Station 1: *Resist Concept A & E
Station 2: Resist Concept C & D
Station 3: Resist Concept B
Station 4:**Delay, Store, Discharge
Station 5: Combined Resist Alignments
Station 6: Existing Conditions

* Resist = Coastal Flood Protection
**Delay, Store, Discharge = Rainfall Protection
AGENDA

1. Open House (10 minutes)
2. Introductions (5 minutes)
3. Project Status (5 minutes)
4. Concept Development Background (15 minutes)
   - Delay/Store/Discharge
   - Resist
5. Overview of Five Concepts (10 minutes)
6. Breakout Sessions (90 minutes)
7. Wrap-up – Final Q & A (15 minutes)
8. Open House (20 minutes)
WHY ARE WE HERE? (NEED) – REDUCE FLOOD RISK

Legend:

- - - Limit of AE-Zone
  1% Annual Flood Chance

- - - Limit of VE-Zone
  1% Annual Flood Chance

- - - Limit of B-Zone
  0.2% Annual Flood Chance

AE-Zone
1% Annual Flood Chance

VE-Zone
1% Annual Flood Chance

B-Zone
0.2% Annual Flood Chance

-- Municipal Boundaries
-- Study Area
--- Ferry Lines
--- Shoreline

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

Dewberry
DEPARTMENT OF ENVIRONMENTAL PROTECTION
PURPOSES OF TONIGHT’S MEETING

• Project update and review of 5 Concepts
• Review of concept screening and results
• Provide feedback throughout the month
PROJECT STATUS

RBD
Feasibility & NEPA Process
Final Design of Preferred Alternative
Construction
Project Closeout and Completion

1 YEAR  1.5 YEAR  2 YEARS  3.5 YEARS  3 MONTHS


we are here
CONCEPT SCREENING CRITERIA AND METRICS

- Criteria are factors that help us evaluate the concepts in terms of:
  - Meeting Purpose and Need
  - Potential Benefits to the Community
  - Potential Impacts to the Natural and Built Environment

- Metrics are how we measure the criteria.

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>Flood Risk Reduction</th>
<th>Built Environment</th>
<th>Environmental Impacts</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>METRIC</td>
<td>% of Population receiving flood risk reduction</td>
<td>Number of new amenities created</td>
<td>Number of Historic Properties Affected</td>
<td>Degree of difficulty to construct</td>
</tr>
</tbody>
</table>
QUALITATIVE METRICS - BUILT ENVIRONMENT

View Corridors

GOOD
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.

FAIR
Little to moderate impact on views from the city to the water (few barriers over 5’ in height).

POOR
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).
QUANTITATIVE METRICS

Coastal Flood Risk Reduction

Within the 100-year floodplain boundary...

50% of the Study Area receives flood risk reduction benefits.
OVERALL STRATEGY

- Design proposal aims to maximize the potential to capture, store, infiltrate, evaporate, and release stormwater.
- Goal is to achieve community co-benefits while improving management of stormwater that could reduce rainfall flooding.
- Besides BASF site, all stormwater management strategies are entirely on publicly-owned land.
- Proposal uses both “green” and “grey” stormwater management strategies.
- The team considered physical, environmental and infrastructure constraints in locating and designing specific interventions.

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

REBUILD BY DESIGN HUDSON RIVER: RESIST • DELAY • STORE • DISCHARGE
CONCEPT A
(12/10) DRAFT IDEAS FOR DISCUSSION PURPOSES ONLY

Least costly resist barrier which provides the least coastal storm surge risk reduction benefits to the study area.

- Approximately 46% of people in the study area receive flood risk reduction benefits.
- 8,100 to 8,400 linear feet of structure and 51 gates.
- North Waterfront takes Boathouse into account.
- North Hoboken on-street protection provided along Garden Street until elevation 6 ft.
- Hoboken Terminal does not receive flood risk reduction benefits.
- South Waterfront constructed independent of Longfellow 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
- MINDEP: Approx. Min. FEMA Certification
- MAX DFE: Approx. 500-Year ± 2075
- NOAA-SUR

Option 1
Option 2
CONCEPT B

High coastal storm surge risk reduction with substantial resist structure construction in the northern study area.
- Approximately 98% of people in the study area receive flood risk reduction benefits.
- 15,430 linear feet of resist structure and 51 gates.
- 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 Long Island Canal.
- Permanent movable gates proposed to address flood risk reduction along the upwarp.

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
- Reserved for Approx. Min. FEMA Certification
- MAX DFE: Approx. 500 Year + 2075
-剥夺 DFEs are Approximate and Subject to Change

(12/10) DRAFT IDEAS FOR DISCUSSION PURPOSES ONLY
CONCEPT C

(12/10) DRAFT IDEAS FOR DISCUSSION PURPOSES ONLY

- Resist
- Delay
- Store
- Discharge

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-8

All DFEs are Approximate and Subject to Change

Department of Environmental Protection

REBUILD BY DESIGN HUDSON RIVER: RESIST DELAY STORE DISCHARGE

Dewberry
CONCEPT D

High construction cost which provides highest coastal storm surge risk reduction with no free standing, in-water revetments.

- Approximately 90% of people in the study area receive flood risk reduction benefits.
- 10,000 linear feet of revet structure and 32 gates.
- North Riverfront offers Lincoln Tunnel Terminal.
- Permanent built structures on North Waterfront provide flood risk reduction benefits.
- Programmed bulkheads offer added economic benefits, while providing flood risk reduction benefits.
- South Waterfront constructed assuming the proposed construction of the Long Island 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
- Flood Wall
- T Wall
- Ramp

- Study Area
- FEMA Lines
- Preliminary FEMA 100-year Flood Plain

MIN-DPI: Approx. 1% 300-year + 2075
MAX-DPI: Approx. 500-year + 2075

NOAA-AQ

All DIPs are Approximate and Subject to Change

Department of Environmental Protection

(12/10) DRAFT IDEAS FOR DISCUSSION PURPOSES ONLY
CONCEPT E

Moderate coastal flood risk reduction benefits within the study area at moderate cost.

- Approximately 50% of people in the study area receive flood risk reduction benefits.
- 13, 910 linear feet of resist structure and 15 gates.
- North waterfront takes Bushhouse into account.
- North Hoboken on-street protection provided along Hudson Blvd (Option 1) and Shipyard Lane (Option 2) until elevation 6 ft.
- 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 - Sliding
- 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 SUR
- All DFEs are Approximate and Subject to Change

(12/10) DRAFT IDEAS FOR DISCUSSION PURPOSES ONLY

REBUILD BY DESIGN HUDSON RIVER: RESIST • DELAY • STORE • DISCHARGE •
Breakout Session

Station 1: Resist Concept A & E
Station 2: Resist Concept C & D
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Station 6: Existing Conditions

* Resist = Coastal Flood Protection
**Delay, Store, Discharge = Rainfall Protection
Q&A AND NEXT STEPS

- **December 2015** - Public comment period on 5 concepts ends Dec. 31, 2015
- **January 7th 2016** – CAG meeting open to public to discuss the 3 concepts going forward
- **Spring 2016** - Public meeting on 3 build alternatives and no action alternative

Still Have Questions?

**December 14th 6:00 pm**
Hoboken Walking tour (Historical Museum)

**December 15th 6:30 – 8:30 pm**
Drop in Session follow up to Public Meeting
(St. Lawrence Church Community Room, 22 Hackensack Ave., Weehawken)

**December 17th 6:30 – 8:30 pm**
Drop in Session follow up to Public Meeting
(Hoboken Housing Authority Senior Building, 221 Jackson St., Hoboken)