MEETING GOALS

• Project Review

• Private Property Owners Assessment

• Project Considerations and Challenges

• Alignments and Concepts – Identify tradeoffs
PROJECT OVERVIEW

Purpose of Study:
1. Develop long-term strategy and feasible concept design for all of Lower Manhattan
2. Prioritize project concepts toward implementation and conduct advanced planning when possible
3. Engage with community on core design principles and priorities

Study Funding:
+ $7.25M CDBG-DR
  ($3.75M GOSR; $3.5M NYC)
IMPLEMENTATION FUNDING IN PLACE

TWO BRIDGES
$176M (CDBG-NDR)
$27M (City Capital)
Total: $203M

FIDI+BPC
$100M (City Capital)
$8M for The Battery
Total: TBD
Task 1: Existing Conditions
- Research previous plans & concepts
- Mapping
- Site conditions
- Assessments
- Tree survey

Task 2: Concept Design
- Hydrological mgmt Strategies
- Drainage & sewer analysis
- Economic analysis
- Regulatory framework
- Develop conceptual scenarios

Task 3: Project Feasibility and Prioritization
- Framework to evaluate and identify priorities
- Identify required ULURP actions
- Determine project phasing
- Transportation analysis

Task 4: Near-Term Scoping for Implementation
- Surveying, geotech, sampling
- Schematic design documents
- Cost estimates

Task 5: Enviro. Review & Permitting
- Preparation of environmental review documents

Task 6: Community Engagement

FINAL DESIGN & IMPLEMENTATION

PROJECT PROCESS

SUMMER ‘16 TO SPRING ‘17
FALL ‘16 TO SPRING ‘17
WINTER ‘17 TO WINTER ‘18
SUMMER ‘16 TO SPRING ‘18
WINTER ‘16 TO FALL ‘18
FUTURE TIDAL + SLR INUNDATION

2050

2100

MEAN HIGH HIGH WATER + SLR (by 2050s)

MEAN HIGH HIGH WATER + SLR (by 2100s)
ALIGNMENT METHODOLOGY

- **EDGE**
  - ~95% PROJECT AREA PROTECTED

- **UPLAND**
  - ~75% PROJECT AREA PROTECTED

- **HYBRID**
  - ~85% PROJECT AREA PROTECTED
A SIGNIFICANT INTERVENTION
HEIGHT OF INTERVENTION

0-2  8-10
2-4  10-12
4-6  12+
6-8

DFE: Design Flood Elevation
EL: Elevation of Existing Grade
DFD: Design Flood Depth (Height of Intervention)

ENGINEERING DFE ASSUMPTIONS COMPARED AGAINST 2’ CONTOURS (DOITT 2006)
TWO BRIDGES JURISDICTION

Source: Pluto 16v1, owner type C, O; DCAS, DCP, City Owned Leased Property (COLP); DCP, Publicly Accessible Waterfront Space (PAWS); City agency input
PRIVATE PROPERTY OWNER INTERVIEWS

- LMCR Project team identified 27 privately-owned properties across the Financial District and Two Bridges neighborhoods.

- The average recovery period for buildings to be fully operational for tenants was 3-5 months.

- The average water-level of flooding at the lobby level of the building was 4-5ft.

- The total amount of capital put into protection across the properties was $114,000,000.
PRIVATE PROPERTY OWNER INTERVIEWS

- 67% of properties have relocated mechanical equipment such as electrical and cooling systems to a higher floor.

- 69% of properties interviewed had implemented or planned flood protection.

- Average Height of Protection = 6ft 10in

- Average time to deploy protection is between 9-17 hours.
A CONSTRAINED SITE
EXISTING RESILIENCY INVESTMENTS

NYCHA SMITH HOUSES (IN CONSTRUCTION)

KNICKERBOCKER VILLAGE

COLEMAN SQUARE PLAYGROUND

MURRY BERGTRAUM SOFTBALL FIELD

MARTIN F. TANAHEY PLAYGROUND

MANHATTAN MINI STORAGE (TIGER DAM PROTECTION)

NYCHA LA GUARDIA HOUSES (IN PROCUREMENT)

NYCHA TWO BRIDGES URA (SITE 7) (IN PROCUREMENT)

EXISTING BUILDINGS WITH INVESTMENTS

EXISTING BUILDINGS WITHOUT INVESTMENTS

FUTURE DEVELOPMENTS (Designed to flood protection standards)

2050s 100YR FLOOD LINE
DESIGN CONSIDERATIONS

RELIABILITY
Design Flood Height
Passive/Deployable
Wave Attenuation
Stormwater Management

URBAN BENEFITS
Waterfront Access
Placemaking
Safety
Community Amenities
Ecology
Transportation Improvements

VISUAL & PHYSICAL IMPACT
Height
Footprint
Design

ASSETS PROTECTED
Location of Protection
Critical Infrastructure
Property at Risk

FEASIBILITY
Cost
Constructibility
Ownership/Siting
Transportation Disruption
Regulatory Approvals
Operations and Maintenance
Speed of Implementation
FEMA Certification

FUTURE-FLEXIBLE
Phasing
Long-term Vision
Future-proofing
Climate Change Adaptation
Future Urban Needs
DESIGN CONCEPTS
WALL WITH SEAT EDGE AND PLANTERS
DESIGN CONCEPTS
RAISED ESPLANADE

+15.5' H.O.L. 100-YEAR DFE
+4.78 MHHW 2050
+0.0' EXISTING GRADE

14'-4" 7.5' 10.5' 12' 38'
DESIGN CONCEPTS

DOUBLE-SIDED BERM
DESIGN CONCEPTS
BLEACHER SEATING

EXISTING GRADE

100-YEAR DFE

+14.5'

+7.5'

+9.5'

HOI 5'
DESIGN CONCEPTS
DEPLOYABLE FLOOD GATES

ROLLER GATE IN POCKET DOOR

+16.5' 100-YEAR DFE

+7.0'

+4.78 MHHW

0.0

25'

16'6''

18'

HOI 9.5'
DESIGN CONCEPTS

PLANTED MEDIAN
NEXT STEPS

- Incorporate coastal model to inform alignment and drainage
- Further evaluate land use and environmental review timelines
- Develop preliminary cost estimates
- Narrow potential alignments
FUTURE MILESTONES

• May 24th Workshop (concepts)
  Rutgers Community Center
  200 Madison St.
  6:30-8 PM

• Fall ‘17 TF/ Public Workshop (select alternative)
• Winter ‘18 (refine alternative/final design)
• Summer/Fall ‘18 – Finish Study