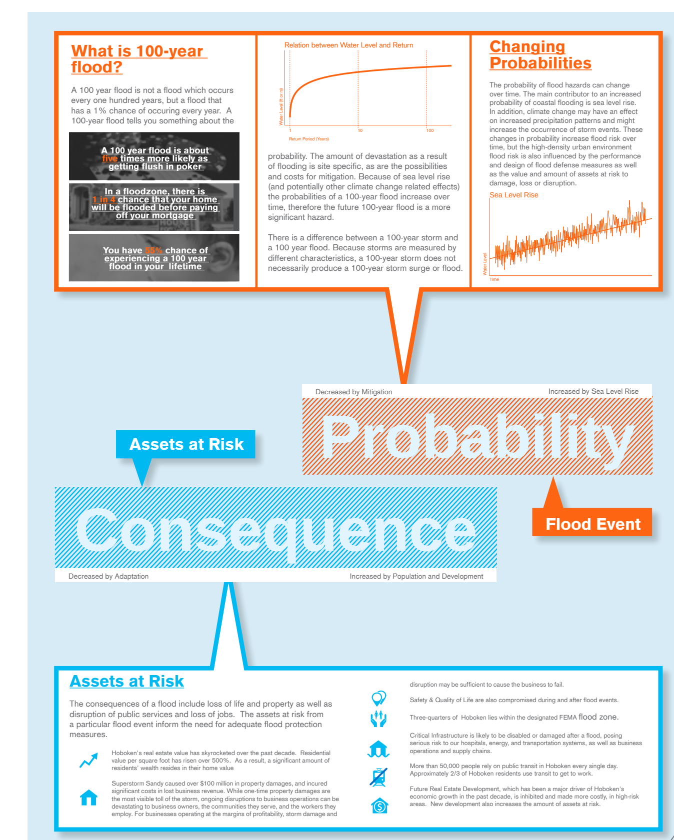

Glossary of Useful Terms

100-Year Flood: A flood with a 1% chance of occuring in any given year.

500-Year Flood: A flood with a 0.2% chance of occuring in any given year.

Combined Sewer: A type of sewer system that collects sanitary sewage and stormwater runoff in a single pipe system. During flood events, these systems may overflow, resulting in what is called Combined Sewer Overflow (CSO), which is a mixture of stormwater and sewage.

Flash Flood: A sudden local flood, typically due to heavy rain.

Floodplain: Any land area susceptible to being inundated by floodwaters from any source.

Flood Risk: The measure of vulnerability to flood with consideration to the likelihood of flooding and the total value of the assets at risk.

Flood Zones: Areas identified by the Federal Emergency Management Agency (FEMA) as special flood hazard areas or risk premium zones for flood insurance. These zones are indicated in Federal Emergency Management Agency Flood Insurance Rate Maps (FEMA FIRM).

Green Infrastructure (also known as Blue-green infrastructure): is a system of urban and environmental strategies. These strategies include stormwater management, climate adaptation, better air quality, sustainable energy production, clean water, healthy soils, and an improvement in the quality of life and experience of cities.

Impervious Surface: Also known as impermeable surfaces, impervious surfaces refer to materials that do not absorb rainwater and cause water runoff.

National Flood Insurance Program (NFIP): A program created by Congress through the National Flood Insurance Act of 1968. The program enables property owners to purchase insurance protection from the government against losses from flooding.

Resilience: The ability to anticipate, prepare for, and adapt to changing conditions and to withstand, respond to, and recover rapidly from impacts or disruptions.

Return Period: With regard to flood, it is an estimate of the likelihood of a storm event. It is also known as a recurrence interval.

Storm Surge: A rise in coastal water level associated with a hurricane or other strong coastal storm.

Stormwater: Water that is caused by rain events or snow melt. Stormwater that does not get absorbed into the ground is referred to as stormwater runoff.

For More Information Visit any of the following sites:

Rebuild by Design - Hudson River
www.rbd-hudsonriver.nj.gov
rbd-hudsonriver@dep.nj.gov

National Flood Insurance Program
http://www.floodsmart.gov/

Federal Emergency Management Agency (FEMA)
http://www.fema.gov/

New Jersey Department of Environmental Protection
http://www.nj.gov/dep/

City of Hoboken, NJ
http://www.hobokennj.org/

U.S. Department of Housing & Urban Development
http://portal.hud.gov/

HUD: Rebuild by Design
http://www.rebuildbydesign.org/

Sandy Relief Fund
http://sandynjrelieffund.org/

Together North Jersey
http://togethernorthjersey.com/

This pamphlet provides insight into flood risk in the United States, the hazards and the assets as well as context on how to interpret and view this information. The purpose of this pamphlet is to provide stakeholders in the Hudson River region with information to streamline the discussion for challenges at hand as the result of flood risk.

Original Content Developed By:

OMA AMO with 2 × 4

Disclaimer
The information presented in this pamphlet was produced in the context of the Rebuild by Design competition, and is intended for discussion with decision makers and stakeholders involved. This information is not complete and or exhaustive and is provided for the U.S. context. No rights can be deducted from this document and the authors are not responsible for errors and misinterpretation of the provided information.

OMA team
The OMA team intends to improve the resiliency of critical nodes in high-density urban environments; points that are vulnerable and very productive (stacked functions) on a local level, but have a much broader (regional) impact.

Sources

City of Hoboken. http://www.hobokennj.org/departments/environmental-services/storm-flood-zones/

Hillen, M.M.; Jonkman, S.N.; Kanning, W.; Kok, M.; Geldenhuys, M.; Vrijling, J.K., and Stive, M.J.F., 2010. Coastal Defence Cost Estimates—Case Study of the Netherlands, New Orleans and Vietnam. Delft, the Netherlands: Delft University of Technology, 59p.

Jonkman S.N., Kok M., van Ledden M., Vrijling J.K. (2009) Risk-based design of flood defence systems: a preliminary analysis of the optimal protection level for the New Orleans metropolitan area. Journal of Flood Risk Management Vol. 2 Issue 3, p.170-181.

Jonkman S.N., Hillen M.M., Nicholls R.J., Kanning, W., van Ledden M. (2012) Costs of adapting coastal defences to sea-level rise – new estimates and their implications. Journal of Coastal Research, 29 (5) 1212-1226.

WNYC Flooding & Flood Zones Map. http://project.wnyc.org/flooding-sandy-new/#14.00/40.7424/-74.0071

5

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REBUILD BY DESIGN

RESIST · DELAY · STORE · DISCHARGE

HUDSON RIVER

Hoboken Weehawken Jersey City | New Jersey

HISTORIC PROPERTIES/SECTION 106

WHY ARE HISTORIC PROPERTIES RELEVANT TO THE PROJECT?
Federally funded projects, by law, must involve the public where historic properties may be affected by the proposed action.

1 INITIATE - WHAT IS HAPPENING?

- Establish the Undertaking - Develop Resist, Delay, Store, Discharge Infrastructure
- Notify the State Historic Preservation Officer (SHPO) → New Jersey Historic Preservation Office (NJHPO)
- Involve the Public including the Citizens Advisory Group (CAG), Executive Steering Committee (ESC) and Public
- Consulting parties - Federal and State Agencies

2 IDENTIFY HISTORIC PROPERTIES - WHAT CAN THE PROJECT AFFECT?

- Scope - Defined by Project Elements
- Above Ground Survey of Historic Architectural Resources
- Identify Areas of Archaeological Potential
- Surveyed Historic Properties Evaluated for National Register Eligibility
- NJHPO Reviews Eligibility Recommendations
- Involve the Public

3 ASSESS ADVERSE EFFECTS TO HISTORIC PROPERTIES

- Criteria of Adverse Effect - Determine if the Project may Directly or Indirectly Change a National Register Eligible Historic Property
- If Historic Properties are Adversely Affected - Develop Resolution of Adverse Effects
- If no Historic Properties Affected, then the Section 106 Process is Concluded
- Public Input to Assess Adverse Effects

4 RESOLVE ADVERSE EFFECTS

- Consulting Parties and NJHPO, Work with the Public to Address Adverse Effects
- Avoid, Redesign or Mitigate Adverse Effects
- Memorandum of Agreement Outlines the Mitigation Plans
- Agreement between Consulting Parties and Advisory Council on Historic Preservation (ACHP)
- Signed Memorandum of Agreement → Section 106 Process Concluded

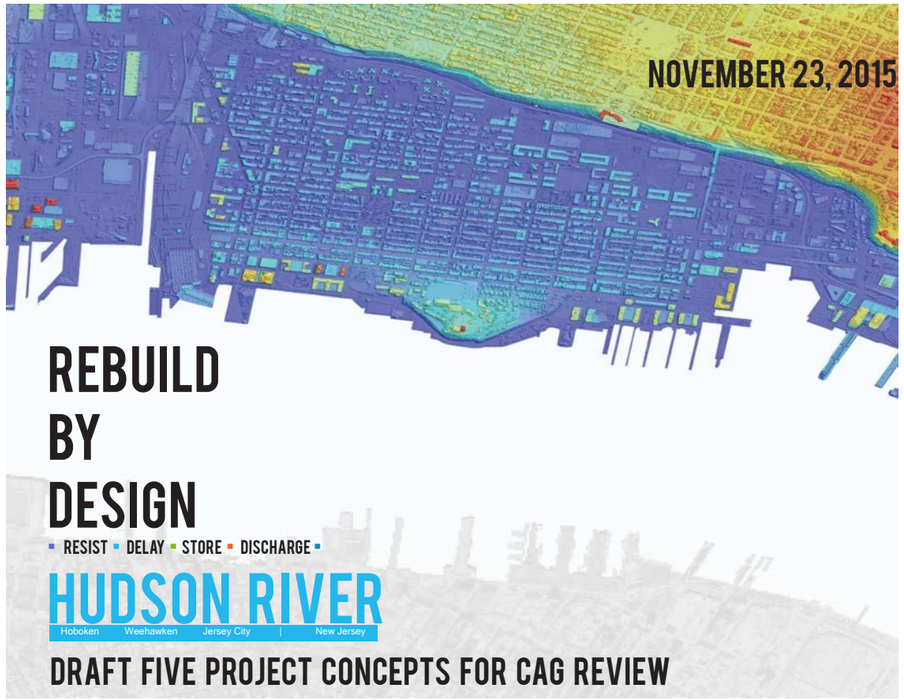
NOVEMBER 23, 2015
CAG CONCEPT MEETING

DISCLAIMER

The attached drawings represent five (5) Draft Concepts (A-E) prepared by Dewberry Engineers, Inc. These 5 draft concepts, dated 11/23/15, are currently under review by the Project Citizen Advisory Group (CAG) and other stakeholders in accordance with the Final Citizen Outreach Plan.

These 5 Concepts are not to be considered FINAL.

The next steps are to use the project established Screening Criteria to evaluate the 5 concepts to select three (3) concepts as Build Alternatives. These 3 Build Alternatives will be further analyzed through the feasibility study and Environmental Impact Statement.



CONCEPT A

Lowest impact alignments which still provide substantial flood risk reduction benefits to most residents.

- North Waterfront takes Boathouse into account.
- North Hoboken on-street protection provided along Garden Street until elevation tie-in.
- Hoboken Terminal does not receive flood risk reduction benefits.
- South Waterfront constructed independent of Longslip Canal.
- Permanent movable gates proposed to address flood risk reduction along the underpass.

Legend:

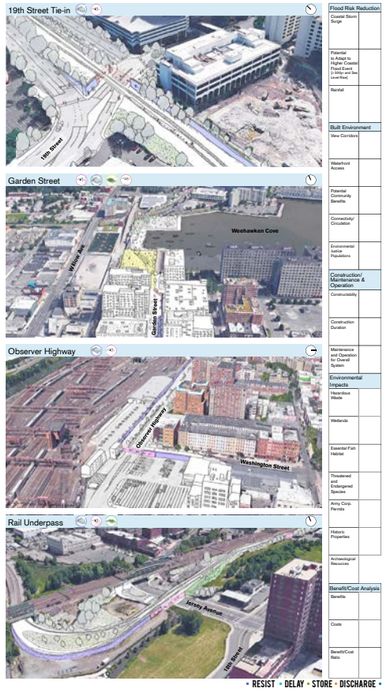
- Gate - Sliding
- Gate - Swinging
- Deployable Flood Wall
- Landscape
- Berm
- Revetment
- Raised Path
- Seawall
- Flood Wall
- T Wall
- Ramp
- Municipal Boundaries
- Study Area
- Ferry Lines
- Preliminary FEMA 100 year Flood Plain

MIN DFE : Approx. Min. FEMA Certification

MAX DFE : Approx. 500 Year + 2075 NOAA SLR

*All DFE's are Approximate and Subject to Change

New Jersey Department of Environmental Protection



• RESIST • DELAY • STORE • DISCHARGE •

CONCEPT B

Moderate impact alignments which give Weehawken and the North Waterfront substantial flood risk reduction benefits.

- Weehawken tie-in at Lincoln Tunnel.
- Permanent built structures on North Waterfront provide flood risk reduction benefits.
- Hoboken Terminal does not receive flood risk reduction benefits.
- South Waterfront constructed independent of Longslip Canal.
- Permanent movable gates proposed to address flood risk reduction along the underpass.

Legend:

- Gate - Sliding
- Gate - Swinging
- Deployable Flood Wall
- Landscape
- Berm
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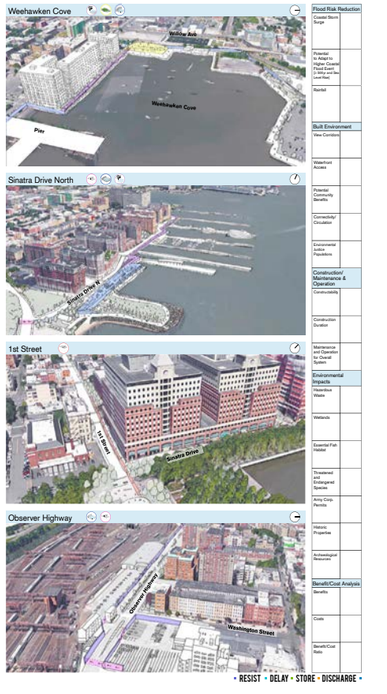

• RESIST • DELAY • STORE • DISCHARGE •

CONCEPT C

Maximum impact alignments which offer flood risk reduction benefits to Weehawken, N/S Waterfront, and Hoboken Terminal.

- An in-water revetment is planned in Weehawken Cove, and to the North a Lincoln Tunnel tie-in.
- Permanent built structures on North Waterfront provide flood risk reduction benefits.
- Programmed Bulkheads offer added community benefits, while providing flood risk reduction benefits to those on the water.
- South Waterfront constructed assuming the proposed construction of the Longslip Canal project.
- Hoboken Terminal does receive flood risk reduction benefits; resist portion is planned in-water in front of the Terminal.
- Permanent movable gates proposed to address flood risk reduction along the underpass.

Legend:

- Gate - Sliding
- Gate - Swinging
- Deployable Flood Wall
- Landscape
- Berm
- Revetment
- Raised Path
- Seawall
- Flood Wall
- T Wall
- Ramp
- Municipal Boundaries
- Study Area
- Ferry Lines
- Preliminary FEMA 100 year Flood Plain

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MAX DFE : Approx. 500 Year + 2075 NOAA SLR

*All DFE's are Approximate and Subject to Change

• RESIST • DELAY • STORE • DISCHARGE •

CONCEPT D

High impact alignments which offer flood risk reduction benefits to Weehawken, N/S Waterfront, and Hoboken Terminal.

- North Resist portion offers Lincoln Tunnel Tie-In.
- Permanent built structures on North Waterfront provide flood risk reduction benefits.
- Programmed Bulkheads offer added community benefits, while providing flood risk reduction benefits to those on the water.
- South Waterfront constructed assuming the proposed construction of the Longslip Canal project.
- Alignment goes through Hoboken Terminal, offering flood risk reduction benefits to essential electrical and utility assets (allows for continued operations in the case of an event).
- Permanent movable gates proposed to address flood risk reduction along the underpass.

Legend:

- Gate - Sliding
- Gate - Swinging
- Deployable Flood Wall
- Landscape
- Berm
- Revetment
- Raised Path
- Seawall
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- Municipal Boundaries
- Study Area
- Ferry Lines
- Preliminary FEMA 100 year Flood Plain

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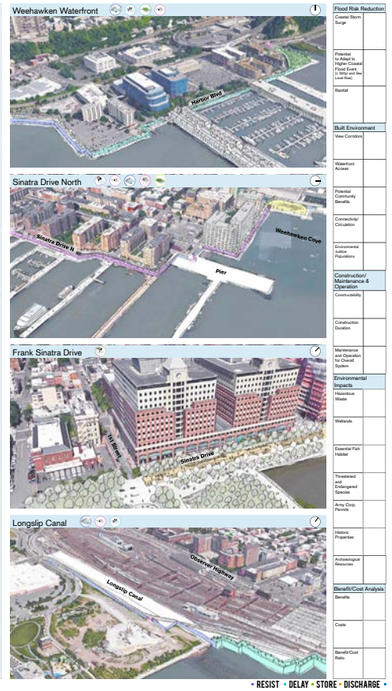

• RESIST • DELAY • STORE • DISCHARGE •

CONCEPT E

Moderate impact alignments which offer partial flood risk reduction benefits to North waterfront and full benefits to South Waterfront.

- North Waterfront takes Boathouse into account.
- North Hoboken on-street protection provided along Hudson Blvd (Option 1) and Shipyard Lane (Option 2) until elevation tie-in.
- Some programmed bulkhead and other resist structures proposed along South Waterfront.
- Permanent movable gates proposed to address flood risk reduction along the underpass.

Legend:

- Gate - Sliding
- Gate - Swinging
- Deployable Flood Wall
- Landscape
- Berm
- Revetment
- Raised Path
- Seawall
- Flood Wall
- T Wall
- Ramp
- Municipal Boundaries
- Study Area
- Ferry Lines
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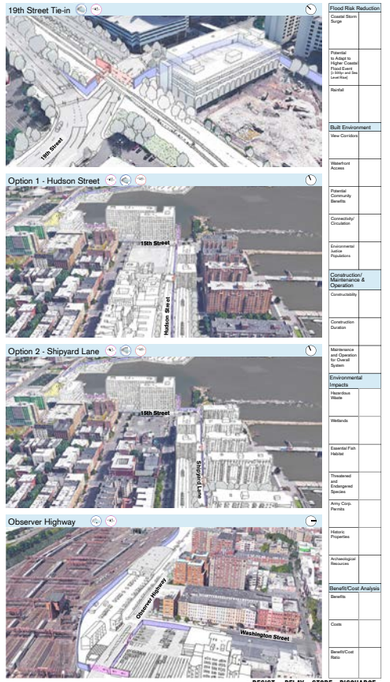


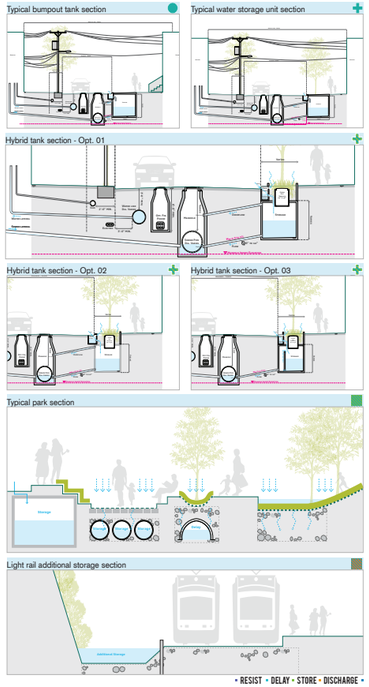
• RESIST • DELAY • STORE • DISCHARGE •

DELAY STORE DISCHARGE

- Aim to maximize the potential to capture, store, infiltrate, evaporate and release of stormwater (STORE + DELAY + DISCHARGE)
- Look to achieve community co-benefits while improving management of stormwater that could reduce rainfall flooding.
- With the exception of the BASF site, all stormwater management strategies are entirely on publicly-owned land.
- Use both "green" and "grey" stormwater management strategies.
- Consider physical, environmental and infrastructure constraints in locating and designing specific interventions.

Legend:

- Delay + Store - Parks
- Water Storage Sites
- Catchment Area
- Outfall Pipe
- Storm Sewer Pipe
- Hybrid Tank
- Tank
- Tank Bumpout
- Ongoing Projects
- Existing Flooding "Hotspot"
- Municipal Boundaries
- Study Area
- Ferry Lines



• RESIST • DELAY • STORE • DISCHARGE •

DECEMBER 10, 2015
CAG CONCEPT MEETING

PURPOSE & NEED	Meets Purpose & Need (Yes/No)	DOES CONCEPT MEET PURPOSE & NEED?		
	Rating	GOOD	FAIR	POOR
FLOOD RISK REDUCTION	Percent Populaion with Coastal Storm Surge Risk Reduction Benefits	Approximate percent of study area population within the 100-year coastal floodplain receiving flood risk reduction benefits.		
	Potential to Adapt to Higher Coastal Flood Events [>= 500yr and Sea Level Rise]	Both ends tie in outside the 500 year floodplain; there is space / capacity along the barrier to increase the design elevation.	One end ties in outside the 500 year floodplain; there is space / capacity along the barrier to increase the design elevation. Additional cost associated with achieving 500 year.	Neither end tie in outside the 500 year floodplain; there is space / capacity along the barrier to increase the design elevation. Greatest cost to achieve 500 year.
	Rainfall	Infiltrates (delays) and/or stores and/or discharges > 1M ga of rainfall runoff and/or has a potential to reduce flooding effects from greater than 5-year rainfall event within the study area.	Infiltrates (delays) and/or stores and/or discharges 500K - 1M ga of rainfall runoff and/or has a potential to reduce flooding effects from a 2 year to 5-year rainfall event within the study area.	Infiltrates (delays) and/or stores and/or discharges <500K ga of rainfall runoff and/or has a potential to reduce flooding effects from a less than 2-year rainfall event within the study area.
BUILT ENVIRONMENT/SOCIOECONOMICS	View Corridors	Enhanced views from the city to the water (improves/creates additional view corridors); Little to no impact on views from the city to the water.	Little to moderate impact on views from the city to the water (few barriers over 5' in height).	Many views from the city to the water are blocked (many barriers over 5' tall); visual impact on the city skyline (barriers are visible from NY side of the river.
	Waterfront Access	Maintain or enhance existing pedestrian access to the waterfront (additional opportunities or shorter distance needed to reach waterfront).	Minimal to moderate impacts on existing pedestrian access to the waterfront (little increase in distance needed to walk to get around / over barriers).	Moderate to high impacts on existing pedestrian access to the waterfront (large increase in distance needed to walk from the city to the waterfront, in particular ADA accessible route).
	Potential Community Benefits	Potential to incorporate many new and/or improved amenities to support recreational, commercial and cultural activities.	Potential to incorporate few new and/or improved amenities to support recreational, commercial and cultural activities.	Potential to incorporate no new and/or improved amenities to support recreational, commercial and cultural activities.
	Connectivity / Circulation	Little or no impact on connectivity (vehicles, bike, peds) of the city's street system and/or potential to decrease congestion. No loss in existing parking spaces.	Moderate impacts on connectivity (vehicles, bike, peds) of the city's street system. Loss in some parking spaces.	Moderate to heavy impacts on connectivity (vehicles, bike, peds) of the city's street system. Loss in major parking spaces.
	Environmental Justice Populations	Protects the greatest number of low-income/ minority communities as compared to other concepts.	Protects a moderate number of low-income/ minority communities as compared to other concepts.	Protects least number of low-income/ minority communities as compared to other concepts.
CONSTRUCTION/MAINTENANCE & OPERATION	Constructability	Not too complex. No major need to relocate major infrastructure and no major disruption to business operation/ public access during construction.	Moderately complex. Some need to relocate major infrastructure and/or some major disruption to business operation/ public access during construction.	Complex. Need to relocate major infrastructure and/or major disruption to business operation/ public access during construction.
	Construction Duration	High probability that construction duration will meet project requirements. No complex permitting issues.	Medium probability that construction duration will meet project requirements. Moderately complex permitting issues.	Low probability that construction duration will meet project requirements. Permitting requirements are significant.
	Maintenance & Operation for Overall System	Maximum permanent structures with fewer deployable structures. Lower ongoing operation and maintenance costs. Reduced potential for human error.	More deployable structures. Moderate ongoing operation and maintenance costs. Moderate potential for human error.	Many deployable structures. High ongoing operation and maintenance costs. Higher potential for human error.
ENVIRONMENTAL IMPACTS (BASED ON DATA GATHERED TO DATE)	Hazardous Waste	Number of potentially contaminated sites based on desktop data collection.		
	Wetlands Permitting (Yes / No)	Presence of wetlands in Project Area.		
	Essential Fish Habitat	Presence of Essential Fish Habitat in Project Area		
	Threatened & Endangered Species (Yes / No)	Presence of threatened/endangered species in Project Area.		
	USACE 404 Permits (Yes / No Hudson River Waterfront)	Are USACE permits required?		
	Historic Properties	Are historic properties/districts directly impacted?		
	Archaeological Resources	No archaeological potential (prior ground disturbance demonstrated).	Low archaeological potential (prior ground disturbance cannot be demonstrated but the potential exists for archaeological resources to be encountered).	High archaeological potential (significant probability for encountering archaeological resources).
BENEFIT - COST ANALYSIS	Benefits	High potential to achieve maximum monetary benefits including flood risk reduction, co-benefits and others.	Moderate potential to achieve monetary benefits including flood risk reduction, co-benefits and others.	Less potential to achieve monetary benefits including flood risk reduction, co-benefits and others.
	Costs	Overall Costs are low.	Overall Costs are moderate.	Overall Costs are high.
	Benefit / Cost Ratio	Overall BCR has the high potential to be greater than 1.0.	Overall BCR has moderate potential to be greater than 1.0.	Overall BCR has a low potential to be greater than 1.0.

Rebuild by Design Hudson River: ■ Resist ■ Delay ■ Store ■ Discharge ■

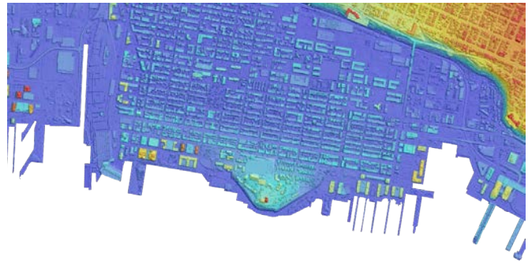
State of New Jersey Department of Environmental Protection
www.rbd-hudsonriver.nj.gov

		CONCEPTS							
FLOOD RISK REDUCTION	Rating	A (option 1)	A (option 2)	B (option 1)	B (option 2)	C	D	E (option 1)	E (option 2)
	Percent Population with Coastal Storm Surge Risk Reduction Benefits	86%	86%	98%	98%	99%	99%	90%	90%
	Potential to Adapt to Higher Coastal Flood Events [>= 500yr and Sea Level Rise]	POOR	POOR	FAIR	FAIR	GOOD	GOOD	POOR	POOR
	Rainfall	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD
BUILT ENVIRONMENT/SOCIOECONOMICS	View Corridors	FAIR	FAIR	FAIR	FAIR	POOR	POOR	FAIR	POOR
	Waterfront Access	GOOD	GOOD	FAIR	FAIR	POOR	POOR	GOOD	GOOD
	Potential Community Benefits	POOR	POOR	FAIR	FAIR	FAIR	GOOD	FAIR	FAIR
	Connectivity / Circulation	POOR	FAIR	FAIR	FAIR	GOOD	FAIR	POOR	FAIR
	Environmental Justice Populations *Includes only the waterfront protection level.	FAIR	FAIR	GOOD	GOOD	GOOD	GOOD	GOOD	GOOD
CONSTRUCTION/MAINTENANCE & OPERATION	Constructability	GOOD	FAIR	FAIR	FAIR	POOR	POOR	GOOD	FAIR
	Construction Duration	GOOD	FAIR	FAIR	FAIR	POOR	POOR	GOOD	GOOD
	Maintenance & Operation for Overall System	GOOD	GOOD	FAIR	FAIR	POOR	POOR	FAIR	FAIR
ENVIRONMENTAL IMPACTS (BASED ON DATA GATHERED TO DATE)	Potentially Hazardous Waste Sites. Number is for Resist only.	32	28	31	28	18	20	30	30
	Wetlands Permitting (Yes / No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Essential Fish Habitat	No	No	Yes	Yes	Yes	Yes	Yes	Yes
	Threatened & Endangered Species (Yes / No)	No	No	Yes	Yes	Yes	Yes	Yes	Yes
	USACE 404 Permits (Yes / No Hudson River Waterfront)	No	No	Yes	Yes	Yes	Yes	Yes	Yes
	Historic Properties	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Archaeological Resources	FAIR	FAIR	POOR	POOR	POOR	POOR	POOR	POOR
BENEFIT - COST ANALYSIS	Benefits	High	High	High	High	Highest	Highest	High	High
	Costs	Lowest	Lowest	High	High	Highest	Highest	High	High
	Benefit / Cost Ratio	GOOD	GOOD	POOR	POOR	POOR	POOR	FAIR	FAIR

Rebuild by Design Hudson River: ■ Resist ■ Delay ■ Store ■ Discharge ■

State of New Jersey Department of Environmental Protection
www.rbd-hudsonriver.nj.gov

FEBRUARY 18, 2016
BUILD ALTERNATIVES MEETING



ALTERNATIVES SUMMARY SHEET

The following are written descriptions of each of the Resist alignments for the three build Alternatives moving forward, which will be discussed further at the community meeting to be held on February 18, 2016 from 6:00 PM to 9:00 PM at the Wallace School Gymnasium (1100 Willow Avenue, Hoboken, NJ). Additional information can be found on the project website at www.rbd-hudsonriver.nj.gov/.

The Delay, Store, Discharge (DSD) component of the project is included in each of the three Alternatives, but not discussed here. The DSD component does not vary among the Resist alignments described.

Dewberry Engineers has completed the concept screening phase of this project, and based on comment from the public, the local governments, and other key stakeholders, Concepts C and D will not advance for further study.

The project screening criteria used to develop the original five concepts were reevaluated and applied to develop the three build Alternatives described below. As a result, each of the remaining Concepts A, B, and E has been modified. The three Alternatives described below will be evaluated further against a "no-build" scenario to ultimately arrive at the Preferred Alternative.

Below is a description of the Resist alignments for each alternative.

ALTERNATIVE 1

Characteristics of **Alternative 1**:

- Provides greatest level of coastal flood risk reduction benefits.
- Potentially least amount of transportation network (roadway and parking) disruption
- Highest cost and complexity to construct compared to the other alternatives
- Most impact on existing waterfront views/access

Alternative 1 (which was developed from the earlier Concept B) will be included within the EIS to maintain a full range of reasonable alternatives pursuant to the National Environmental Policy Act (NEPA). Furthermore, to maintain this alternative as the "waterfront" option, components of the southern alignment of Concept E were incorporated into this alternative. This alternative provides coastal flood risk reduction to approximately 98% of the population within the study area.

Alternative 1 provides the greatest level of flood risk reduction by locating the resist structures primarily along the waterfront. This alternative's Resist structure generally follows the waterfront from the Lincoln Tunnel in Weehawken south to Weehawken Cove where it is envisioned that a boathouse, using alternate funding, will be incorporated into the structure. In addition, a bermed or terraced park will be incorporated into the southwest corner of Weehawken Cove. The alignment continues around the waterside of the Tea Building and Maxwell Place communities in North Hoboken, and then south along the waterfront to the intersection of Sinatra Drive North and Frank Sinatra Drive, just south of Maxwell Place Park. There will be a series of gates along the waterfront to allow access onto piers and across road intersections during non-flood conditions. Some possible designs for the Resist structure may include elevated walkways, raised paths, bermed park area etc., however, the design is still to be determined. The Resist structure also has a component along Sinatra Drive from 4th Street to 1st Street, in South Hoboken, where the design may consist of an elevated walkway that potentially ties into a deployable system running east/west on 1st Street. In the southern portion of the project area, there will be two options will be analyzed: Option 1 features an alignment south of Observer Highway, within the rail yard (south of the proposed Hoboken Yard Redevelopment Area), whereas Option 2 includes an alignment along Observer Highway from Washington Street to Marin Boulevard, on an alignment that runs behind NJ Transit offices. The alignment includes gates for access at various locations including at the Marin Boulevard, Grove Street and Newark Avenue underpasses beneath the rail lines, as well as protection where Hudson Bergen Light Rail (HBLR) tracks pass below the NJ Transit overpass in the southwest corner of the project area.

ALTERNATIVE 2

Characteristics of **Alternative 2**:

- Does not impact waterfront views or existing waterfront access
- Less costly to construct compared to Alternative 1
- May require reduction in space along Washington Street for structure footprint
- May have impact on roadway/traffic flow on 15th Street

Alternative 2 was developed from the earlier Concept E with two modifications. First, to maintain a distinction between the waterfront option (Alternative 1), the northern Hoboken portion of the alignment along the Tea Building waterfront walkway was moved to 15th Street (south of the Tea Building). Second, because of the length and height of structure required along Hudson Street or Shipyard Lane, as well as the significant number of gates required for each, the alignment was moved to Washington Street. Washington Street was chosen due to the width of the street to accommodate the necessary structure and potential to blend structural amenities into the commercial nature of the area. This alternative provides coastal flood risk reduction to approximately 86% of the population within the study area.

This alternative's Resist structure begins near the HBLR Lincoln Harbor station at Waterfront Terrace, traveling south towards Harbor Boulevard, and then south along Weehawken Cove where it is envisioned that a boathouse, using alternate funding, will be incorporated into the structure. In addition, a bermed or terraced park will be incorporated into the southwest corner of the Weehawken Cove. The alternative continues to 15th Street. It will then travel east along 15th Street from the northern end of Garden to Washington Street, and then south along Washington Street, where it will gradually taper off between 14th and 13th Streets. Street crossings will feature gates to allow for access during non-flood conditions. Consideration will be given to adapting the use of structures in a way to provide urban amenities and landscape enhancements. There will then be two options in the south, along the Hoboken Terminal rail yard: Option 1 will feature an alignment south of Observer Highway, within the rail yard (south of the proposed Hoboken Yard Redevelopment Area), whereas Option 2 will include an alignment along Observer Highway from Washington Street directly to Marin Boulevard. The alignment includes gates for access at various locations including at the Marin Boulevard, Grove Street and Newark Avenue underpasses beneath the rail lines, as well as protection where HBLR tracks pass below the NJ Transit overpass in the southwest corner of the project area.

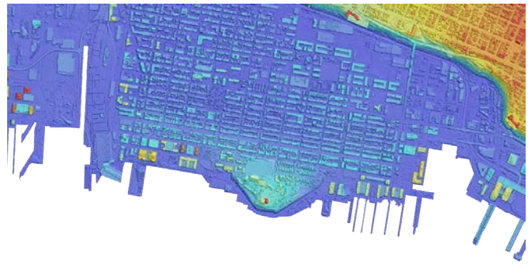
ALTERNATIVE 3

Characteristics of **Alternative 3**:

- Does not impact waterfront views or existing waterfront access
- Less costly to construct and maintain compared to Alternative 1
- Reduced traffic and circulation impacts compared to Alternative 2 by using alleyway for portion of alignment.
- May enhance the urban design and existing use of public space within the alleyway
- May require reduction in space along Washington Street for structure footprint

Alternative 3 was developed from the earlier Concept A, which was revised to relocate portions of the Resist alignment to areas that would minimize impacts on the community. The Alternative utilizes a private alleyway that parallels 14th Street to extend to Washington Street to meet the same flood resist goals. Washington Street was again chosen due to the width of the street to accommodate the necessary structure and potential to blend structural amenities into the commercial nature of the area. This alternative provides coastal flood risk reduction to approximately 85% of the population within the study area.

This alternative's **Resist** structure begins near the Hudson Bergen Light Rail (HBLR) Lincoln Harbor station at Waterfront Terrace, traveling south towards Harbor Boulevard, and then continuing south along Weehawken Cove towards Garden Street. It is envisioned that a boathouse, using alternate funding, will be incorporated into the structure. In addition, a bermed or terraced park will be incorporated into the southwest corner of the Weehawken Cove. The structure then will travel down the alleyway midway between 15th and 14th Streets from Garden to Washington Street, and then south along Washington Street, where it will gradually taper off between 14th and 13th Streets. Street crossings will feature gates to allow for access during non-flood conditions. Consideration will be given to adapting the use of structures in a way to provide urban amenities and landscape enhancements. There will then be two options: Option 1 will include an alignment south of Observer Highway, within the rail yard (south of the proposed Hoboken Yard Redevelopment Area), whereas Option 2 will feature an alignment along Observer Highway from Washington Street directly to Marin Boulevard. The alignment includes gates for access at various locations including at the Marin Boulevard, Grove Street and Newark Avenue underpasses beneath the rail lines, as well as protection where HBLR tracks pass below the NJ Transit overpass in the southwest corner of the project area.



SUMMARY OF PUBLIC COMMENTS ON FIVE CONCEPTS FOR REBUILD BY DESIGN (RBD) - HUDSON RIVER

December 10 to December 31, 2015

The following is a summary of over 250 verbal and written responses submitted by the public (as received by New Jersey Department of Environmental Protection [DEP]) on five RBD concepts presented at a Public Meeting on December 10, 2015. Verbal comments were recorded at the public meeting and at subsequent drop-in sessions held on December 14, 15 and 17, 2015.

Presentations and public comments during the December 10, 2015 Public Meeting were recorded and can be found at http://www.rbd-hudsonriver.nj.gov. In addition to the question and answer sessions held during the meeting and subsequent drop-in sessions, public comment was provided in writing through either the use of comment forms provided at these sessions; comments submitted through the U.S. Mail; and comments submitted by email at the project website (http://www.rbd-hudsonriver.nj.gov/). The Project Team requested that all comments on the five concepts be submitted no later than December 31, 2015.

The opportunity for the public to provide comments on these five concepts was the second major opportunity for public input on the RBD Hudson River project since the U.S. Department of Housing and Urban Development (HUD) awarded the grant. The first opportunity was in September 2015 during the scoping period, when a public meeting was held and public comments were solicited on the scoping document that outlined the purpose and need for the project. There will be another formal opportunity for public comment in the coming months, before the preferred alternative for the project is selected. There will also be an opportunity during review of the Draft Environmental Impact Statement (DEIS) later in 2016. In addition to providing public comment during and after public meetings, DEP welcomes input from the public at any time during the planning process.

About a third of the written comments received between December 10th and 31st were from residents of waterfront communities (almost exclusively Maxwell Place) and another third of the comments originated from residents of Garden Street. The addresses of the balance of the commenters was not provided with their comments. The majority of comments expressed disapproval of one or more concepts for the Resist component of the project. Specifically, those who reside in the waterfront communities of Maxwell Place and the Tea Building expressed opposition to Concepts B, C, and D, primarily objecting to the construction of a permanent seawall (or any type of resist structure) because of its effect on waterfront views and access. Residents identified the waterfront views and waterfront parks as among the most cherished aspects of quality of life in Hoboken and do not want to lose them. Some of these residents also noted that they did not experience significant flooding during Superstorm Sandy in October 2012. These residents also suggested either construction of a resist structure that would provide flood risk reduction for storms less than the 100-year storm or a network of non-permanent, fully deployable resist structures. There were few major objections raised specific to Concept E.

Comments received from Garden Street residents voiced opposition to Concept A. Residents expressed concerns that the Resist component will bisect the community and cause conflict between neighbors. They also stated that implementation of Concept A will lower their property values so much it will qualify as a blighting/condemnation/taking. In addition, a form letter being used by residents of Garden Street was submitted which contained a number of concerns, including: hindering emergency vehicle access, reducing pedestrian use, complicating snow and garbage removal and making parking more difficult.

Many comments expressed support for advancing the Delay, Store and Discharge (DSD) components; some commenters expressed a desire to have these components given funding priority over Resist components, or to pursue the DSD components only. Residents want to see "every day events" (e.g., recent water main breaks) addressed and existing infrastructure problems fixed rather than proceed with precautionary measures against another possible Sandy-type event. Commenters also encouraged the separation of storm water and sewer outfalls and adding additional pumps to the system.

The project team evaluated the public input and is considering modifications to the concepts that will result in the selection of three Alternatives. The selection of the three Alternatives will complete the concept development phase and will move the project into the alternatives analysis phase. During this phase of the project the three alternatives will be further developed and analyzed, as will a "no-build" or "no-action" alternative, with the goal of selecting the preferred alternative in the spring/summer of 2016. The no-action alternative is required by the National Environmental Policy Act (NEPA) and defines what the project area will be like without any proposed improvements. Furthermore, the no-action alternative provides a comparison to the

build alternatives. The three Build Alternatives will be posted on the project website as soon as possible and will include engineering assessments and clarifications for any changes or updates to the drawings.

Additionally, in response to the significant public comment received about the project during the comment period, as well as comments and questions that have been brought up over the course of the project, responses to a list of frequently asked questions are provided below. The questions are grouped based on the following categories: Project Background, Project Process, Project Funding, and the Five Concepts.

FREQUENTLY ASKED QUESTIONS

PROJECT BACKGROUND

Where can I find out current information about the project and stay involved?

All project information and materials for the Rebuild by Design Hudson River Project can be found on the project website at www.rbd-hudsonriver.nj.gov. Also, interested persons may sign up for the website listserv at http://www.state.nj.us/dep/floodhazard/rbd-hudsonriver-subscribe.htm.

Feedback can be emailed to rbd-hudsonriver@dep.nj.gov , or mailed to David Rosenblatt, Director, Office of Flood Hazard Risk Reduction Measures, 501 East State Street, Mail Code 501-01A, PO Box 420, Trenton, NJ 08625-0420.

What is this project about?

This project proposes to take a multi-faceted approach to address flooding from major storm surges and high tides as well as from heavy rainfall events. The Proposed Project will occur throughout the City of Hoboken, and will extend into Weehawken and Jersey City, with the following approximate boundaries: the Hudson River to the east; Baldwin Avenue (in Weehawken) to the north; the Palisades to the west; and 18th Street, Washington Boulevard and 14th Street (in Jersey City) to the south.

The project's comprehensive approach to resilience considers four integrated components:

Resist: a combination of hard infrastructure (such as bulkheads, floodwalls and seawalls) and soft landscaping features (such as berms and/or levees which could be used as parks) that act as barriers during exceptionally high tide and/or storm surge events;

Delay: policy recommendations, guidelines and urban green infrastructure to slow stormwater runoff;

Store: green and grey infrastructure improvements, such as bio retention basins, swales, and storage tanks, that slow down and capture stormwater, and which will complement the efforts of the City of Hoboken's existing Green Infrastructure Strategic Plan; and

Discharge: enhancements to Hoboken's existing stormwater management system, through enhanced storm water collection systems, outfalls and/or pumping stations.

Why are we doing this project?

Superstorm Sandy flooded nearly 80% of Hoboken. Residents and businesses suffered financial and emotional hardship long after the storm passed and the flood waters receded. This project's goal is to reduce the flood risk for thousands of residents and businesses that were devastated by Sandy and are vulnerable both to future storm surge and to recurring inland rainfall flooding.

The project will benefit the entire community, which relies on critical infrastructure that is currently vulnerable to future storm surges. This includes electrical substations, the sewage treatment plant, ambulance headquarters, police and fire stations, and hospital. A detailed discussion of the project's Purpose and Need can be found in the Final Scoping Document, which is available for download on the project's website at www.rbd-hudsonriver.nj.gov.

How would these proposed plans effect Hoboken in the years to come? Why do we need to build anything at all and what would happen if it was decided not to build any protective measure for our community?

As recent storms like Hurricane Joaquin and Winter Storm Jonas remind us, the New Jersey coastline and the project area will continue to be hit by storms in the future. The current FEMA guideline (FEMA 577) indicates a 26% chance of another Sandy type storm hitting Hoboken in the next 30 years. Even moderate storms could result in devastating flooding events and can be more frequent with sea level rise. By taking a proactive approach now, the project area will help reduce flood risk for years to come.

Who ultimately makes the final decisions regarding this project?

The Hudson River Project has an Executive Steering Committee. The role of the steering committee is to collaborate, exchange information and provide a forum for committee members to provide input to the DEP throughout all phases of the project, from feasibility through construction. The steering committee discusses and attempts to build consensus on the direction of the project, project schedule, project related policy issues and concerns raised to the mayors and the DEP by the public.

The steering committee is chaired by the DEP Commissioner and/or his designee, and also includes the DEP RBD project team members and the Mayors and members of their staffs from Hoboken, Weehawken, and Jersey City. Representatives of other stakeholders are

Will the Delay, Store & Discharge (DSD) portion of this project be built to help with systemic flooding as part of the $230 Million?

DSD components will be considered as part of the overall project strategy, and will be included in the preferred alternative. Depending on the cost of the Resist element of the project, funds may be available to address some of the DSD elements of the project.

It should be noted that each city in the project area, as well as the responsible sewerage authorities, are actively working independent of the RBD project on Delay, Store and Discharge components to reduce surface water that enters the Combined Sewerage Overflow (CSO). These include zoning changes and new and ongoing initiatives (such as the NHSA's Long Term Control Plan and Hoboken's Green Infrastructure Strategic Plan). All these efforts will further the overall project goals.

Is it possible to use the RBD funds for other projects instead?

No. The awarded funds are specifically required to be used to implement the "Resist, Delay, Store, Discharge" proposal submitted in connection with the Rebuild by Design competition.

FIVE CONCEPTS QUESTIONS

Why are we learning about the five project concepts now?

Dewberry has been gathering data on existing conditions and performing significant engineering analyses since June 2015. That work – together with information gathered from stakeholders and through public involvement – resulted in the five concepts produced for consideration and comment. The concepts were made available to the general public after the CAG, the ESC, primary stakeholders and major utilities provided feedback in November of 2015, in accordance with the project scoping document. The five concepts were then presented at a Public Meeting on December 10, 2015. Concepts are currently being revised based on community input.

How were the five concepts developed?

The concept development process was a culmination of significant information gathering conducted and analyzed since the beginning of the feasibility and EIS work began in early June 2015. This included compiling historical data and conducting field work to gather detailed information on topography, geotechnical characteristics and conditions of existing waterfront structures. In addition, there was interaction with the Executive Steering Committee (ESC), Citizen Advisory Group (CAG) and the public to collect additional information and provide project input.

After analyzing much of the information, all potential concept ideas first were screened to determine whether they met the Purpose & Need of the project. After passing that screen, the individual ideas were evaluated to determine whether a proposed idea was feasible, practical or prudent. Further qualitative consideration was given to critical attributes of conceptual

ideas, such as: minimizing direct impacts on privately owned property, the number of deployable structures required, potential to achieve FEMA certification and ability to obtain the same outcome with fewer impacts on the natural or built environment. The result of these evaluations led to the development of different ideas/options that could be used to develop the resist, delay, store, discharge concepts. This collection of options is known as the "tool kit".

Next, Dewberry combined components from the tool kit based on thematic frameworks to create comprehensive strategies to address both coastal storm surge flooding and rainfall-induced flooding. For example, one theme (which became Concept A) minimized construction and maintenance costs while another combined components to maximize risk reduction from surge flooding (which became Concept C). A set of project evaluation criteria were concurrently developed with comprehensive input from both the CAG and the ESC. These criteria included evaluating how each concept met the project's scope and the project's purpose and need (as developed with feedback from the public through the scoping process) and the Scoping Public Meeting. For example, one project evaluation criterion was the percentage of the population within the study area that would receive flood risk reduction benefits. Using the project evaluation criteria (available at http://www.state.nj.us/dep/floodhazard/docs/20151203-rbdh-cag-concept-screening-metrics.pdf), the CAG and ESC provided recommendations and DEP finalized the five concepts that were presented at the December 10 public meeting.

Why do the five concepts provide different levels of risk reduction in the project area?

The five different Resist strategies within the concepts were developed to provide a range of feasible alternatives, obtain feedback on each alternative from the public, and aid in deciding which concepts should advance for further analysis. By proposing five different concepts, the community can better understand the tradeoffs between full risk reduction (flood barriers along the waterfront) and other less protective (inland) concepts that may be possible. These concepts also introduced some ideas for potential amenities that, after further development and community input, could be integrated into flood risk reduction measures.

Is there something that can be done to help buildings that might not benefit directly from the final preferred flood risk reduction measure?

Yes, and Hoboken in particular is considering measures that will do just that. There are different strategies that individual property owners could implement within their buildings to protect against flooding. Hoboken is proposing an infrastructure trust fund to provide public funding for these localized flood risk reduction measures.

Can changes be made to alignments after the three build alternatives are selected?

The current goal is to reduce the number of concepts to three alternatives in order to enable the engineering and environmental analysis work to proceed most efficiently. As additional engineering and environmental work and analysis are completed, and additional public input

is provided, it is possible that additional variations on the three build alternatives will be developed.

Have you reviewed all possible alignments?

As discussed above, a large number of alignments have been evaluated against both screening criteria and project evaluation criteria. During the public involvement process on the five concepts, additional variations were identified and are being evaluated. The Environmental Impact Statement will consider a reasonable range of alternatives that can accomplish the purpose and need of the project, as outlined in the Scoping Document.

What will our streets look like if some of these concepts are implemented?

As the three Build Alternatives are developed, the project team will also be developing clear visual images as to what the various resist structures could look like and will provide that information to the public. The project team will show examples from other locations, but the final structure design will not be completed until the next phase of the project.

Are these alignments going to remove parking?

Efforts will be undertaken to minimize any potential impact on parking. The EIS will address what, if any, effects on parking will occur based on the three build alternatives.

What are "deployables?"

There are two types of deployable systems – **active systems** and **passive systems**. This can lead to confusion when talking about where and when a deployable can be used.

Active systems require some form of human intervention to be effective; while passive systems do not. Examples of active systems include installing flood logs manually between bollards/posts before the arrival of flood or installation of a gate that can be closed across a road.

An example of a passive system involves installing flood barriers in the road bed that activate automatically when the floodwater reaches this system. Depending on the site conditions, such active or passive systems can be installed; however each of these systems has limited capacity to withstand the enormous forces exerted by flood waters. Based on research and discussions with FEMA regarding passive deployable systems, no instances where areas effected by coastal storm surge, wave action, debris loads (such as boats) and hurricane force winds could be identified where passive deployable systems were used successfully. Although there are manufacturers that promote use of passive deployable systems, these systems have not been tested fully in both lab and real field conditions.

Notwithstanding these concerns, deployable systems are required in areas where under normal circumstances access is necessary and permanent flood control measures are impractical

and/or cannot be implemented (i.e. across streets). In those cases, properly engineered sliding or swinging gates can be and have been utilized successfully in coastal environments.

Are we fixing the North Hudson Sewerage Authority (NHSA) Sewers System? How Does the DSD plan work with NHSA?

The Delay, Store, Discharge (DSD) components will work to reduce the amount of rainwater entering the existing sewer system in areas prone to flooding from rain events. Although a reduced volume of rainwater entering the sewer system will improve they system's operation, it will not solve the problems associated with the CSO. Under the EPA CSO Control Policy, the NHSA was issued CSO permits for both the Adam Street Water Treatment Plant and the River Road Sewerage Treatment Plant on March 12, 2015 (modifications were made in October 2015). In accordance with the issuance of these permits, the NHSA is required to develop long term control strategies, as part of a Long Term Control Plan (LTCP) in compliance with the requirements of the Clean Water Act. The LTCP consists of nine elements including public participation and an implementation schedule. The LTCP will be developed over the course of 59 months beginning with the submittal of a Selection and Implementation of Alternatives Report in the Final LTCP by June 1, 2020. The RBD Team will work with the NHSA throughout the development of the LTCP and the RBD process to provide consistency between the two efforts.

Why are we building walls in areas that never flooded?

Prior to European settlement, most of the land within the city limits of Hoboken (with the exception of Castle Point) was low lying marshland subject to frequent flooding. As the city developed, this historic marshland was filled. However, more than 70% of Hoboken remains below the level of the 100-year storm surge, and is therefore vulnerable to future storm surge flooding events of that magnitude or higher. One of the project goals is to see a reduction in flood insurance rates for people and businesses within the project study area. In order to accomplish this, the project must meet FEMA minimum standards to address both the 100-year storm surge event and the 100-year rainfall flooding event. The structures, as well as the locations being considered, are being developed in order to meet the FEMA minimum standards for levee certification. This standard includes an added level of safety, which translates to an increase in height of the flood risk reduction measures. Superstorm Sandy was close to a 100-year storm event but with limited wave action and very little rainfall; this is why structures are being proposed in areas beyond the extent of previously observed flood events.

PROJECT PROCESS QUESTIONS

Who set the project timeline?

One of the challenges for all of the RBD projects nationwide is the aggressive schedule mandated by the authorizing federal legislation. All RBD projects are under the same deadline and must be completed by September 2019; however, HUD has the ability to extend that deadline to no later than September 2022. Additionally, all funds must be obligated by September 2017. This means that environmental assessments and other studies must be performed, a preferred alternative must be selected, and the Draft Environmental Impact Statement must be completed as soon as possible, to give the State enough time to prepare, submit and receive HUD approval on an updated Action Plan Amendment.

Where are we in the project timeline?

The project team is completing the concept development phase of the Feasibility Study and Environmental Impact Statement. The project is moving into the alternatives analysis phase, where three concepts will advanced as build alternatives to be further developed and analyzed, as well as a "no-build" or "no-action" alternative, in order to determine a preferred alternative in the spring/summer of 2016. There will be formal opportunity for public comment in the spring/summer of 2016 before the preferred alternative for the project is selected. There will also be an opportunity during review of the Draft Environmental Impact Statement (DEIS) later in 2016. See http://www.state.nj.us/dep/floodhazard/docs/rbd-hudson-project-schedule-20151207.pdf for more information.

What has been the public process so far?

Throughout the course of the Feasibility Study and Environmental Impact Statement process, a public involvement plan has been implemented in accordance with the Project's Citizen Outreach Plan (COP). The COP was developed by DEP with community input to provide a framework for public involvement throughout the entire lifetime of the Project, of which the environmental and feasibility studies are only one part. A copy of the final COP is available on the Project website at http://www.rbd-hudsonriver.nj.gov. The COP called for establishment of two groups, each of which has been providing suggestions, comments, and other feedback to this project on an ongoing basis: the Citizen Advisory Group (CAG) and the Executive Steering Committee (ESC). The CAG is a diverse group of community members who have provided a great deal of feedback to the project team and State officials regarding the concepts. The ESC is an advisory group led by the DEP Commissioner and the mayors of the three affected communities. In accordance with the COP, public input on the project was solicited during the scoping process in September 2015.

The framework for this project was publicly announced in October 2014, when the funding for the project was awarded by HUD to the DEP. Two public meetings occurred prior to beginning the National Environmental Policy Act (NEPA) process. A January 20, 2015 meeting was held to introduce the project to the community. An additional public meeting

took place on June 23, 2015 to introduce the project team that would be performing the feasibility study and EIS work. This meeting also introduced the NEPA process and how it would proceed. The first public meeting held as a part of the NEPA process was a public meeting to solicit comments on a Draft Scoping Document. It occurred on September 24, 2015, with two follow-up meetings open to the community during the week of September 27, 2015. The public also was invited to submit written comments on the document until October 9, 2015. The Project Scoping document was revised to incorporate public comments; it was finalized on November 20, 2015, and is available at http://www.state.nj.us/dep/floodhazard/docs/rbd-hudson-river-final-scoping-document.pdf. Another public meeting was held on December 10, 2015 to review various concepts developed in accordance with the Scoping Document. Additional community follow-up meetings took place on December 14, 15, and 17, 2015.

What public agencies have been involved in the project?

The project team has been coordinating with DEP, North Hudson Sewerage Authority (NHSA), New Jersey Transit (NJT), and the U.S. Department of Housing and Urban Development (HUD). Additional agencies that have been or will be consulted with include the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS), Jersey City Municipal Sewerage Authority (JCMUA), Port Authority of New York and New Jersey, and the New Jersey Historic Preservation Office (NJHPO). The project team has also been closely coordinating with the mayors' offices of Jersey City, Weehawken and Hoboken, who are represented, along with DEP, on the project's Executive Steering Committee (ESC).

PROJECT FUNDING QUESTIONS

What must the project funding be used for?

As stated in HUD's Federal Register (FR) notice 79 FR 62182, published October 16, 2014 [Docket No. FR-5696-N-11], the $230 million award is to assist in the funding of Phase 1 of the Project. Phase 1 includes the feasibility, design and environmental analysis of the entire comprehensive project, as well as funding for the implementation of the Resist component and possibly some of the Delay, Store, Discharge (DSD) elements.

It is possible that the $230 million will not cover the cost of implementing the entire Resist, Delay, Store, Discharge components as currently conceived, so consideration will be given to phasing in certain aspects of the project.

Can we guarantee that people near the resist structure (if built) will not flood more than previously? What happens to the water when it reaches the structure(s)? Will homes that didn't flood before be at risk because of the structure(s)? Will the walls create flooding in areas that were never flooded before?

Experts are performing storm surge and rainfall modeling, which will enable us to project the probable effects of each concept under various conditions. Pursuant to N.J.A.C. 7:13 Flood Hazard Area Control Act Rules, if a proposed resist structure causes increased flooding in an area beyond flood levels that exist without the structure, that structure or approach will have to be modified, mitigated, or moved or it will not advance.

Would a flood wall or flood resiliency structure restrict access to emergency vehicles such as ambulances and fire trucks? Would these structures impede deliveries and garbage removal or otherwise impede traffic flow?

The Resist structure's potential impacts on vehicular and pedestrian access, including emergency vehicles, public service vehicles and private vehicles must be considered on both a short-term basis (during construction) and over the long-term (once construction is complete). The Resist structure's effect on the community's accessibility during flood events will also be evaluated. These effects will be weighed against flood risk reduction values during the alternatives analysis and will help inform the selection of the preferred alternative. Part of the process of the alternatives analysis is to develop emergency routes that can be used to provide necessary services to the citizens in the project area during a storm regardless of the location of resist barriers. All resist barriers will be designed and constructed to avoid and/or minimize long term impacts on any vehicular access.

APRIL 7, 2016
URBAN DESIGN

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RESIST TOOL KIT

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JULY 28, 2016
ALTERNATIVES ANALYSIS WORKSHOP

REBUILD BY DESIGN HUDSON RIVER: ▪ RESIST ▪ DELAY ▪ STORE ▪ DISCHARGE ▪

ALTERNATIVES ANALYSIS MATRIX (07.28.16)

Dewberry | State of New Jersey Department of Environmental Protection

Category	Criteria		ALT-1 Option 1	ALT-1 Option 2	ALT-2 Option 1	ALT-2 Option 2	ALT-3 Option 1	ALT-3 Option 2	No Action Alternative (Baseline)
Purpose and Need (P&N)	Meets P&N (Y/N)		Y	Y	Y	Y	Y	Y	N
Flood Risk Reduction	Coastal Storm Surge Risk Reduction for Residents	Percentage of Population **in Floodplain** Receiving Risk Reduction (2010 Census)	98		86		85		0
		Percentage of Study Area in Floodplain Receiving Flood Risk Reduction	83	82	74	73	73	72	0
	Critical Facilities **NOT** Receiving Coastal Flood Risk Reduction		None		One (Fire Station, 1313 Washington Street)		One (Fire Station, 1313 Washington Street)		One Hospital (308 Willow Avenue) Four Fire Stations (201 Jefferson St, 43 Madison St, 801 Clinton St, 1313 Washington St) NHSA Water Treatment Plant (1600 Adams St.)
	Potential to Adapt to Higher Coastal Flood Events		Yes						No
	Potential Runoff to be Managed by DSD Components		Up to 7 million gallons						0
Socioeconomics and Built Environment	Environmental Justice Populations Receiving Flood Reduction Benefits		Rainfall: 2,053 Hispanic individuals, 1,883 Minority individuals, and 968 Households below poverty level Coastal Surge: 2,785 Hispanic individuals, 2,251 Minority individuals, 309 over 75 individuals, and 520 Households below poverty						Environmental Justice communities would remain exposed to flood risks
	Public Health Benefits (acreage no longer flooding during 5 Year rainfall events)		48.1 acres with reduction in flooding severity, including 35.5 acres no longer flooding						No benefit to Public Health. Flood events will continue to represent an adverse impact to Public Health
	Possible Potential Viewshed Impacts	Residential Impacts	1st/2nd floor of properties on N. side of 15th St from Garden St to Sinatra Dr. N, and first floor of properties along Sinatra Dr. N.		1st floor residential properties fronting 15th St from Garden to Washington and along Washington St. from 15th to 13th St.		Residential properties along Washington St. from 15th to 13th St.		None
		Recreational Impacts	1600 Park ballfields, Shipyard Park, and Hudson River walkway from Weehawken Cove to Sinatra Dr. N to 11th St		1600 Park Ballfields		1600 Park Ballfields		None
		Retail/Dining Impacts	1st floor businesses: Shops at Lincoln Harbor. 1st floor businesses along Sinatra Dr. N. and Sinatra Dr. (south)		Businesses along Washington St. from 15th to 13th St.		Businesses along Washington St. from 15th to 13th St.		None
	Length of Waterfront Access Impacted (ft)		7,950		150		150		0
	Acres of New or Improved Park Space		13.85		8.9		7.9		0
	Connectivity and Circulation	Number of Parking Spaces Impacted	2	0	15	13	9	7	0
		Number of Gate Closures during Storm Conditions	29	31	21	25	19	23	0
Benefit Cost Analysis	Benefits for Resist (in millions)		$1,448M		$1,417M		$1,416M		-
	Estimated Resist Cost (in millions)		$440-$482	$451-$492	$201-$224	$212-$232	$189-$210	$200-$225	-
	Estimated Resist Cost Contingency (in millions)		$96-$107	$99-$110	$43-$49	$45-$50	$40-$45	$43-$49	-
	Total Resist Cost (in millions)		$537-$589	$550-$602	$243-$273	$258-$282	$230-$255	$243-$274	-
	Resist Benefit/Cost Ratio		2.24		4.74		4.95		-
	Total Project Benefit/Cost Ratio (includes Resist and DSD)		2.21		3.83		3.94		-
Construction / Maintenance and Operations	Constructability	Number of Private Parcels Requiring Easements	15	15	6	6	6	6	0
		Potential Utility Relocation (linear feet)	4,860	4,600	2,300	2,060	1,280	1,030	0
		Potential Utility Crossings	87	86	69	69	64	64	0
	Temporary Construction Impacts (acres)		29.4	29.3	30.1	30.2	29.8	29.9	None
	Estimated Annual Maintenance Cost (millions)		$3.6-5.4	$3.7-5.5	$1.5-2.4	$1.6-2.6	$1.4-2.3	$1.5-2.4	-
Environmental Impacts	Recognized Environmental Conditions (RECs)	Number of REC Properties Affected	43	46	45	49	45	49	0
		Estimate of hazardous soils requiring off-site disposal (tons)	22,255	22,102	19,621	19,556	19,466	19,407	0
		Estimate of non-hazardous soils requiring off-site disposal (tons)	128,738	128,163	118,829	118,583	118,246	118,024	0
	Freshwater Wetlands	Freshwater Wetlands Within Footprint (Square Feet)	230						0
	Threatened and Endangered Species/ Essential Fish Habitat	Impacts to T&E and Essential Fish Habitat	Potential for minor impacts due to in-water work along waterfront. Negligible impacts from new outfalls		Negligible in-water impacts from new outfalls		Negligible in-water impacts from new outfalls		None
	State and Federal Environmental Permitting	NJDEP Flood Hazard Act (NJAC 7:13) Permit	Individual Permit						None
		Acreage of Floodplain Disturbance	7.54 ac Permanent 27.61 ac Temporary	7.57 ac Permanent 27.84 ac Temporary	5.81 ac Permanent 27.87 ac Temporary	5.85 ac Permanent 28.22 ac Temporary	5.76 ac Permanent 27.41 ac Temporary	5.80 ac Permanent 27.77 ac Temporary	None
		Number of Properties (by owner) Potentially Impacted (pursuant to NJAC 7:13), both Public and Private	2 properties potentially impacted (pursuant to NJAC 7:13)		5 properties potentially impacted (pursuant to NJAC 7:13)		5 properties potentially impacted (pursuant to NJAC 7:13)		None
		NJDEP Wetlands Permitting (NJAC 7:7A)	Individual Permits (for in-water work associated with bulkhead replacement)		General Permit (for proposed outfalls and work in wetlands)		General Permit (for proposed outfalls and work in wetlands)		None
		USACE Sections 10 and 404 Permitting	Individual Permit (for in-water work associated with bulkhead replacement)		Nationwide Permit (for proposed outfalls)		Nationwide Permit (for proposed outfalls)		None
	Historic Properties	Number of historic properties or districts with adverse effect	45	45	61	61	60	60	0
	Archaeological Resources	Acres of potential archaeological resources affected by the alternative	16.64	16.60	15.42	15.54	14.40	14.52	0
	Noise	Number of Noise Receptors during Construction	Schools - 4 Parks - 13 Places of Worship - 3	Schools - 4 Parks - 13 Places of Worship - 3	Schools - 0 Parks - 4 Places of Worship - 2	Schools - 0 Parks - 4 Places of Worship - 2	Schools - 0 Parks - 4 Places of Worship - 2	Schools - 0 Parks - 4 Places of Worship - 2	0

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REBUILD BY DESIGN HUDSON RIVER: ▪ RESIST ▪ DELAY ▪ STORE ▪ DISCHARGE ▪

ALTERNATIVES ANALYSIS MATRIX DEFINITIONS (07.28.16)

Dewberry | State of New Jersey Department of Environmental Protection

Category	Criteria		Definition of Criteria and Metrics
Purpose and Need (P&N)	Meets P&N		The purpose of the Project is to reduce the flood risk to flooding areas within the Study Area. The Project intends to minimize the impacts from surge and rainfall flood events on the community, including adverse impacts to public health, while providing benefits that will enhance the urban condition, recognizing the unique challenges that exist within a highly developed urban area. This criterion measures whether each alternative meets the P&N.
Flood Risk Reduction	Coastal Storm Surge Risk Reduction for Residents	Percentage of Population **in Floodplain** Receiving Risk Reduction (2010 Census)	This criterion measures the percentage of the population within the Study Area within FEMA 2015 preliminary 100-year floodplain that receives coastal storm surge flood risk reduction benefits from the Resist feature. Larger percentage of the Study Area population protected is considered better.
		Percentage of Study Area in Floodplain Receiving Flood Risk Reduction	This criterion measures the percentage of the Study Area within the FEMA 2015 preliminary 100-year floodplain that receives coastal storm surge flood risk reduction benefits. Larger area of Study Area protected is considered better.
	Critical Facilities **NOT** Receiving Coastal Flood Risk Reduction		FEMA has identified a list of critical facilities (hospitals, fire stations, police stations and facilities that store critical records). The North Hudson Sewerage Authority (NHSA) Treatment Plant is also considered a critical facility by the community. This criterion identifies critical facilities within the FEMA 2015 preliminary 100-year floodplain that would NOT receive coastal storm flood reduction benefits for each alternative. Fewer critical facilities left unprotected is considered better.
	Potential to Adapt to Higher Coastal Flood Events		This criterion considers whether the north and south ends of the Resist feature ties into landforms which could be used to support construction of a resist barrier to handle a 500-year (0.2 percent annual chance) storm.
	Potential Runoff to be Managed by Delay, Store, Discharge (DSD) Components		The DSD components of the project address rainfall flooding. This provides a measurement of the estimated total volume of runoff that the system is projected to be able to handle.
Socioeconomics and Built Environment	Environmental Justice Populations Receiving Flood Reduction Benefits		Federally-funded projects cannot disproportionately impact Environmental Justice communities - those that are made up primarily by low-moderate income households, minority populations, individuals over 75, and Hispanics. Instead of posing an impact, however, this project benefits these communities by reducing flood risk. This criterion provides a measurement of the estimated Environmental Justice population (based on Census data) that will receive rainfall flood risk reduction benefits from the Delay, Store, Discharge components during a 5-year rainfall event or during a 100-year coastal surge event.
	Public Health Benefits (acreage no longer flooding during 5 Year rainfall events)		Rainfall-induced combined sewage overflows onto streets and inside buildings represents a public health risk. This criterion considers the area that currently floods during a 5-year rainfall event and compares it to the areas that 1) no longer floods and 2) may continue to flood but sees a reduction in that flooding due to the DSD features.
	Viewshed Impacts	Residential Impacts	This criterion evaluates the changes in character and quality of views for residents, recreational users and businesses from representative viewpoints along the waterfront with the proposed project compared to existing conditions. Fewer viewshed impacts is considered better.
		Recreational Impacts	
		Retail/Dining Impacts	
	Length of Waterfront Access Impacted (feet)		This criterion considers the linear length along the Hudson River shoreline where new Resist features would impact pedestrian access to the waterfront bulkhead. Within these locations, pedestrians would be required to access the new bulkhead by a series of steps or ramps. Shorter length of waterfront access impacted is considered better.
	Acres of New or Improved Park Space		The criterion considers the net acreage of park space that is either created or improved upon. This takes into account that some areas of proposed park ares are located where a park already exists, such as portions of the Cove Park at Weehawken Cove. Greater acreage of new or improved park space is considered better.
	Connectivity and Circulation	Number of Parking Spaces Impacted	This criterion provides a tally of the on-street parking spaces that would potentially be permanently impacted by the proposed Resist alignment. Fewer parking spaces impacted is considered better.
		Number of Gate Closures during Storm Conditions	This considers the number of gate closures that would be required during storm surge events. This could potentially impact street and pedestrian access in the hours leading up to a storm event. Fewer number of gates is considered better.
Benefit Cost Analysis	Benefits		This criterion considers the benefit of the Resist portion of the project, which includes the following: estimated value of avoided flood damages; avoided loss of function (residential displacement, non-residential business and/or service losses); socioeconomic benefits (mental stress and anxiety, lost productivity); and environmental benefits (open space). A higher benefit value is considered better.
	Estimated Resist Cost		This is the estimated cost for the Resist feature. This includes final design, project management, engineering and construction costs. A lower cost is considered better.
	Estimated Resist Cost Contingency		This criterion considers that based on the current design effort (feasibility stage) there are potential unforeseen costs for the next stage of the project. These costs are approximately 22% of the Resist construction cost.
	Total Resist Cost		This criterion represents the overall cost of the Resist feature (including final design, project management, engineering, construction and project contingencies). A lower Resist cost is considered better.
	Resist Benefit/Cost Ratio		This metric is a number which is calculated by dividing benefits by total Resist cost as described above. A Benefit Cost Ratio above one means the project's benefits outweigh its costs.
	Total Project Benefit/Cost Ratio (includes Resist and DSD)		This metric is a number which is calculated by dividing benefits by Resist costs including DSD. A Benefit Cost Ratio above one means the project's benefits outweigh its costs.
Construction / Maintenance and Operations	Constructability	Number of Private Parcels Requiring Easements	The criterion considers three metrics. The first metric is the number of private parcels where temporary easements are required for construction access or where permanent easements are required for installation of Resist features. The second metric is the estimated linear feet of utilities which could potentially require relocation to enable infrastructure construction. The third metric is the estimated number of utility crossing. Fewer number of private parcels requiring easements and fewer utility impacts are considered better.
		Potential Utility Relocation (linear feet)	
		Potential Utility Crossings	
	Temporary Construction Impacts (acres)		This criterion provides a measure of the temporary construction areas that may be impacted through the construction of the project. It considers the overall estimated Limits of Disturbance (LOD) for the Resist, Delay, Store and Discharge features of the project. A smaller area of temporary construction impacts is considered better.
	Estimated Annual Maintenance Cost (millions)		This criterion provides an estimated range of cost for annual operations and maintenance for the Resist feature. The largest drivers of operations and maintenance cost are the overall size of the proposed structures/facilities and the number of gates associated with the Resist feature.
Environmental Impacts	Recognized Environmental Conditions (RECs)	Number of REC Properties Affected	This criterion provides a measurement of the number of potentially contaminated properties that would be encountered during construction of the project. It considers those sites that were determined by the Hazardous Waste investigation to be a REC to the project. These are sites that have unresolved soil and/or groundwater contamination issues. Fewer RECs impacted is considered better.
		Estimate of Hazardous Soils Requiring Off-Site Disposal (tons)	This considers the amount of hazardous soils that will need to be disposed of off-site. Because subsurface investigations have not been conducted, it is assumed that 10% of the soils encountered may be considered above "hazardous" thresholds. A smaller volume of soils requiring disposal is considered better.
		Estimate of Non-Hazardous Soils Requiring Off-Site Disposal (tons)	This considers the amount of non-hazardous soils that will need to be disposed of off-site. Because subsurface investigations have not been conducted, it is assumed that 90% of the soils encountered may be considered non-hazardous. For these soils, it is possible that they can be re-used on-site under certain circumstances, reducing the need (and expense) to dispose of at an off-site facility. This has been reflected in the amounts identified on the matrix for this criterion. A smaller volume of soils requiring disposal is considered better.
	Freshwater Wetlands	Freshwater Wetlands Within Footprint (square feet)	Freshwater wetlands were delineated as part of the project. This criterion identifies the area of freshwater wetlands that would fall within the footprint of proposed areas of disturbance.
	Threatened and Endangered (T&E) Species/ Essential Fish Habitat	Impacts to T&E and Essential Fish Habitat	The metric for this criterion is a qualitative metric which considers the potential for impact on the Essential Fish Habitat for smooth dogfish, summer flounder, bluefish, and Atlantic butterfish as well as to the listed Atlantic and Shortnose sturgeons.
	State and Federal Environmental Permitting	NJDEP Flood Hazard Act (NJAC 7:13) Permit	This criterion considers whether permitting would be required under NJAC 7:13 (New Jersey Flood Hazard Control Act).The type of permit is identified. An individual permit would require a more significant level of effort to obtain as compared to a general permit or permit-by-rule.
		Acreage of Floodplain Disturbance (pursuant to NJAC 7:13)	This criterion considers the acreage of disturbance within the floodplain. This considers permanent impacts (which may include areas where new above-ground features are proposed) as well as temporary impacts (which may includes areas where below-grade features are proposed or areas where work is otherwise temporary in nature). A smaller acreage of floodplain impacts is considered better.
		Number of Properties (by owner) Potentially Impacted (pursuant to NJAC 7:13), both Public and Private	NJAC 7:13 (New Jersey Flood Hazard Control Act) requires consideration of impacts from proposed actions within the floodplain. The number of properties that may experience additional flood depth of up to 1 inch greater than existing conditions was determined based on coastal modeling. Fewer properties potentially impacted is considered better.
		NJDEP Wetlands Permitting (NJAC 7:7A)	This criterion considers whether permitting would be required under NJAC 7:7A (New Jersey Freshwater Wetlands Protection Act).The type of permit and the reason for the anticipated permit is identified. An individual permit would require a more significant level of effort to obtain as compared to a general permit.
		USACE Sections 10 and 404 Permitting	This criterion considers whether permitting would be required under Sections 10 and/or 404 of the Clean Water Act. The type of permit and the reason for the anticipated permit is identified. An individual permit would require a more significant level of effort to obtain as compared to a nationwide permit.
	Historic Properties	Number of Historic Properties or Districts with Adverse Effect	The metric for this criterion is the number of properties or districts on or eligible for the National Register of Historic Places which may be adversely affected by an alternative. Fewer historic properties/districts affected is considered better.
	Archaeological Resources	Acres of Potential Archaeological Resources Affected by the Alternative	The metric for this criterion is the square footage of potential archaeological sites which are on or eligible for the National Register of Historic Places which could be impacted by the Project. A smaller area of potential archaeological resources impacted is considered better.
	Noise	Number of Noise Receptors During Construction	This considers the number of sensitive noise receptors that could be impacted during construction operations. Sensitive noise receptors include schools, parks, and places of worship. Fewer noise receptors impacted is considered better.

REBUILD BY DESIGN

▪ RESIST ▪ DELAY ▪ STORE ▪ DISCHARGE ▪

HUDSON RIVER

Hoboken Weehawken Jersey City | New Jersey

LIST OF ACRONYMS

Acronym	Meaning
BFE	Base Flood Elevation
CAA	Clean Air Act
CAG	Citizen Advisory Group
CDBG-DR	Community Development Block Grant - Disaster Recovery
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COP	Citizen Outreach Plan
CRS	Community Rating System
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EJ	Environmental Justice
ESC	Executive Steering Committee
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FR	Federal Register
GI	Green Infrastructure
HUD	U.S. Department of Housing and Urban Development
NEPA	National Environmental Policy Act

Acronym	Meaning
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHSA	North Hudson Sewerage Authority
NJDEP	New Jersey Department of Environmental Protection
NJHPO	New Jersey Historic Preservation Office
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NR	National Register
OMA	Office of Metropolitan Architecture
PANYNJ	Port Authority of New York and New Jersey
RBD	Rebuild by Design
REC	Recognized Environmental Condition
ROD	Record of Decision
SME	Subject Matter Expert
TCT	Technical Coordination Team
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service

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Rebuild by Design Hudson River: ▪ Resist ▪ Delay ▪ Store ▪ Discharge ▪

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REBUILD BY DESIGN

▪ RESIST ▪ DELAY ▪ STORE ▪ DISCHARGE ▪

HUDSON RIVER

Hoboken Weehawken Jersey City | New Jersey

HISTORIC PROPERTIES/SECTION 106

WHY ARE HISTORIC PROPERTIES RELEVANT TO THE PROJECT?

Federally funded projects, by law, must involve the public where historic properties may be affected by the proposed action.

1 INITIATE - WHAT IS HAPPENING?

- Establish the Undertaking - Develop Resist, Delay, Store, Discharge Infrastructure
- Notify the State Historic Preservation Officer (SHPO) → New Jersey Historic Preservation Office (NJHPO)
- Involve the Public including the Citizens Advisory Group (CAG), Executive Steering Committee (ESC) and Public
- Consulting parties - Federal and State Agencies

2 IDENTIFY HISTORIC PROPERTIES - WHAT CAN THE PROJECT AFFECT?

- Scope - Defined by Project Elements
- Above Ground Survey of Historic Architectural Resources
- Identify Areas of Archaeological Potential
- Surveyed Historic Properties Evaluated for National Register Eligibility
- NJHPO Reviews Eligibility Recommendations
- Involve the Public

3 ASSESS ADVERSE EFFECTS TO HISTORIC PROPERTIES

- Criteria of Adverse Effect - Determine if the Project may Directly or Indirectly Change a National Register Eligible Historic Property
- If Historic Properties are Adversely Affected - Develop Resolution of Adverse Effects
- If no Historic Properties Affected, then the Section 106 Process is Concluded
- Public Input to Assess Adverse Effects

4 RESOLVE ADVERSE EFFECTS

- Consulting Parties and NJHPO, Work with the Public to Address Adverse Effects
- Avoid, Redesign or Mitigate Adverse Effects
- Memorandum of Agreement Outlines the Mitigation Plans
- Agreement between Consulting Parties and Advisory Council on Historic Preservation (ACHP)
- Signed Memorandum of Agreement → Section 106 Process Concluded