AGENDA

6:30 – 6:40pm  Welcome + Opening Remarks (10 mins)
6:40 – 6:50pm  OneNYC: Our Resilient City (10 mins)
6:50 – 7:00pm  Project Overview (10 mins)
7:00 – 7:15pm  Question and Answer (15 mins)
7:15 – 8:05pm  Key Considerations + Small Group Discussions (50 mins)
                 Work Session 1: Coastal Resiliency Infrastructure Types (30 mins)
                 Work Session 2: Community Priorities (20 mins)
8: 05 – 8:25pm  Report Back + Questions (20 mins)
8:25 – 8:30pm  Next Steps + How to Stay Involved (5 mins)
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The Lower Manhattan Coastal Resiliency (LMCR) Project aims to reduce flood risk due to coastal storms and sea level rise from Manhattan’s Two Bridges neighborhood through Battery Park City. It intends to build the physical, social, and economic resiliency of the area by integrating flood protection into the community fabric through strengthening the City's coastline while improving access to the waterfront and enhancing public spaces.
OneNYC: RESILIENCY

Following Hurricane Sandy, a global conversation on resiliency emerged. Here’s what it means to us in New York City.

Our Resilient City

Our neighborhoods, economy, and public services will be ready to withstand and emerge stronger from the impacts of climate change and other 21st century threats.
HURRICANE SANDY
FINANCIAL DISTRICT

lower manhattan
COASTAL RESILIENCY
HURRICANE SANDY
THE BATTERY

3'-6' Flood (Sandy)
lower manhattan
COASTAL RESILIENCY

HURRICANE SANDY
BATTERY PARK CITY

0'-3' Flood (Sandy)
CLIMATE CHANGE / 21ST CENTURY THREATS

...But we know that Sandy is not the only risk we face. As we look towards the future, we must take stock of our current challenges...

Hurricane Sandy
Increasing Inequality
A Growing Population
Aging Infrastructure

lower manhattan
COASTAL RESILIENCY
CLIMATE CHANGE / 21ST CENTURY THREATS

...And grapple with the impacts of climate change on our city.

The NYC Panel on Climate Change (NPCC) projects increased chronic climate hazards...

By the 2050s:
+ 4.1°F to 5.7°F increase in average temperature
+ 4% to 11% increase in average annual precipitation
+ Sea levels likely to rise 1-2 ft.; maybe 2½ ft.

By 2100:
+ High-end projections may reach 6 ft.

...and increased impact from extreme weather events.

By the 2050s:
+ Number of days in NYC above 90° could triple
+ Number of most intense hurricanes and associated extreme winds may increase

Even today:
+ 100-year floodplain expanded by 17 square miles (51%) citywide; 2.3 ft. average increase in 100-year flood elevations; will increase with further sea level rise; now encompasses 71,500 structures
SEA LEVEL RISE AND STORM SURGE

The City’s 520 miles of coastline is vulnerable to flooding from coastal storms.

![Projected floodplain for the 2020s, 2050s, 2080s, and 2100](source: FEMA; CUNY Institute for Sustainable Cities)

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<th>2013 FIRMs</th>
<th>2050s Projected</th>
<th>Change (%)</th>
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<tbody>
<tr>
<td>Residents</td>
<td>400,000</td>
<td>808,900</td>
<td>102%</td>
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<tr>
<td>Jobs</td>
<td>290,800</td>
<td>555,700</td>
<td>91%</td>
</tr>
<tr>
<td>Buildings</td>
<td>71,500</td>
<td>118,000</td>
<td>65%</td>
</tr>
<tr>
<td>1-4 Family</td>
<td>57,400</td>
<td>89,000</td>
<td>55%</td>
</tr>
<tr>
<td>Floor Area (Sq Ft.)</td>
<td>534M</td>
<td>855M</td>
<td>42%</td>
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*Numbers are rounded for clarity

Over 171,000 Buildings And 1.2 Million New Yorkers Projected To Live In The Floodplain By 2100.
On April 22\textsuperscript{nd}, 2015 Mayor Bill de Blasio released a new long-term strategic plan to address our most pressing challenges.

- Our Growing, Thriving City
- Our Just and Equitable City
- Our Sustainable City
- Our Resilient City
OneNYC: OUR RESILIENT CITY

This plan builds on existing efforts and strengthens and expands the City’s commitment to a multilayered approach to resiliency.

- **Neighborhoods**: Every city neighborhood will be safer by strengthening community, social, and economic resiliency.
- **Buildings**: The city’s buildings will be upgraded against changing climate impacts.
- **Infrastructure**: Infrastructure systems across the region will adapt to enable continue services.
- **Coastal Defense**: New York City’s coastal defenses will be strengthened against flooding and sea level rise.
PLANNING EFFORTS

Building off of recommendations from previous resiliency plans
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

**East Side Coastal Resiliency**
Funding Secured:
- $335 million (CDGB-DR)
- $170 million (City Capital)
Project Budget: $505 million

**Lower Manhattan Coastal Resiliency Implementation:**

**Two Bridges**
Funding Secured:
- $176 million (CDGB-NDR)
- $27 million (City Capital)
Project Budget: $203 million

**Manhattan Tip**
Funding Secured:
- $108 million (City Capital)
Project Budget: TBD
PROJECT LOGIC & ACTIVITIES

**Build Off Previous Planning & Design**
- Existing Conditions
- Mapping
- Site Conditions
- Assessments

**Develop Comprehensive Concept Design**
- Hydrological Mgmt Strategies
- Drainage and Sewer
- Ecological/Environmental
- O & M
- Economic Analysis
- Regulatory Framework
- Determine Design Flood Elevations

**Project Feasibility and Prioritization**
- Feasibility, Prioritization and Phasing

**Near Term Scoping for Implementation**
- Detailed schematic design
- Surveying, Geotech, Sampling
- Environmental Review and Permitting
PROJECT PROCESS

DESIGN AND ENGINEERING

COMMUNITY INPUT

Build Off Previous Planning & Design

Develop Comprehensive Concept Design

Project Feasibility and Prioritization

Near Term Scoping for Implementation

ENVIRONMENTAL REVIEW

PERMITTING

FINAL DESIGN & IMPLEMENTATION
FINANCIAL DISTRICT STUDY AREA
BATTERY PARK CITY STUDY AREA
lower manhattan
COASTAL RESILIENCY

ADJACENT RESILIENCY PROJECTS

- PNP ASPHALT GREEN REPAIRS
- WARREN ST RECONSTRUCTION
- FULTON ST ROADWAY RECONSTRUCTION
- RECOVERY & RESILIENCY WORK AT SMITH HOUSES
- RECOVERY & RESILIENCY WORK AT LA GUARDIA HOUSES
- RECOVERY & RESILIENCY WORK AT TWO BRIDGES
- EAST SIDE COASTAL RESILIENCY
- RECOVERY & RESILIENCY WORK AT PIER 36

PLANNED
DESIGN PHASE
CONSTRUCTION PHASE
COMPLETED
ADJACENT WATERFRONT IMPROVEMENT PROJECTS

- DEY STREET CONCOURSE
- LIBERTY PARK
- WEST ST & BATTERY PARK UNDERPASS
- REPAIRS
- PIER 1
- BATTERY MARITIME BUILDING
- PECK SLIP RECONSTRUCTION
- SOUTH STREET CONSTRUCTION
- WATER STREET STREETSCAPE
- JDS - 77 STORY TOWER
- EXTELL - ONE MANHATTAN SQUARE
- PIER 35 PARK
- STARRETT CORP - 60 STORY TOWER

Planned Projects:
- CONSTRUCTION PHASE
- DESIGN PHASE
- COMPLETED
- PLANNED PRIVATE DEVELOPMENT

Lower Manhattan CoT: COASTAL RESILIENCY
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DOWNTOWN MANHATTAN

lower manhattan

COASTAL RESILIENCY
THE BATTERY IMPROVEMENTS
ENGAGEMENT PROCESS
COLLABORATIVE PROCESS
HOW ARE WE GOING TO WORK TOGETHER?

PROJECT GOALS + KEY CONSIDERATIONS

CITY REVIEW

TASKFORCES + STAKEHOLDER MEETINGS + COMMUNITY WORKSHOPS

URBAN DESIGN + ENGINEERING TEAM MEETINGS

CONCEPT DESIGN
ENGAGEMENT METHODS – MEETING TYPES

+ Community Workshops
+ Informal Engagement
+ Stakeholder Interviews
+ Focus Groups
+ Surveys
+ Walking/Biking tours

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KEY CONSIDERATIONS
ADJACENT USES
NEW AND PLANNED IMPROVEMENTS
CIRCULATION AND TRANSPORTATION

INCREASED FERRY SERVICE

FERRY ACCESS

BATTERY PARK UNDERPASS

ROADWAYS AND SIDEWALKS
lower manhattan
COASTAL RESILIENCY
TYPES OF COASTAL RESILIENCY INFRASTRUCTURE
TYPES OF COASTAL RESILIENCY INFRASTRUCTURE

- EARTHEN BERM
- URBAN BERM
- FLOOD WALL
- DEPLOYABLES
- ELEVATED STREET
- RAISED MEDIAN
- ELEVATED PATHWAYS
- RAISED PLANTERS
SOCIAL INFRASTRUCTURE
HOW DOES RESILIENCY INFRASTRUCTURE BENEFIT PEOPLE?

PEOPLE

RESILIENCY INFRASTRUCTURE
ENGAGEMENT TIMELINE
OPPORTUNITIES TO PARTICIPATE

WORKSHOP 1
RE-ENGAGEMENT

WORKSHOP 2
TOOLKIT

a b c d e

WORKSHOP 3
SELECTION

WORKSHOP 4
REFINEMENT

= FINAL CONCEPT

DESIGN AND ENGINEERING

COMMUNITY INPUT

STAKEHOLDER MEETINGS / INFORMAL MEETINGS / POP-UP WORKSHOPS

CB1 TASKFORCE MEETING #1 SUMMER 2016
CB1 TASKFORCE MEETING #2 FALL 2016
CB1 TASKFORCE MEETING #3 WINTER 2016/17
CB1 TASKFORCE MEETING #4 SPRING 2017
CB1 TASKFORCE MEETING #5 SUMMER 2017
CB1 TASKFORCE MEETING #6 FALL 2017
CB1 TASKFORCE MEETING #7 WINTER 2017/18
CB1 TASKFORCE MEETING #8 SPRING 2018

PUBLIC WORKSHOP PUBLIC WORKSHOP PUBLIC WORKSHOP PUBLIC WORKSHOP PUBLIC WORKSHOP PUBLIC PRESENTATION

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COASTAL RESILIENCY
SMALL GROUP DISCUSSIONS
HOW WILL YOUR INPUT SHAPE THE PROJECT?

WORK SESSION 1: 30 minutes
Coastal Resiliency Infrastructure Types – Priorities and Concerns

WORKSHEET 1:
HOW WILL YOUR INPUT SHAPE THE PROJECT?

WORK SESSION 2: 20 minutes
Community Priorities

WORKSHEET 2:
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