AGENDA

1. YOUR TEAM
2. PURPOSE + NEED + BACKGROUND
3. SITE OVERVIEW
4. RESILIENCY MEASURES
5. Q+A
6. NEXT STEPS
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YOUR 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

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

Nora Madonick
Community Engagement
ORGANIZATIONAL CHART

BATTERY PARK CITY AUTHORITY

PROJECT EXECUTIVE
ALIM BAYCORA (AECOM)

PROJECT MANAGER
GARRET AVERY (AECOM)

LANDSCAPE ARCHITECTURE + URBAN DESIGN
SUSAN BEMIS (AECOM)
MARIO ULLOA (AECOM)
ANDREW LIANG (AECOM)

ENGINEERING
MARK FOSTER (AECOM)
WAEL YOUSSEF (AECOM)
HELDER DE ALMEIDA (AECOM)
WAYNE ALLEN (WAE)

COMMUNITY ENGAGEMENT
TERESA GONZALEZ (DG)
SAMARA DALY (DG)
IBRAHIM ABDUL-MATIN (DG)
NORA MADONICK (ARCH STREET)

ENVIRONMENTAL REVIEW
ANGELA ROSENTHAL (AECOM)
VENETIA LANNON (MATRIX)
ROBERT FIORILE (MATRIX)

PARTNERS / STAKEHOLDERS
NYC
NYS
CB1
ABOUT US

- Multi-disciplinary design team that implements the balance of disciplines
- Thrives at intersection of flood-risk management and urban integration for climate adaptation
- Robust experience in local multi-purpose and large scale urban coastal resiliency projects
- Extensively studied flood barrier technologies and approaches to flood reduction for use in Lower Manhattan
- 40+ years of providing technical support and design services to FEMA and USACE
PROJECT SCOPE

- Conceptual design through construction documentation of a comprehensive flood risk reduction alignment
- Integrate resiliency measures to improve risk-reduction and enhance social, recreational, and economic benefits
- Community, Partner, and Stakeholder Engagement
- Achieve independent utility to ensure FEMA certification/accreditation
- Develop long-term Operations and Maintenance manual
2 PURPOSE + NEED + BACKGROUND
CLIMATE CHANGE + 21ST CENTURY THREATS

Increased impacts from and frequency of weather events, coupled with rising sea levels, means that a changing Manhattan shoreline is inevitable.
1. Prioritize resiliency effectiveness and adaptability to reduce long-term risk
2. Develop an implementable solution with independent utility
3. Engage with community members, stakeholders, and Agency partners
4. Achieve FEMA Certification/Accreditation
2050’S 100-YEAR FLOODPLAIN

SOURCE: NEW YORK PANEL ON CLIMATE CHANGE (NPCC)
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
3 PROJECT AREA
OVERVIEW
PROJECT STUDY AREA OVERVIEW

NORTH BATTERY PARK CITY RESILIENCY

2050s 100-YR FLOODPLAIN
TOPOGRAPHY | LOW POINT
KEY CONSIDERATIONS

- Washington Market Park
- Roadways + Sidewalks
- Subsurface Utilities
- Rockefeller Park
- Hudson River Park
- Bus
- Bike
- Esplanade

2050s 100-YR Floodplain
The North Promenade provides continuous waterfront access for residents and visitors of Battery Park City and Lower Manhattan, as it connects Hudson River Park and Rockefeller Park along a contiguous waterfront. Along with the adjacent structures, it is currently one of the first assets impacted by extreme weather events, but it could become the first line of defense.
SITE VIEWS | CHAMBERS STREET
RESILIENCY MEASURES
2050’s 100-YEAR FLOODPLAIN

SOURCE: NEW YORK PANEL ON CLIMATE CHANGE (NPCC)
DESIGN FLOOD ELEVATION (DFE)

DESIGN STORM: 2050s 100 YEAR FLOOD

\[ \text{DFE - DESIGN FLOOD ELEVATION} + \text{FREEBOARD} + \text{WAVE ACTION} + \text{SEA LEVEL RISE} = \text{DFE - DESIGN FLOOD ELEVATION} \]

+0.0 NAVD 88
DESIGN FLOOD ELEVATION (DFE)

2012 HURRICANE SANDY
~ + 11'-'12'

TODAY FEMA 100-YEAR FLOOD
+ 11'-'14'

2050’s 100-YEAR FLOOD
+ 14'-'18'

+0.0 NAVD 88

* 2050 DFE TO BE VERIFIED WITH TOPO
RESILIENCY MEASURES + METHODS

FLOOD RISK MANAGEMENT

WAVE ATTENUATION

STORMWATER MANAGEMENT
RESILIENT COMMUNITY SPACE

HUDSON RIVER

NORTH PROMENADE

DFE

STUYVESANT HIGH SCHOOL
+ TRIBECA POINTE
PROJECT PRIORITIES

RESILIENCY MEASURES + ADAPTIVE CAPACITY = MULTI-PURPOSE PERFORMANCE
2050’s 100-YEAR FLOODPLAIN

SOURCE: NEW YORK PANEL ON CLIMATE CHANGE (NPCC)
KEY CONSIDERATIONS | INTEGRATED FLOOD REDUCTION

- CHAMBERS STREET ALTERNATIVE
- WEST BATTERY PARK CITY RESILIENCY

2050s 100-YR FLOODPLAIN
KEY CONSIDERATIONS | INTEGRATED FLOOD REDUCTION

HARRISON STREET ALTERNATIVE

WEST BATTERY PARK CITY RESILIENCY

2050s 100-YR FLOODPLAIN
KEY CONSIDERATIONS | INTEGRATED FLOOD REDUCTION

N MOORE STREET ALTERNATIVE

WEST BATTERY PARK CITY RESILIENCY

2050s 100-YR FLOODPLAIN
KEY CONSIDERATIONS | INTEGRATED FLOOD REDUCTION

NORTH BATTERY PARK CITY RESILIENCY

WEST BATTERY PARK CITY RESILIENCY

2050s 100-YR FLOODPLAIN
NEXT STEPS

- Site Investigations: borings and surveys
- Integrated Coastal Modeling refinement
- Summary of your feedback for programming and design
- Early design development of flood alignment and overall project area
- **February 2020**: Community Meeting #2 – Alignment Recommendation + Preliminary Design Concepts
QUESTIONS + COMMENTS?

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QUESTIONS + COMMENTS?

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