



**FINANCIAL DISTRICT AND BATTERY PARK CITY
WORKSHOP NO. 1 : RE ENGAGEMENT
JULY 28, 2016, SOUTHBRIDGE TOWERS**

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)

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)

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)

VISION

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.

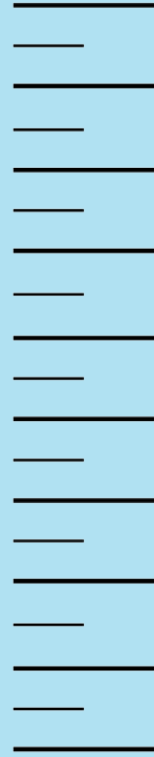
OneNYC: RESILIENCY

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



HURRICANE SANDY

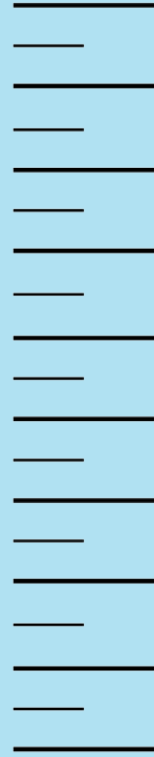
FINANCIAL DISTRICT



~5' Flood
(Sandy)

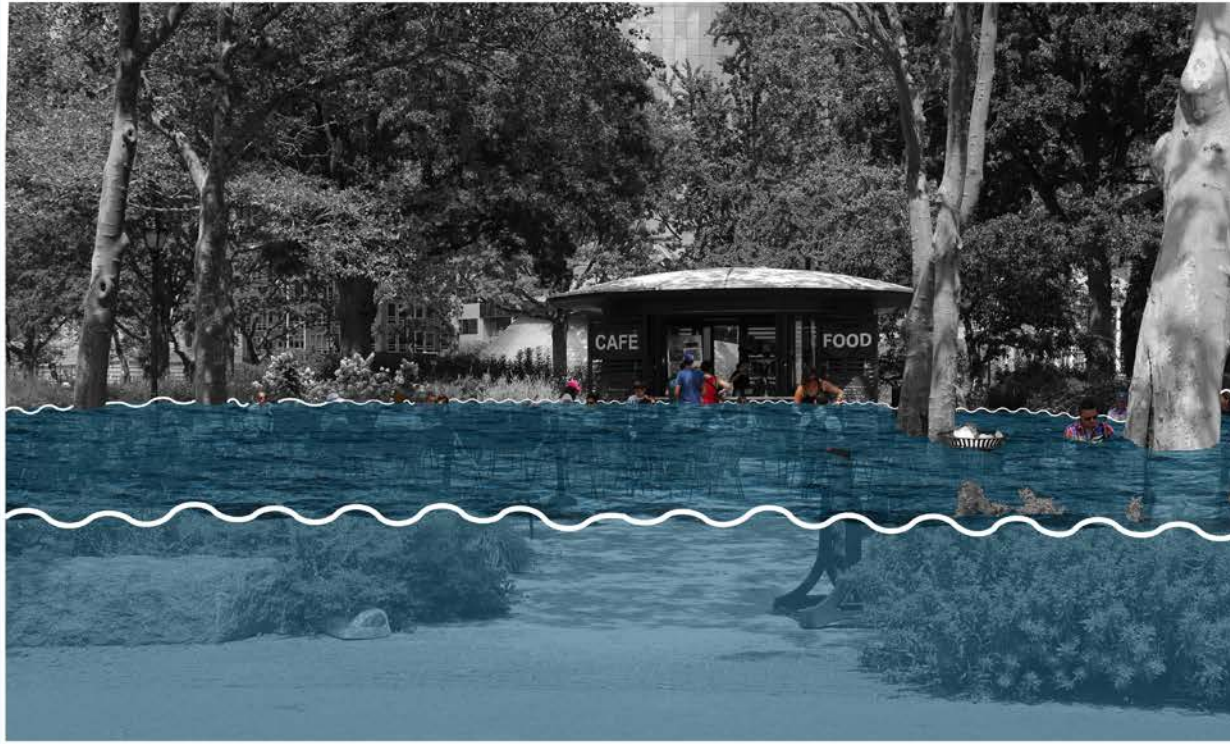
HURRICANE SANDY

THE BATTERY



HURRICANE SANDY

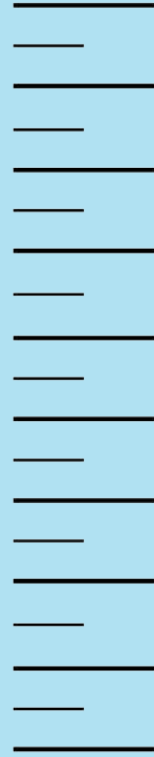
THE BATTERY



3'-6' Flood
(Sandy)

HURRICANE SANDY

BATTERY PARK CITY



HURRICANE SANDY

BATTERY PARK CITY



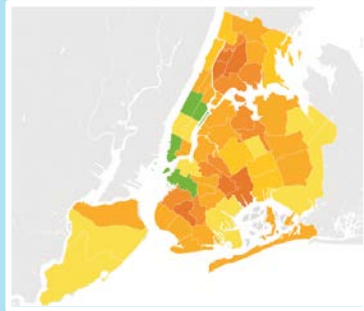
0'-3' Flood
(Sandy)

CLIMATE CHANGE / 21ST CENTURY THREATS

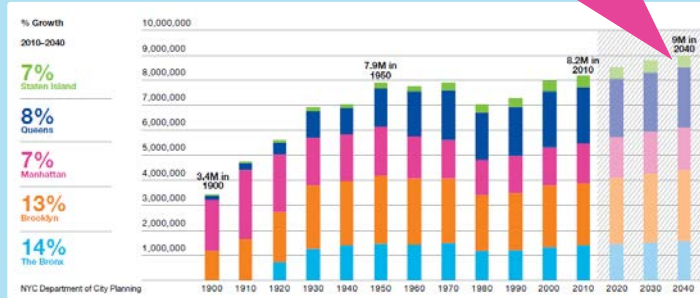
...But we know that Sandy is not the only risk we face. As we look towards the future, we must take stock of our current challenges...



Hurricane Sandy



Increasing Inequality



A Growing Population

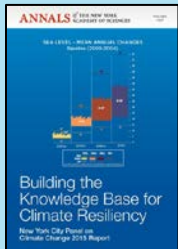


Aging Infrastructure

CLIMATE CHANGE / 21ST CENTURY THREATS

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

The NYC Panel on Climate Change (NPCCC) 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:

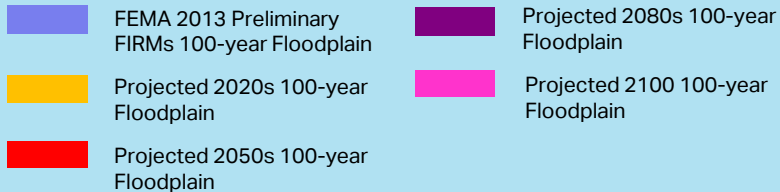
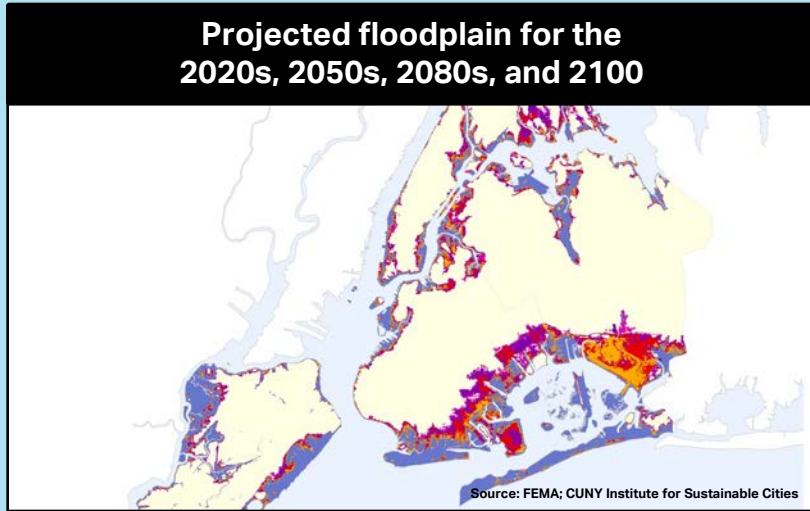
- + Number of days in NYC above 90° could triple
- + Number of most intense hurricanes and associated extreme winds may increase

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.



100-YEAR FLOODPLAIN*

	2013 PFIRMs	2050s Projected	Change (%)
Residents	400,000	808,900	102%
Jobs	290,800	555,700	91%
Buildings	71,500	118,000	65%
1-4 Family	57,400	89,000	55%
Floor Area (Sq Ft.)	534M	855M	42%

* Numbers are rounded for clarity

Over 171,000 Buildings And 1.2 Million New Yorkers Projected To Live In The Floodplain By 2100.

OneNYC: OUR FOUR VISIONS

On April 22nd, 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



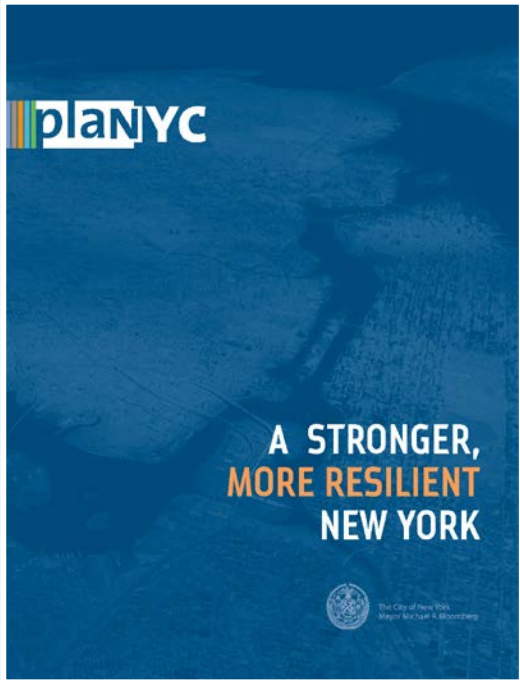
Coastal Defense

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

**REBUILD
BY
DESIGN**



#ONENYC

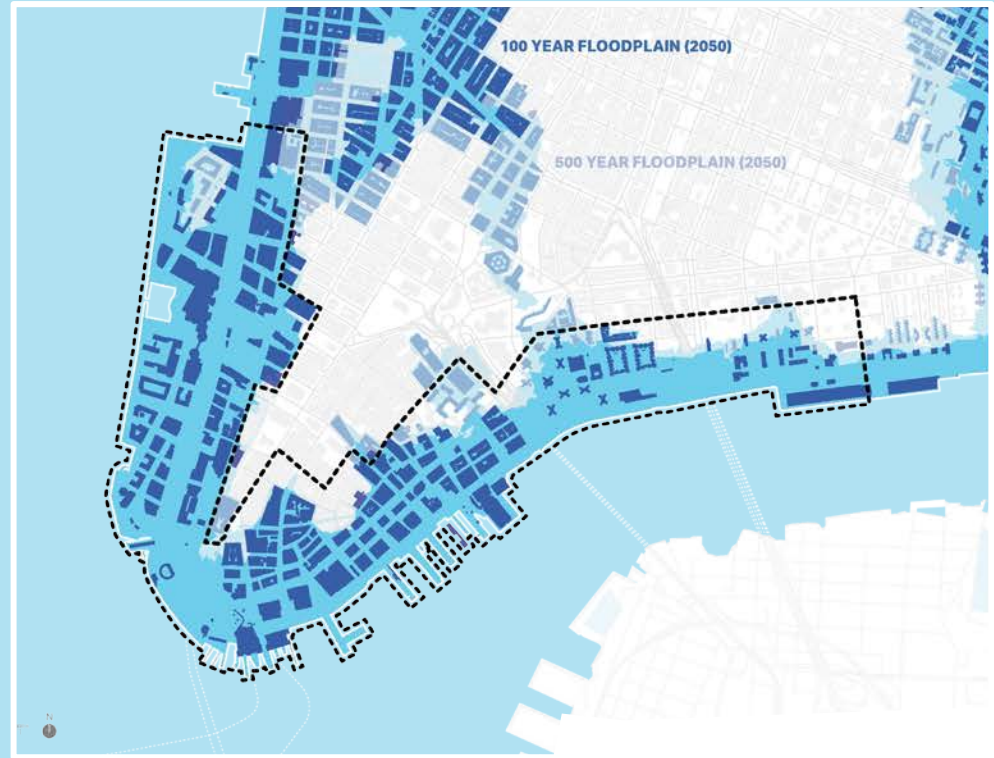
PROJECT OVERVIEW

Purpose of Study:

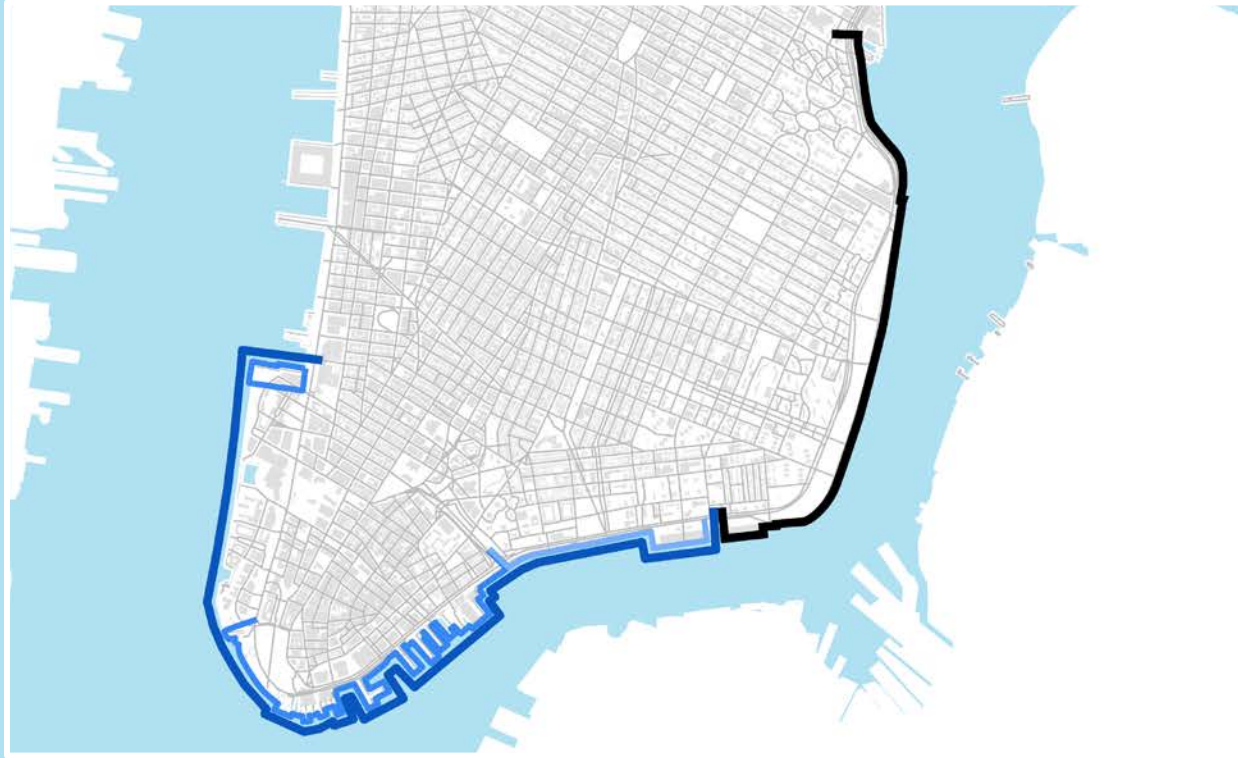
1. Develop long-term strategy and feasible concept design for all of Lower Manhattan
2. Prioritize project concepts toward implementation and conduct advanced planning when possible
3. Engage with community on core design principles and priorities

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

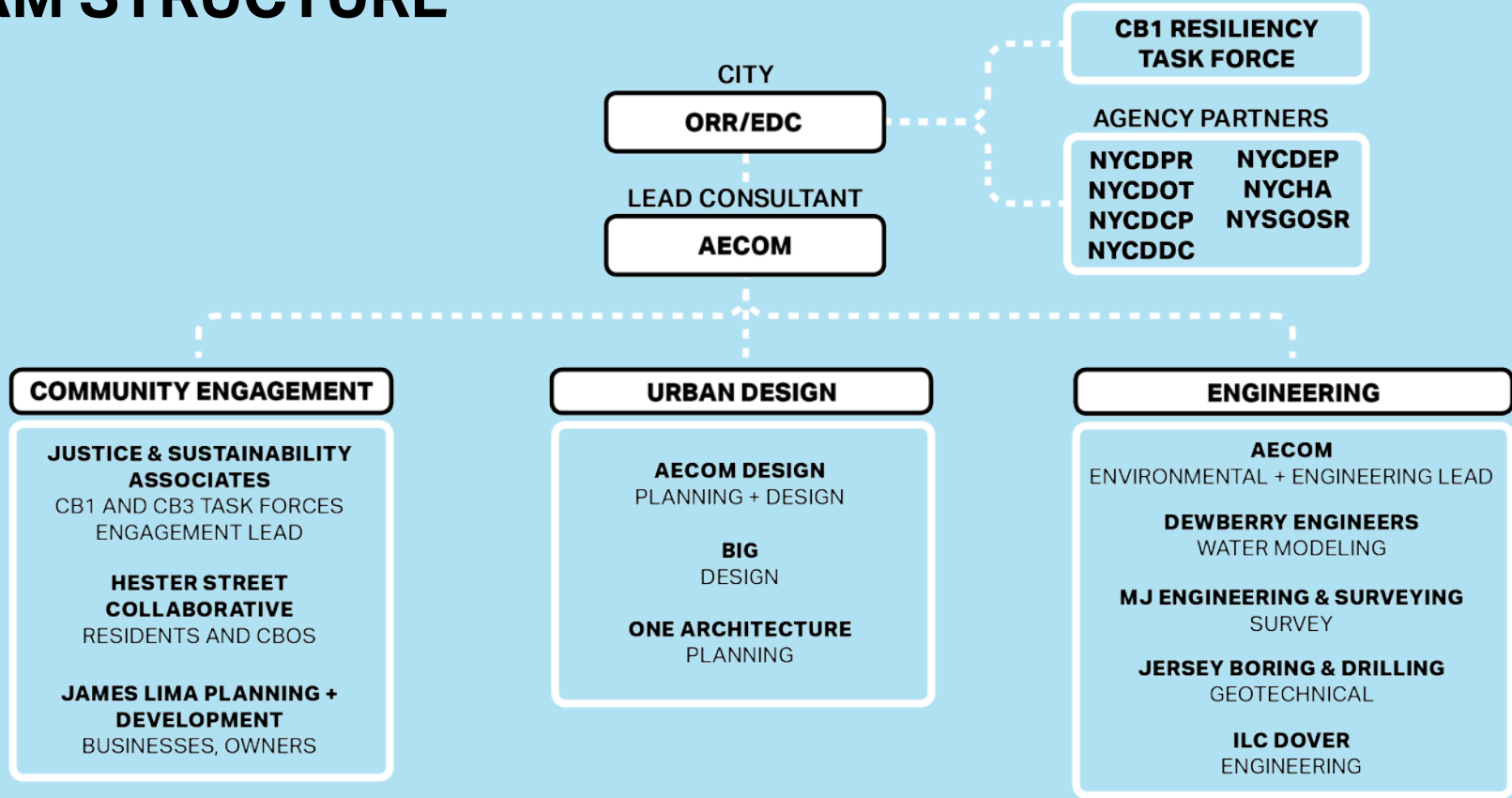
Manhattan Tip

Funding Secured :

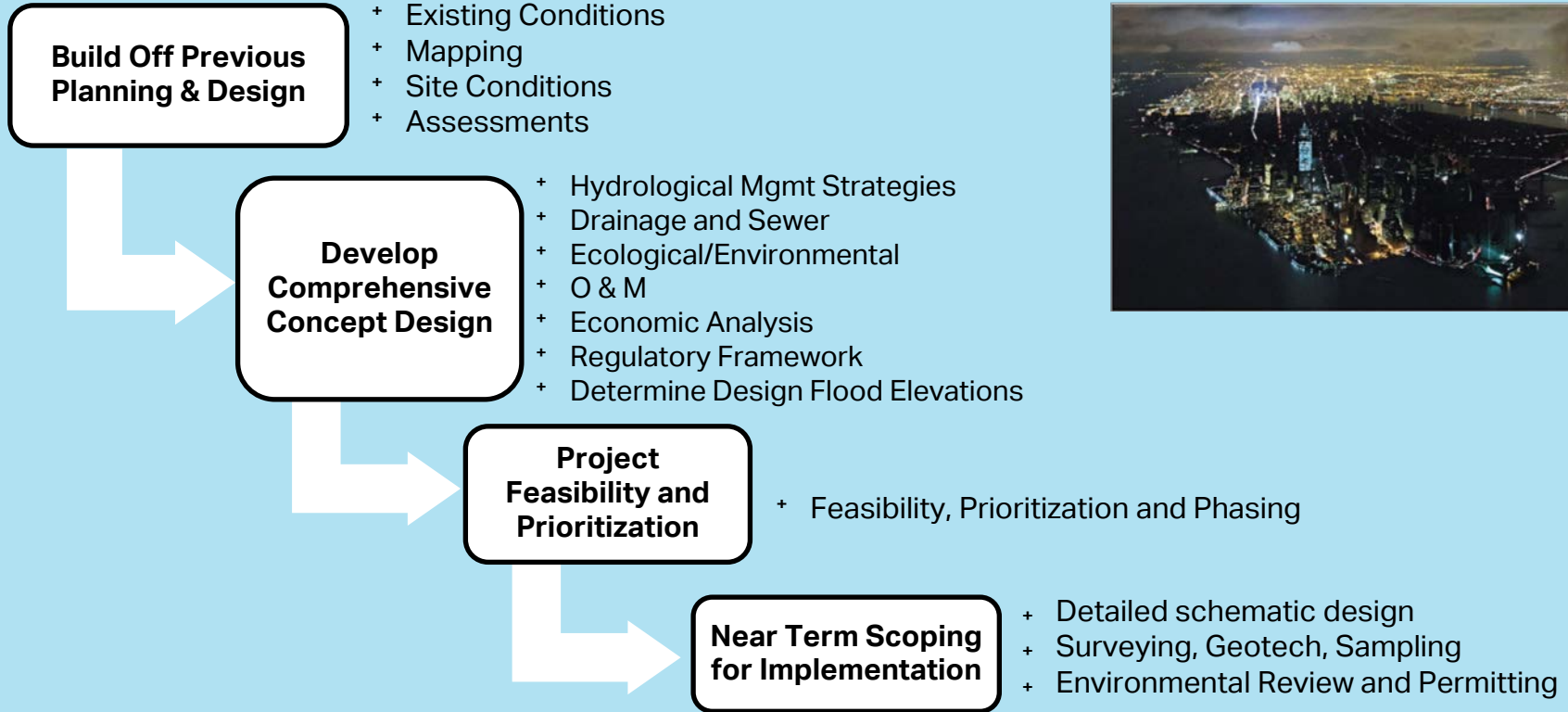
\$108 million (City Capital)

Project Budget : TBD

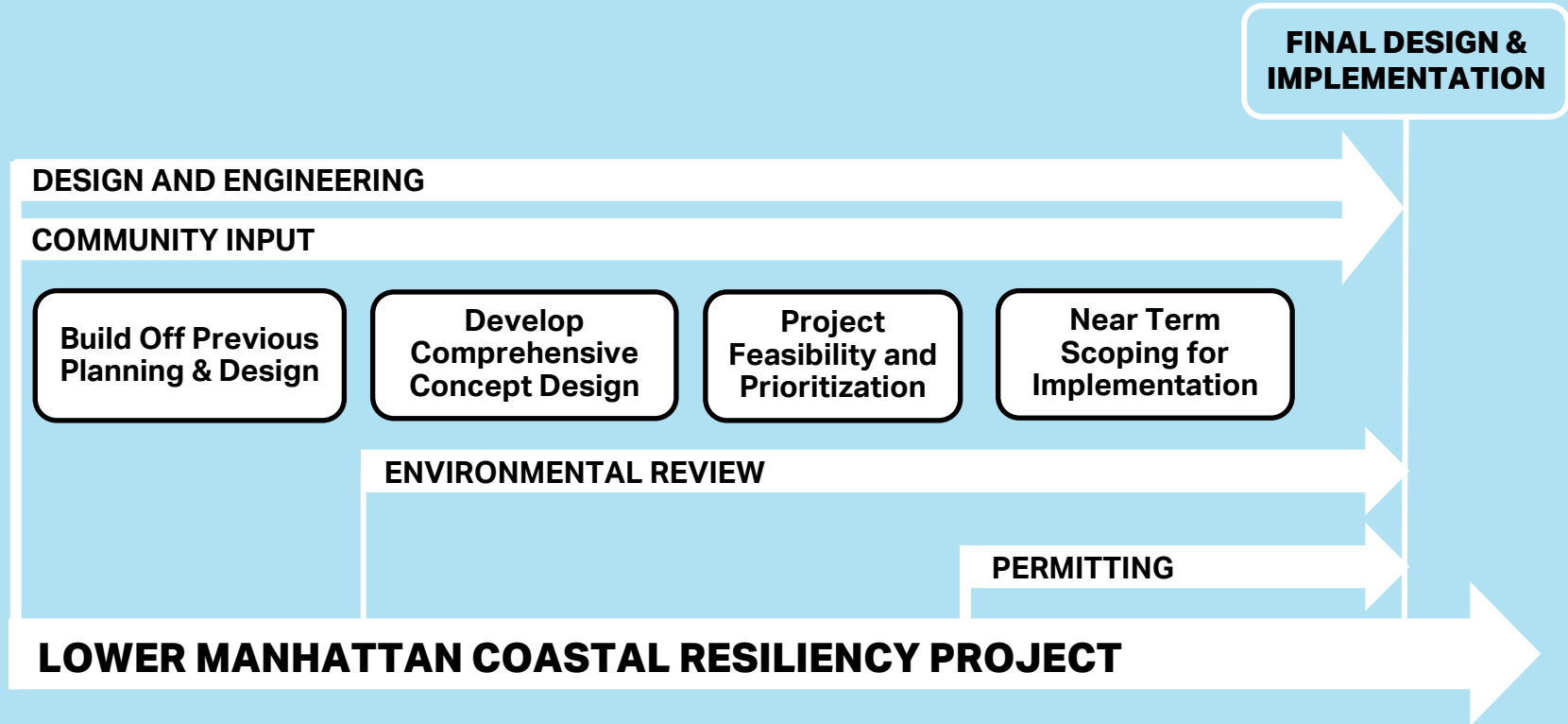
TEAM STRUCTURE



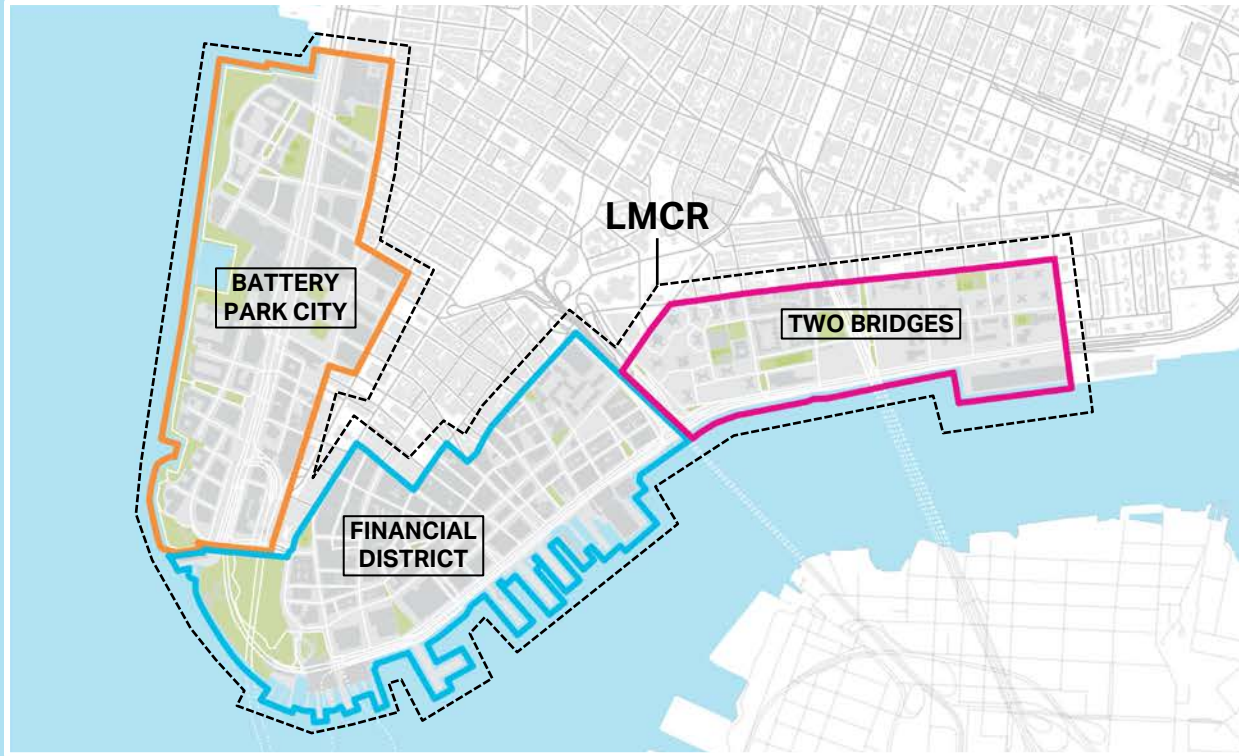
PROJECT LOGIC & ACTIVITIES



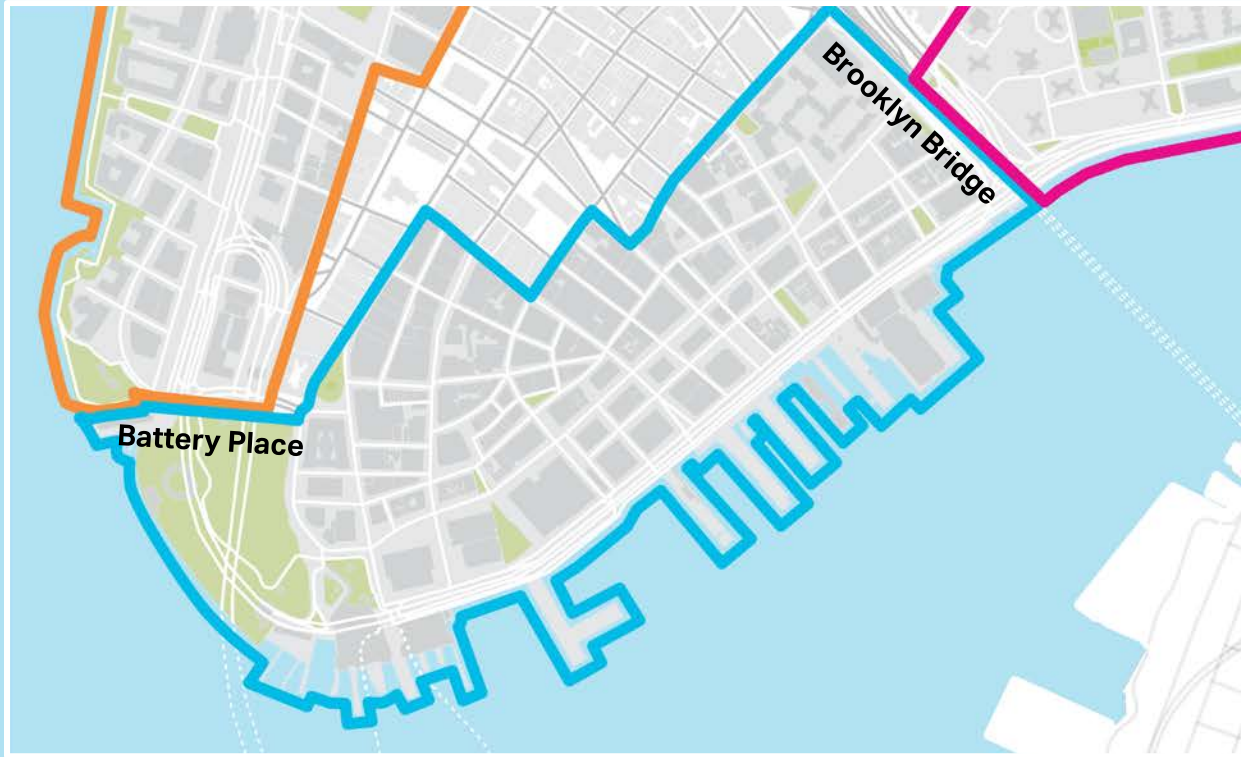
PROJECT PROCESS



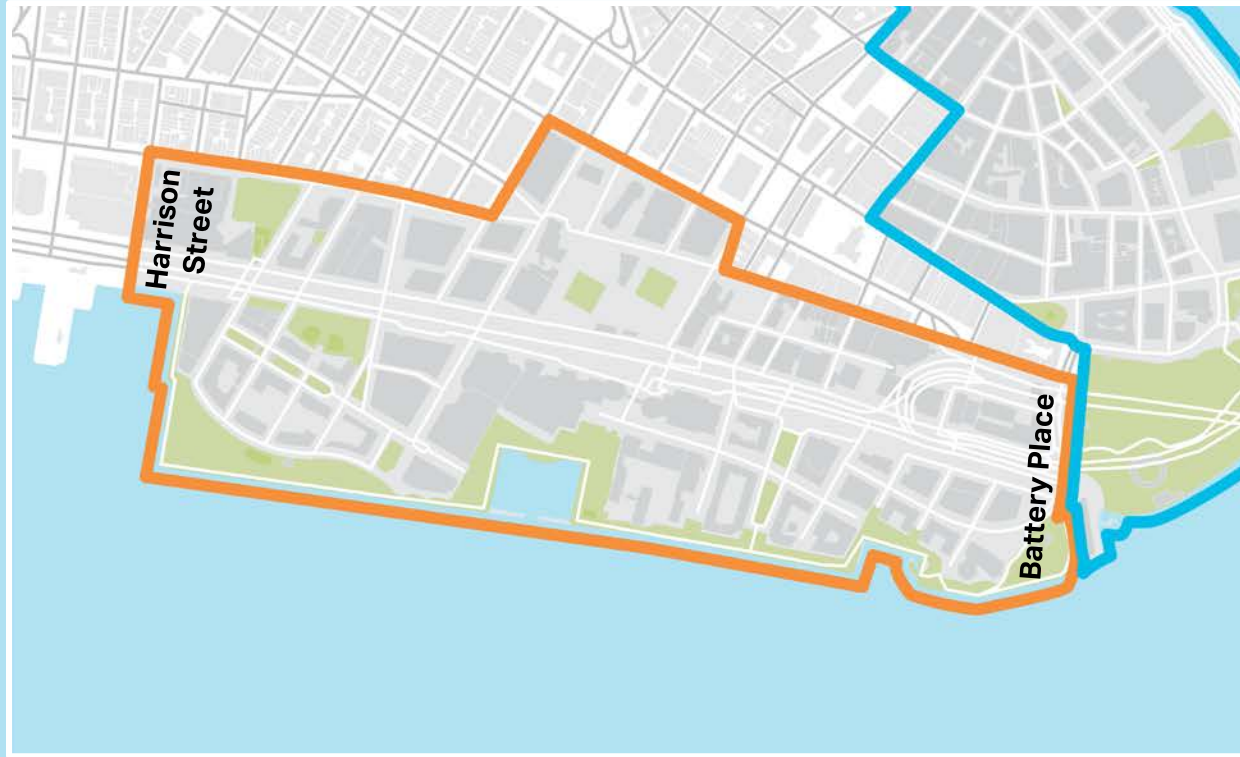
PLANNING STUDY AREA



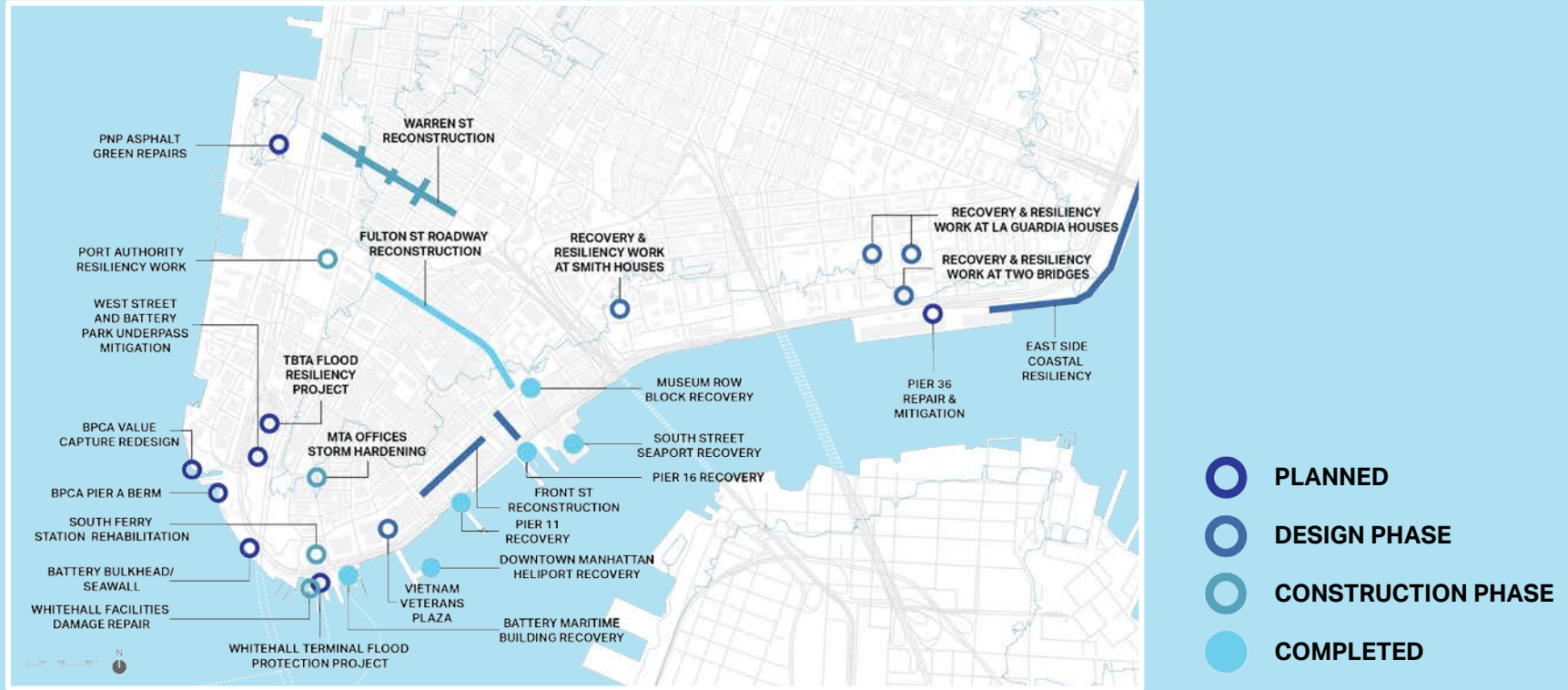
FINANCIAL DISTRICT STUDY AREA



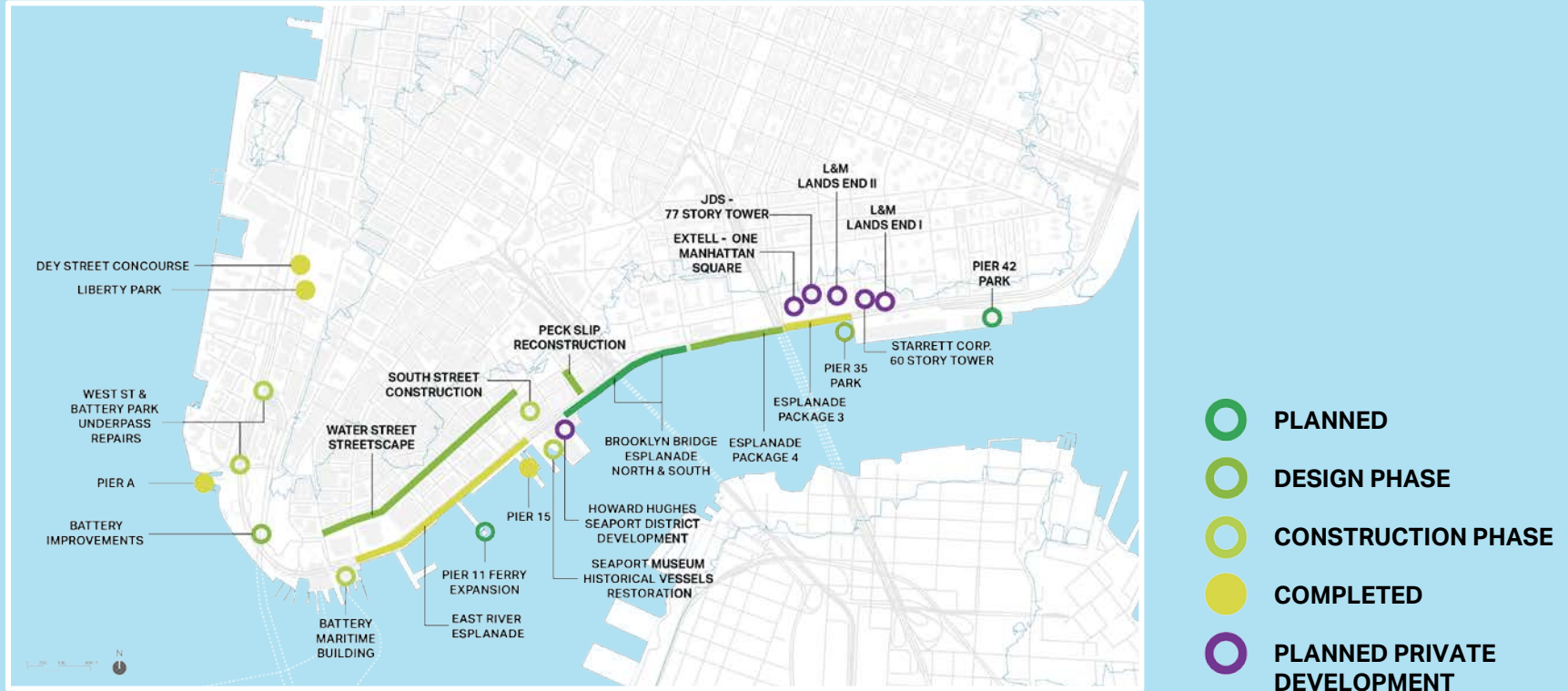
BATTERY PARK CITY STUDY AREA



ADJACENT RESILIENCY PROJECTS



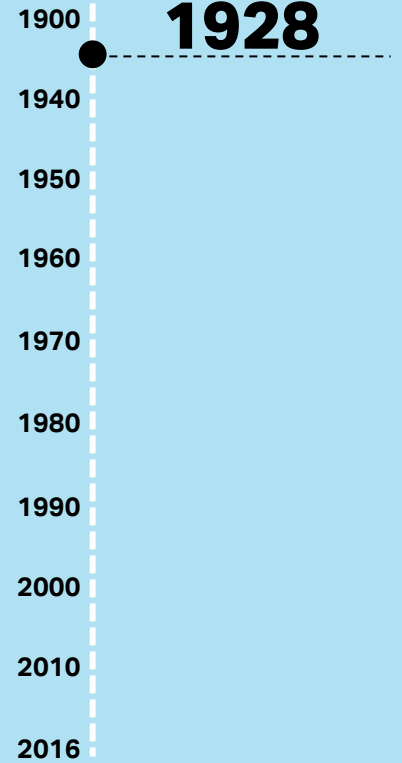
ADJACENT WATERFRONT IMPROVEMENT PROJECTS



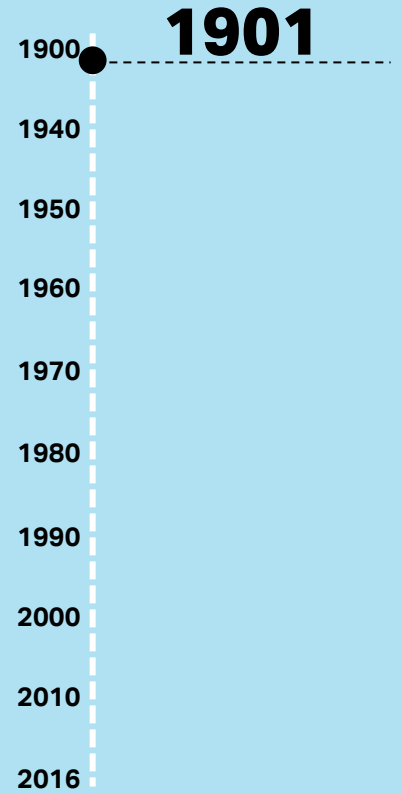
AGENDA

- 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)

DOWNTOWN MANHATTAN



EAST RIVER PORTS



PIER 15



1900

1940

1950

1960

1970

1980

1990

2000

2010

2016

2011

lower manhattan
COASTAL RESILIENCY

BATTERY PARK CITY



1900

1940

1950

1960

1970

1974

1980

1990

2000

2010

2016

lower manhattan
COASTAL RESILIENCY

THE BATTERY IMPROVEMENTS



1900

1940

1950

1960

1970

1980

1990

2000

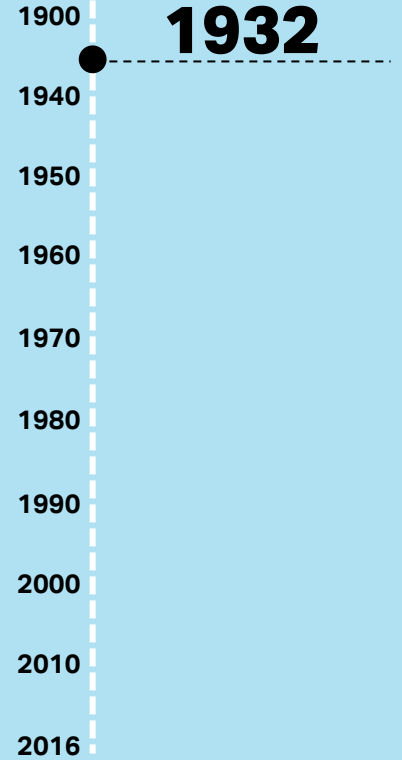
2010

2016

2015

lower manhattan
COASTAL RESILIENCY

SOUTH STREET



SOUTH STREET UNDER THE FDR



1900

1940

1950

1960

1970

1980

1990

2000

2010

2016

1982

EAST RIVER ESPLANADE UNDER THE FDR



1900

1940

1950

1960

1970

1980

1990

2000

2010

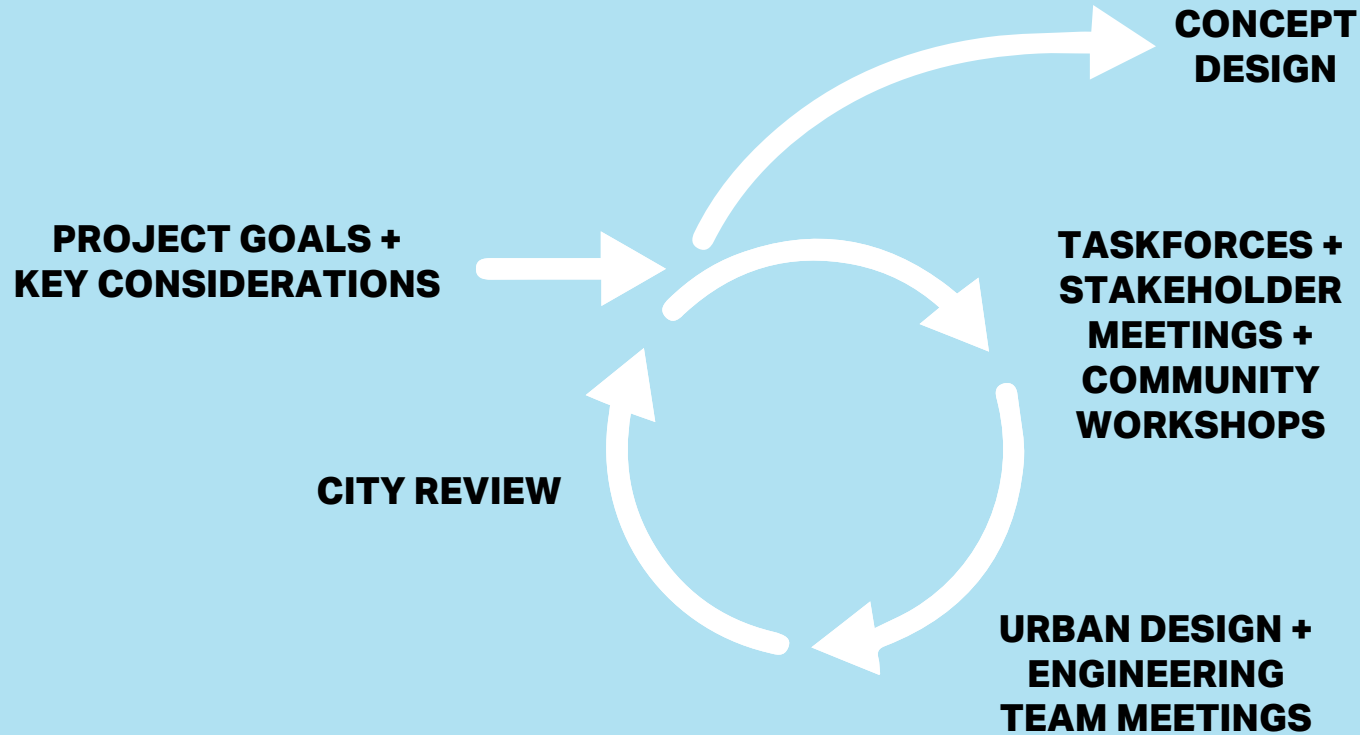
2016

2012

ENGAGEMENT PROCESS

COLLABORATIVE PROCESS

HOW ARE WE GOING TO WORK TOGETHER?



ENGAGEMENT METHODS – MEETING TYPES



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

AGENDA

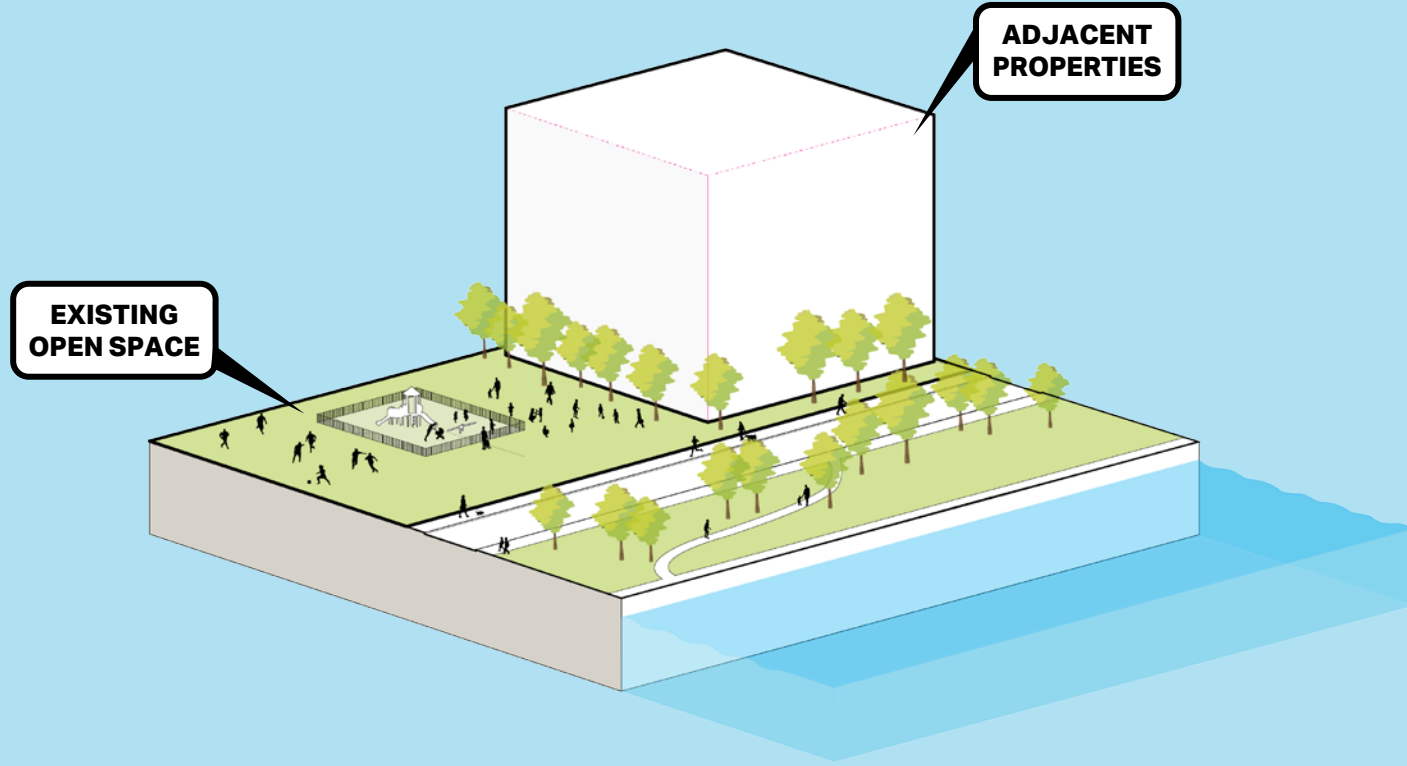
- 6:30 – 6:40pm **Welcome + Opening Remarks** (10 mins)
- 6:40 – 6:50pm **OneNYC: Our Resilient City** (10 mins)
- 6:50 – 7:00pm **Project Overview** (10 mins)
- 7:00 – 7:15pm **Question and Answer** (15 mins)
- 7:15 – 8:05pm **Key Considerations + Small Group Discussions** (50 mins)
 - Work Session 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)

AGENDA

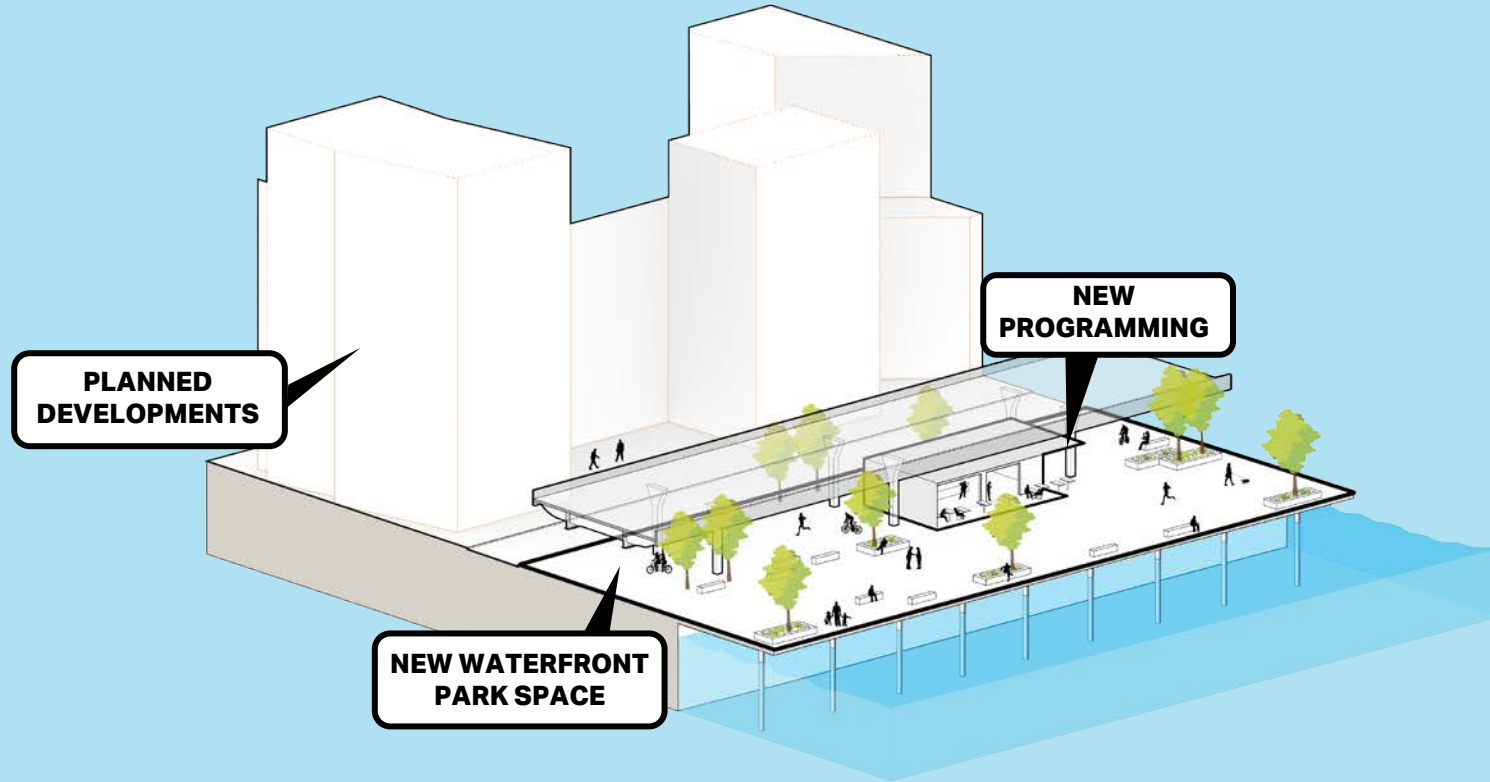
- 6:30 – 6:40pm **Welcome + Opening Remarks** (10 mins)
- 6:40 – 6:50pm **OneNYC: Our Resilient City** (10 mins)
- 6:50 – 7:00pm **Project Overview** (10 mins)
- 7:00 – 7:15pm **Question and Answer** (15 mins)
- 7:15 – 8:05pm **Key Considerations + Small Group Discussions** (50 mins)
 - Work Session 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)

KEY CONSIDERATIONS

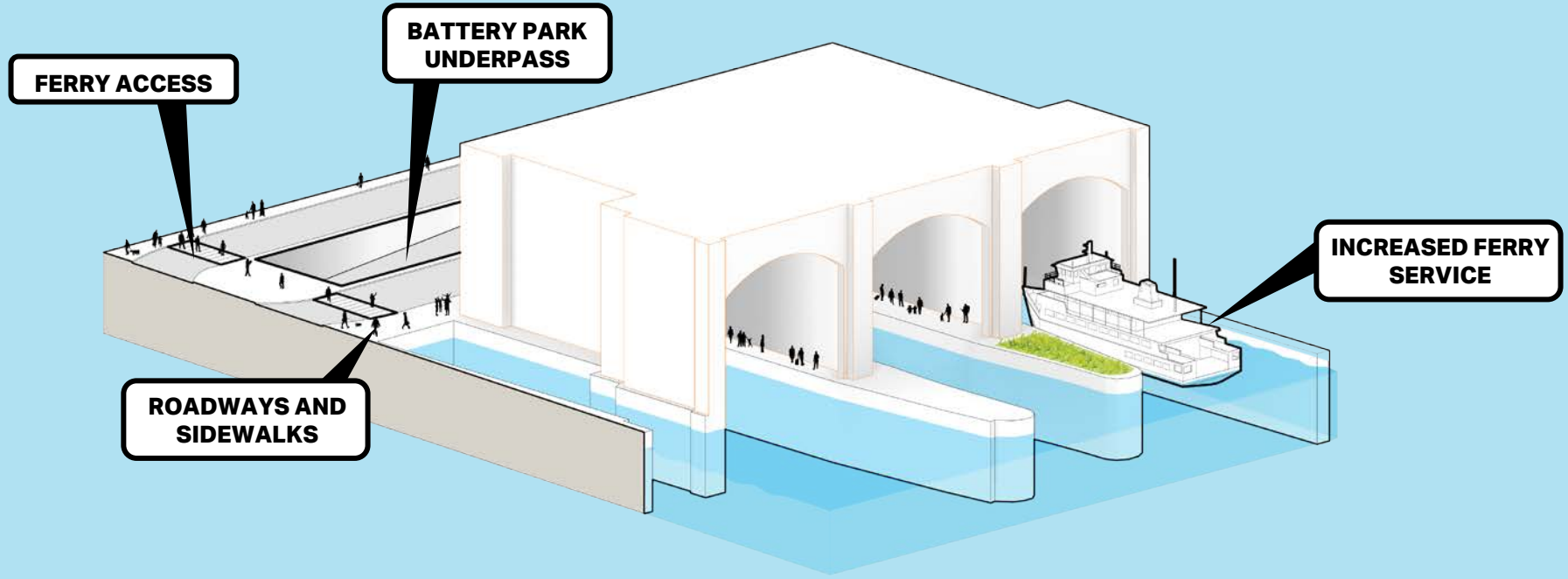
ADJACENT USES



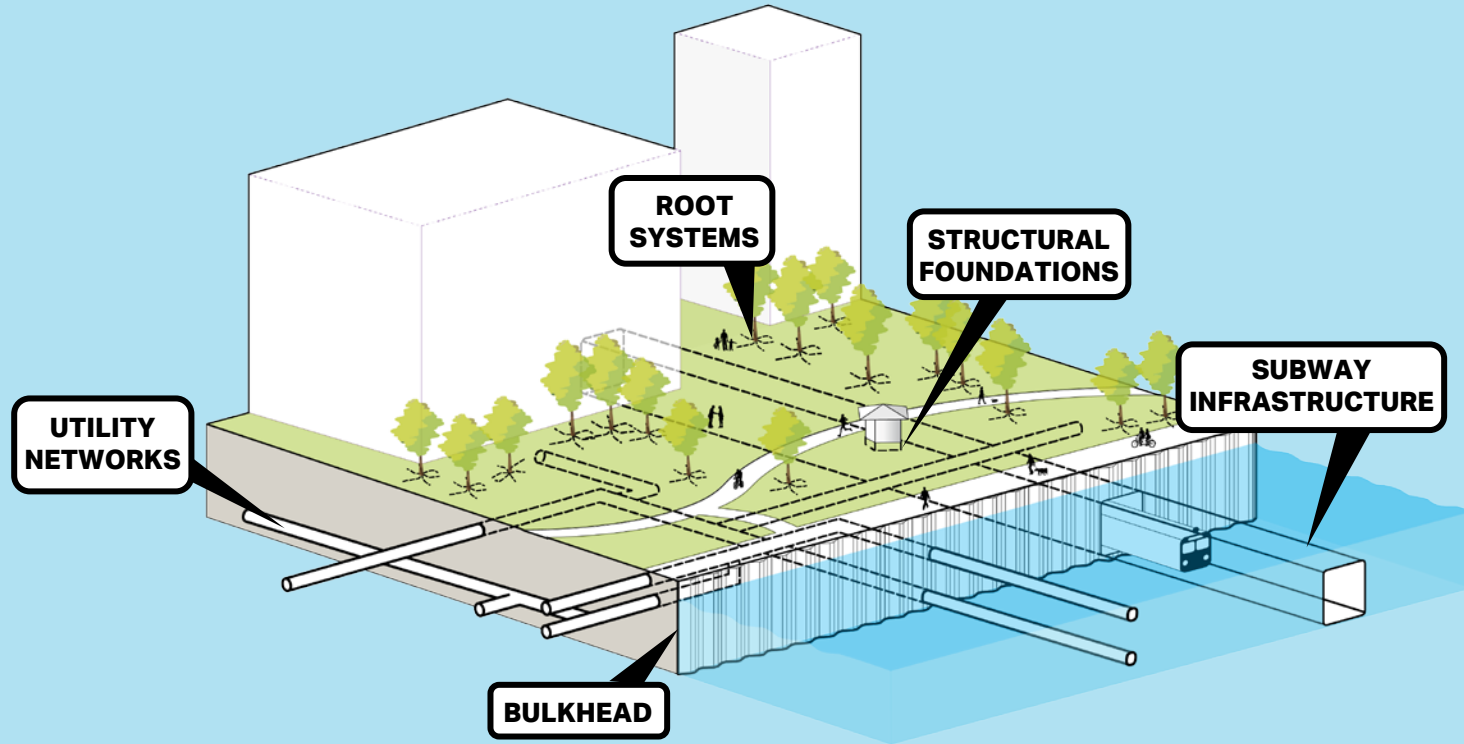
NEW AND PLANNED IMPROVEMENTS



CIRCULATION AND TRANSPORTATION



UNDERGROUND

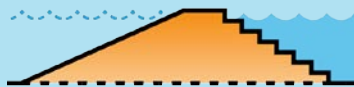


TYPES OF COASTAL RESILIENCY INFRASTRUCTURE

TYPES OF COASTAL RESILIENCY INFRASTRUCTURE



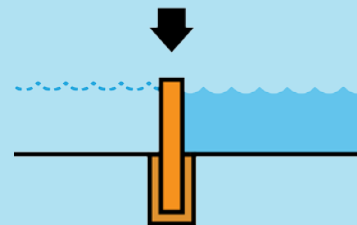
**EARTHEN
BERM**



**URBAN
BERM**



**FLOOD
WALL**



DEPLOYABLES



**ELEVATED
STREET**



**RAISED
MEDIAN**



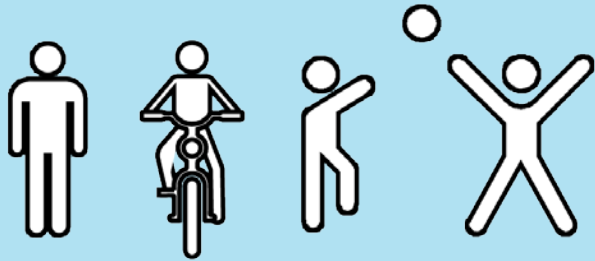
**ELEVATED
PATHWAYS**



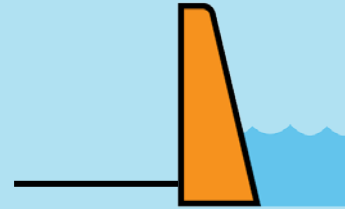
**RAISED
PLANTERS**

SOCIAL INFRASTRUCTURE

HOW DOES RESILIENCY INFRASTRUCTURE BENEFIT PEOPLE?



PEOPLE

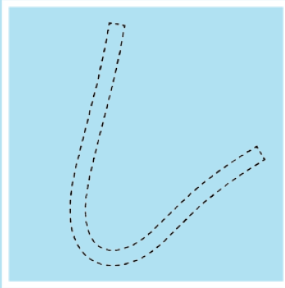


RESILIENCY
INFRASTRUCTURE

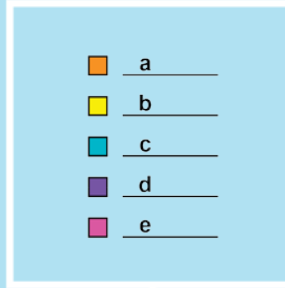
ENGAGEMENT TIMELINE

OPPORTUNITIES TO PARTICIPATE

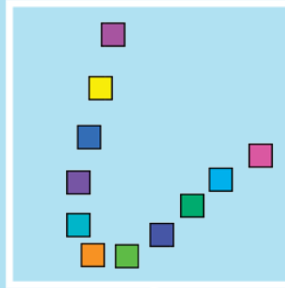
WORKSHOP 1
RE-ENGAGEMENT



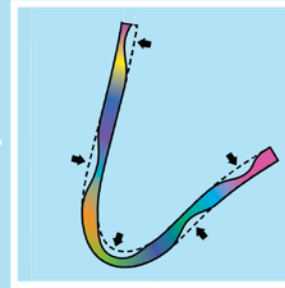
WORKSHOP 2
TOOLKIT



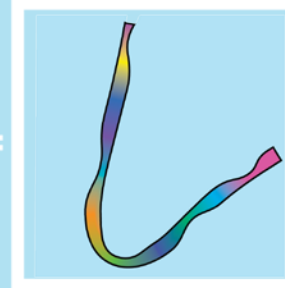
WORKSHOP 3
SELECTION



WORKSHOP 4
REFINEMENT



PRESENTATION & NEXT STEPS
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 PRESENTATION

FINAL DESIGN + IMPLEMENTATION

SMALL GROUP DISCUSSIONS













HOW WILL YOUR INPUT SHAPE THE PROJECT?

WORK SESSION 1: 30 minutes

Coastal Resiliency Infrastructure Types – Priorities and Concerns

WORKSHEET 1:

FI-DI • EPC RE-ENGAGEMENT WORKSHOP
COASTAL RESILIENCY INFRASTRUCTURE TYPES

TYPE	DESCRIPTION	EXAMPLES
EARTHEN BERM	<ul style="list-style-type: none"> Push the bank and feet, made up of natural elements such as stone, soil, plantings, grass, etc. Avoids to restrict access and passive recreation and routing Best suited for areas with large amount of space Reliable, permanent and in place through from before, during and after flood events Underground conditions must be able to support significant weight Requires periodic maintenance to prevent erosion due to the natural load 	 Sculpted Landform Lower Manhattan Coastal Resiliency Project  Stone Wall Lower Manhattan Coastal Resiliency Project  Replant Zone Fort Hill and Grand Concourse, Lower East
URBAN BERM	<ul style="list-style-type: none"> Can be designed and built as an attractive bank and feet Continues a series of hard elements such as concrete blocks, stone, terraces, etc. that can integrate walkways and passive recreation Can include amenities such as benches, seating, art work and shaded walkway spaces Best suited for areas with large amount of space Reliable, permanent and in place through from before, during and after flood events Big and heavy – made up of a mass of sublight materials Underground conditions must be able to support significant weight 	 Seating Steps Lower Manhattan Coastal Resiliency Project  Promenade Lower Manhattan Coastal Resiliency Project  Integrated Berms and Retail Fort Hill and Grand Concourse, Lower East
FLOOD WALL	<ul style="list-style-type: none"> Can be sculpted or made visually interesting so that it has an attractive bank and feet Can include amenities such as benches, planting, artwork, etc. Best suited for areas with limited space Reliable, permanent and in place – always there before, during and after flood events Requires structures that go deep under ground, have a concrete plate and external underground structures to allow for deep foundations Relies on the strength of the wall to handle Flood Events, as well as the foundation for the deep underground 	 Concrete Flood Wall Lower Manhattan Coastal Resiliency Project  Glass Flood Wall Lower Manhattan Coastal Resiliency Project  Sculptural Wall Fort Hill and Grand Concourse, Lower East
DEPLOYABLE	<ul style="list-style-type: none"> Individual waterfront views and access under normal weather conditions Best suited for high spaces that are accessible for ongoing maintenance and reusable under emergency conditions that allow for the views of ground level views Temporary and in place in the event of an emergency Deployment system requires that require frequent maintenance Some require structural planning and aesthetic material to meet in the event of an emergency and require storage space off site 	 Automated Flood Wall Lower Manhattan Coastal Resiliency Project  Removable Flood Barrier on Waterfront Lower Manhattan Coastal Resiliency Project  Deploying Gates Lower Manhattan Coastal Resiliency Project

lower manhattan COASTAL RESILIENCY

NYS Dept. of Planning and Community Development | NYCDC | 88 W. Broadway, 12th Floor | @NYCResiliency

HOW WILL YOUR INPUT SHAPE THE PROJECT?

WORK SESSION 2: 20 minutes

Community Priorities

WORKSHEET 2:

**RE-ENGAGEMENT WORKSHOP
COMMUNITY PRIORITIES**

STEP 1
Which priorities listed below matter most to you? Add any that you think are missing.

STEP 2
Rank the priorities in order of importance using the bull's eye Diagram.

FUNCTIONALITY **DESIGN** **USES + ACTIVITIES**

most important
select 1
select up to 3
select other priorities

lower manhattan
COASTAL RESILIENCY

NYC Department of City Planning
NYC Department of Environmental Protection
NYC Department of Parks and Recreation



STAY IN TOUCH



www.nyc.gov/lmcr



@NYClimate



@NYClimate



By Mail
253 Broadway – 14th Floor



in person



nycresiliency@cityhall.nyc.gov

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)

STAY IN TOUCH



www.nyc.gov/lmcr



@NYClimate



@NYClimate



By Mail
253 Broadway – 14th Floor



in person



nycresiliency@cityhall.nyc.gov