NORTH BATTERY PARK CITY RESILIENCY PROJECT

ALL-AGENCY COORDINATION MEETING

November 22, 2019
AGENDA

1. INTRODUCTIONS
2. PROJECT OVERVIEW
3. AGENCY COLLABORATION + DISCUSSION
4. NEXT STEPS
NBPC CONSULTANT TEAM
KEY TEAM MEMBERS

Alim Baycara, PE, LEED AP  
Project Executive

Garrett Avery, ASLA  
Project Manager

Serena De Stefano  
Deputy Project Manager

Mark Foster, PE  
Engineering Lead

Susan Bemis, AICP  
Public Realm Design Lead

Andrea Rosenthal, EIT, ENV-SP  
Environmental Lead

Teresa Gonzalez  
Partner and Stakeholder Engagement

Nora Madonick  
Community Engagement

Wael Youssef, PE  
Structural Engineering

Helder De Almeida, PE  
Hydrological Team Lead

Samara Daly  
Partner and Stakeholder Engagement

Ibrahim Abdul-Matin  
Partner and Stakeholder Engagement

Mike Seering, PE  
FEMA Certification
PROJECT OVERVIEW
RESILIENCY MEASURES | BATTERY PARK CITY

NORTH BATTERY PARK CITY RESILIENCY

BCP BALLFIELDS RESILIENCY

WEST BATTERY PARK CITY RESILIENCY

SOUTH BATTERY PARK CITY RESILIENCY

2050s 100-YR FLOODPLAIN
PROJECT STUDY AREA

NORTH BATTERY PARK CITY RESILIENCY

2050s 100-YR FLOODPLAIN
PROJECT SCOPE

- Conceptual design through construction documentation
- Integrate resiliency measures to improve risk-reduction for BPCA and City of New York
- Community, Partner, and Stakeholder Engagement
- Collaboratively develop long-term Operations & Maintenance Plans
- Achieve FEMA certification/accreditation
CONCEPTUAL ALIGNMENT DEVELOPMENT
TOPOGRAPHY | LOW POINT

*TOPO TO BE VERIFIED BY SURVEY

2050s 100-YR FLOODPLAIN
POTENTIAL PROJECT STAKEHOLDERS

- NYC Parks
- BMCC
- Stuyvesant High School
- Tribeca Pointe Condominiums
- Hudson River Park Trust
- NYCDOT
- NYSDOT
- 2050s 100-YR FLOODPLAIN
POTENTIAL DESIGN ZONES

- Pedestrian Areas
- Route 9A
- Streets
- West Battery Park City Resiliency
CONCEPTUAL ALIGNMENTS | EVALUATION OPTIONS

NORTH ESPLANADE

N. MOORE STREET

HARRISON STREET

CHAMBERS STREET

NORTH ESPLANADE

2050s 100-YR FLOODPLAIN
NORTH ESPLANADE
NORTH ESPLANADE | PROPOSED ALIGNMENT OPTIONS
NORTH ESPLANADE | STUDY CONDITIONS

- Relieving platform below structural sidewalk and structural column-supported stairwells / ramp system
- Existing Seawall flush with adjacent sidewalk; existing railing with columns spaced approx. every 50’
  - Option 1 – Convert relieving platform to bulkhead; elevate existing seawall and meet DFE with vertical deployable.
  - Option 2 – Retrofit existing structures (Stuyvesant High School and Tribeca Pointe Condominium) to act as flood barrier; structurally reinforcing foundation and architectural walls, openings (windows/doors/vents), wet-proofing basements to manage hydrostatic uplift
ROUTE 9A
ROUTE 9A | PROPOSED CONDITIONS | OPTION 1-2
Deployable flip-up gates become Bikeway surface; intermittent fixed wall segments where needed

- Length from North Esplanade: +380 ft // Wall Height: 6' // Width: 9' // Gates: 8
- Likely least permanent visual impact along this segment
- Concern for significant utility conflicts, including relocations, increased separation distances, potential loss of street trees along West Street and some located within HRPK due to FEMA requirements
Fixed wall along east edge of Bikeway; DFE met using vertical deployable stowed within wall

- Length from North Esplanade: +380 ft // Wall Height: 5’ // Width: 42” // Gates: 2
- Second least permanent visual impact along this segment
- Concern for significant utility conflicts, including relocations, increased separation distances and loss of street trees along West Street due to FEMA requirements
Fixed wall along NYS DOT right-of-way / parallel to BMCC building façade

- Length: +365 ft  // Wall Height: 3'-8'  // Width: 18"  // Gates: 3
- Minimizes Potential Visual Impact to pedestrians, cyclists and vehicular viewers along Hudson River; minimizes disruption to HRPK, provides opportunity for artist collaboration / public art integration
- Concerns for Interference with BMCC Façade (egress, windows, venting); existing utilities; minimal wave overtopping distance between wall and building façade; loss of street trees along West Street due to FEMA requirements
- Would require Easement and long-term O&M coordination with DASNY / CUNY / BMCC
ROUTE 9A CROSSING | MULTIPLE LOCATIONS

- Average Length: +160 ft // Wall Height: 8-9’ // Depth: 5’ // Gates: 3-4
- Deployable flip-up gates across Bikeway, Route 9A, with intermittent fixed wall segments
- Concern for significant utility conflicts, including relocations, increased separation distances, operational design requirements per NYSDOT, NYCDOT, NYCDEP, OEM/DHS/JTT, etc.
N. MOORE STREET
N. MOORE STREET

N MOORE STREET ALTERNATIVE

WEST BATTERY PARK CITY RESILIENCY

2050s 100-YR FLOODPLAIN
Fixed wall of variable height with deployables at driveways, loading docks, and local street crossings

- Length from Harrison: +1150 ft
- Wall Height: 8’ to 6”
- Width between 18”-24”
- Gates: 4-6

- Deployable flip-up or roller gates at driveways, loading docks, local street crossings to reduce deployment time and minimize coordination (storage, staffing, etc.)

- Located at back of sidewalk (NYSDOT right-of-way) along Route 9A; located along existing southern curb line on N. Moore Street to minimize significant utility/vault conflicts; curb re-established 2’-4’ north of existing in current parking lane

- Concern for proximity to segment of BMCC North façade; alignment parallel to utilities/ConEd steam service; length of segment east of Greenwich into Historic District; loss of street trees along alignment
HARRISON STREET
HARRISON STREET | PROPOSED CONDITIONS | OPTION 1

Fixed wall with variable height with deployables at openings and crossings

- Length from Route 9A: 500 ft
- Wall Height: 8’ to 6”
- Width between 18”-24”
- Gates: 3-4

- Deployable flip-up gates at openings and crossings to reduce deployment time and minimize coordination (storage, staffing, etc.)
- Located along street tree/parkway zone to minimize conflict with street and sidewalk operations
- Possible regrading of the intersection at Greenwich St. to avoid closure/crossing
- Concern for potential visual impact, construction (noise/vibration) impacts to Historic/Landmark Properties, proximity to BMCC façade, and loss of street trees per FEMA requirements
HARRISON STREET | PROPOSED CONDITIONS | OPTION 2

Fixed wall with variable height with deployables at openings and crossings

- Length from Route 9A: 500 ft
- Wall Height: 8’ to 6”
- Width between 18”-24”
- Gates: 3-4

- Deployable flip-up gates at openings and crossings to reduce deployment time and minimize coordination (storage, staffing, etc.)
- Located along street tree/parkway zone to minimize conflict with street and sidewalk operations
- Possible regrading of the intersection at Greenwich St. to avoid closure/crossing
- Concern for potential visual impact, construction (noise/vibration) impacts to BMCC, and loss of street trees per FEMA requirements
CHAMBERS STREET
CHAMBERS STREET | PROPOSED CONDITIONS
AGENCY COLLABORATION
AGENCY COLLABORATION

Although the alignment has not been determined, West Street (9A) must be crossed and a City sidewalk/street must be altered. Existing configuration of utilities and roadway elements are generally similar in all locations.

Configuration of proposed elements is also anticipated to be largely similar regardless of location.

Given strong typologies, our goal is to expeditiously initiate technical coordination of the following:

- Detailed Existing Conditions
- Operational Requirements
- Utility Relocations / Utilities to be Protected-in-Place
- Conduit/pipe resiliency measures
- Grading and Affected Streetscape Elements
NEXT STEPS

- Direct technical coordination and additional data requests
- Continued site investigations: detailed utilities survey and geotechnical borings
- Integrated Coastal and Interior Drainage Modeling refinement
- Continued design development of flood alignment
- **January 2020**: Community Meeting #2 – Alignment Evaluation + Preliminary Design Concepts
QUESTIONS + COMMENTS?

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