lower manhattan
COASTAL RESILIENCY

CB3 TASK FORCE UPDATE
NOVEMBER 2ND, 2017

DRAFT FOR INTERNAL REVIEW ONLY

TASK FORCE MEETING OBJECTIVES:

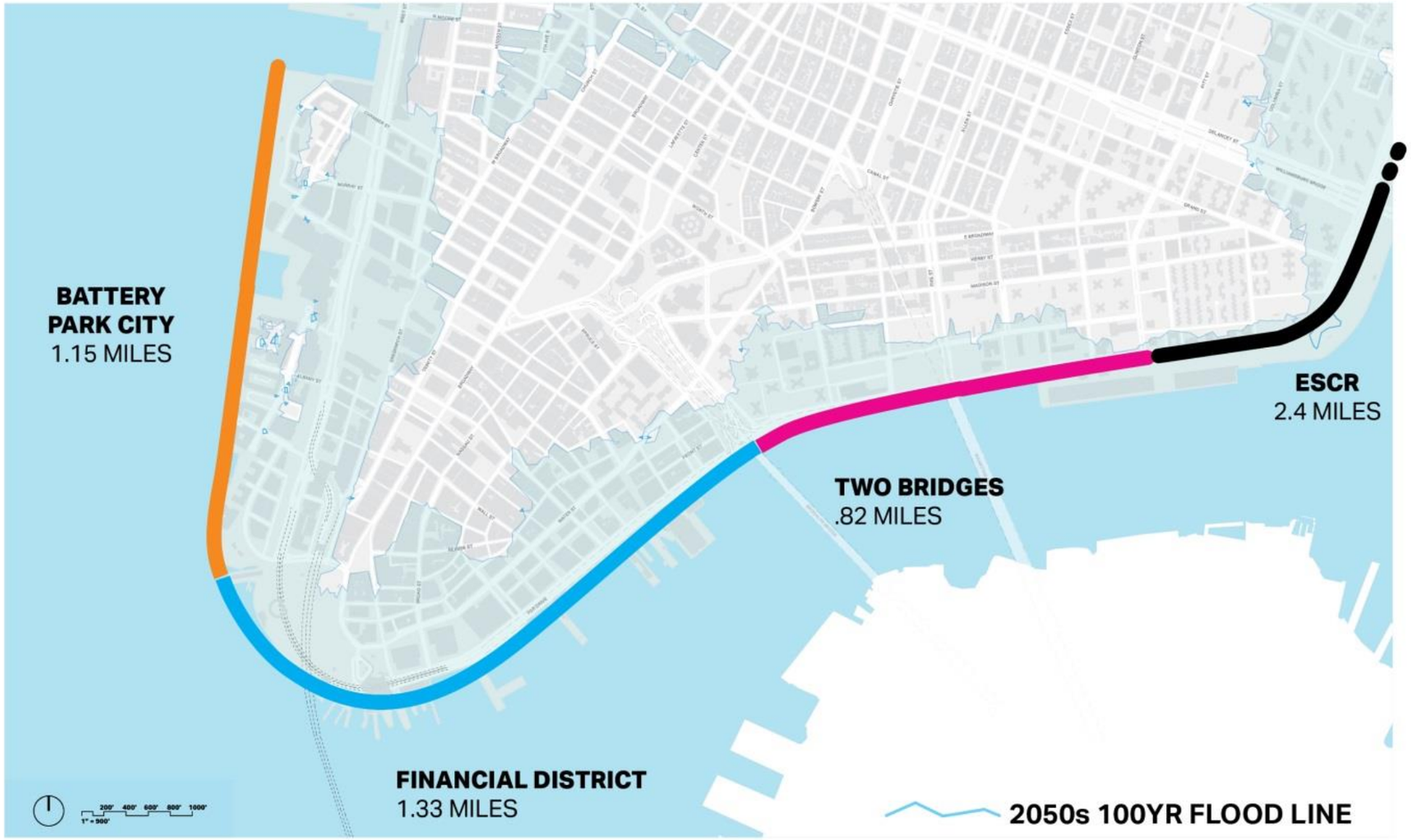
- Recap community engagement activities
- Gain an understanding of resiliency needs, public realm opportunities, and site constraints
- Provide an update on
    - Alignment
    - Design and engineering studies and feasibility tests to date
    - Deployable types

  Share feedback on
    - Project design
    - Community priorities
    - Public workshop format and content

PROJECT OVERVIEW

Purpose of Study:

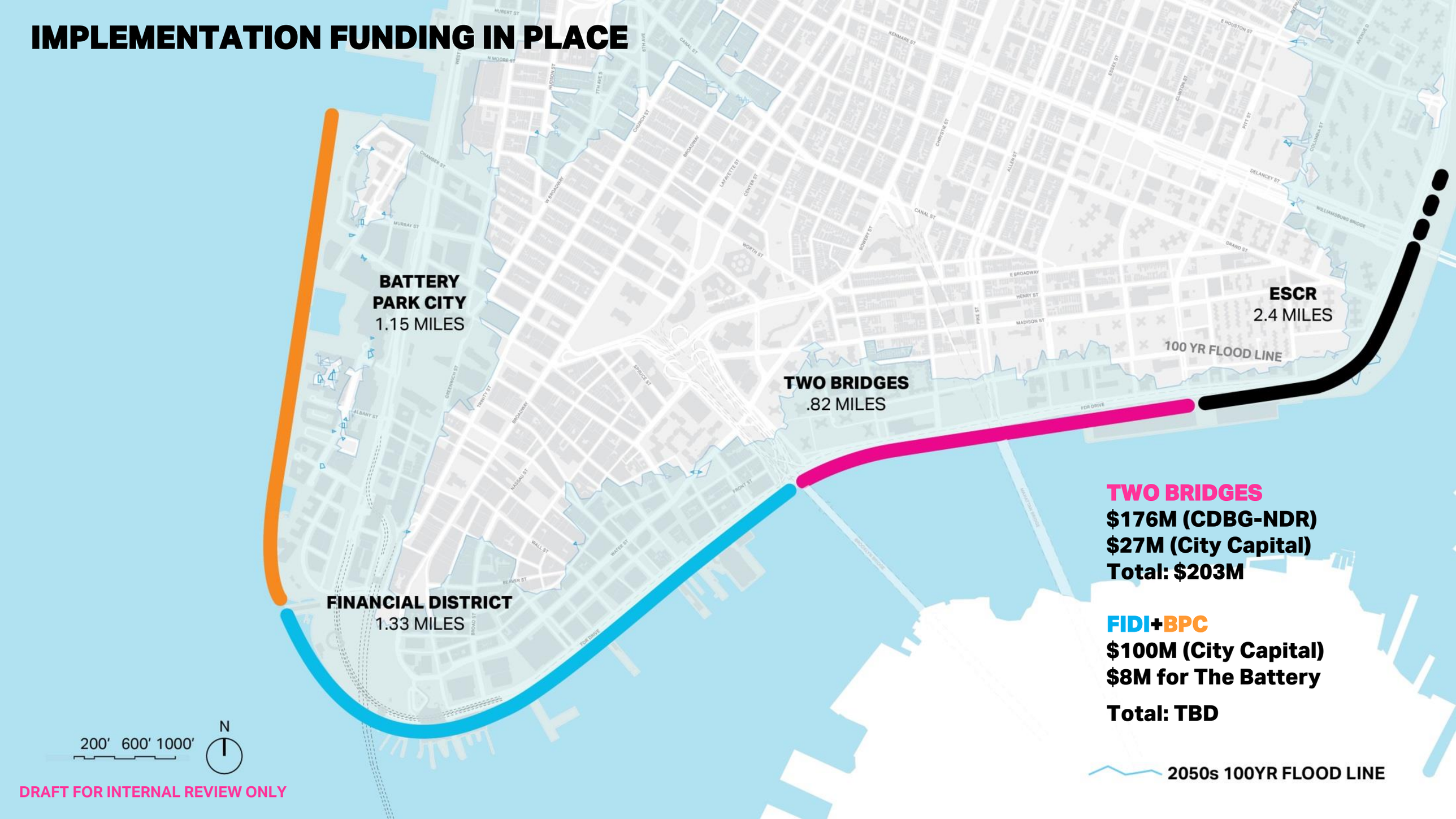
1. Develop long-term strategy and feasible concept design for all of Lower Manhattan
2. Prioritize project concepts toward implementation and conduct advanced planning when possible
3. Engage with community on core design principles and priorities



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

2050s 100YR FLOOD LINE

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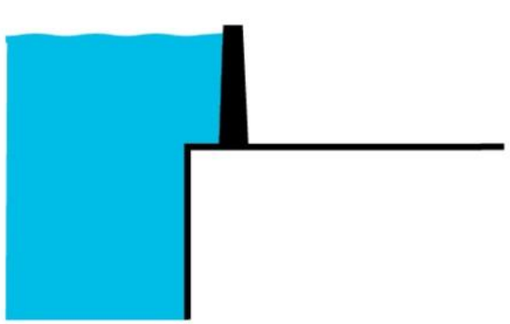
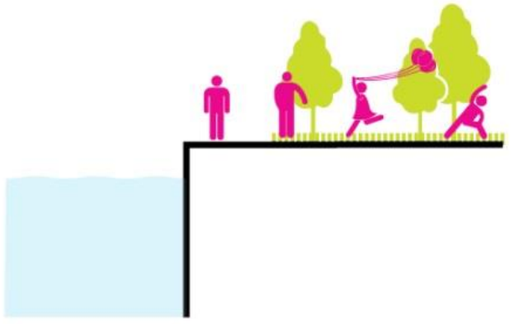
CORE MISSION



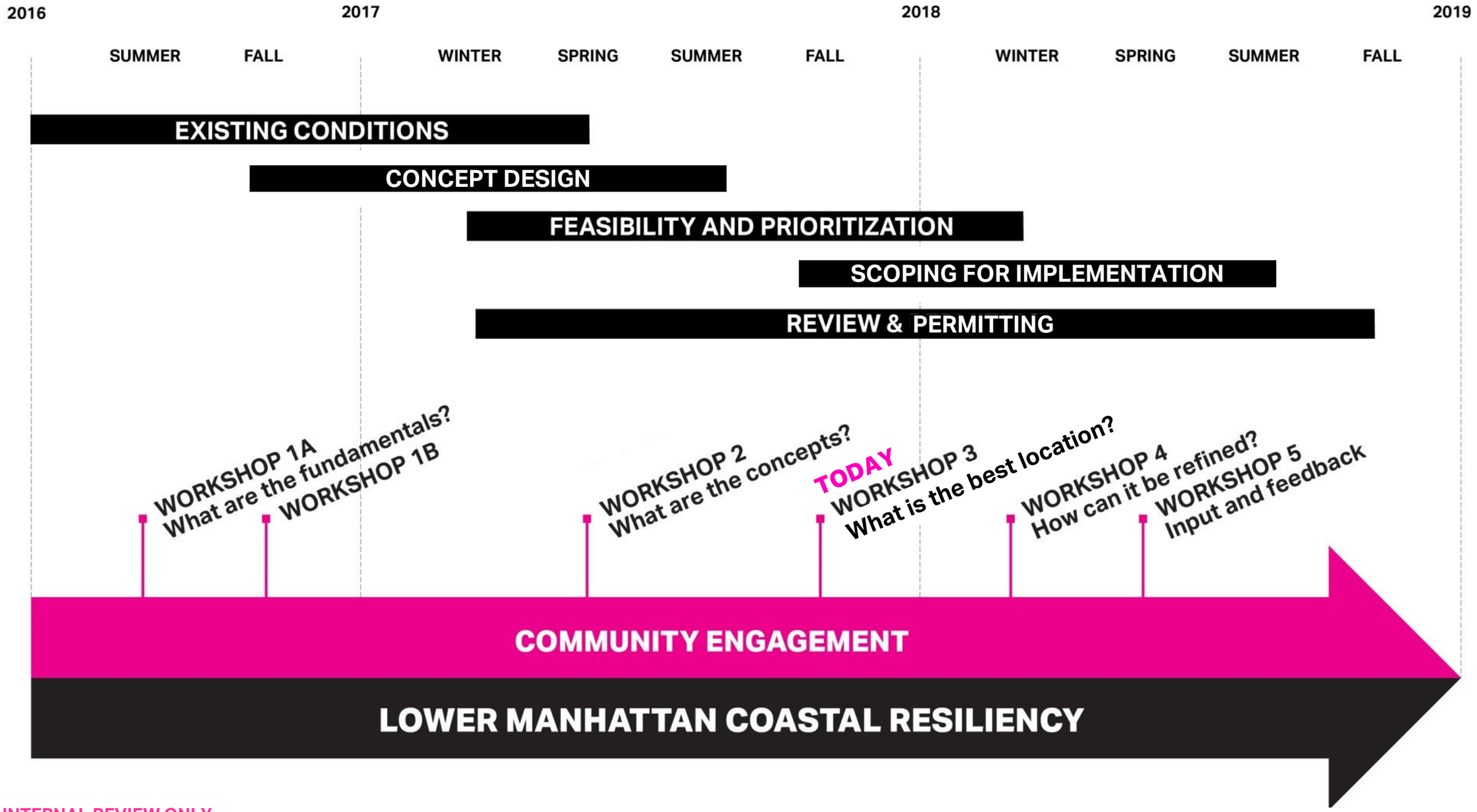
FLOOD RISK REDUCTION

+



PUBLIC BENEFIT

PROJECT PROCESS



COMMUNITY ENGAGEMENT

Public Meeting May 31, 2017

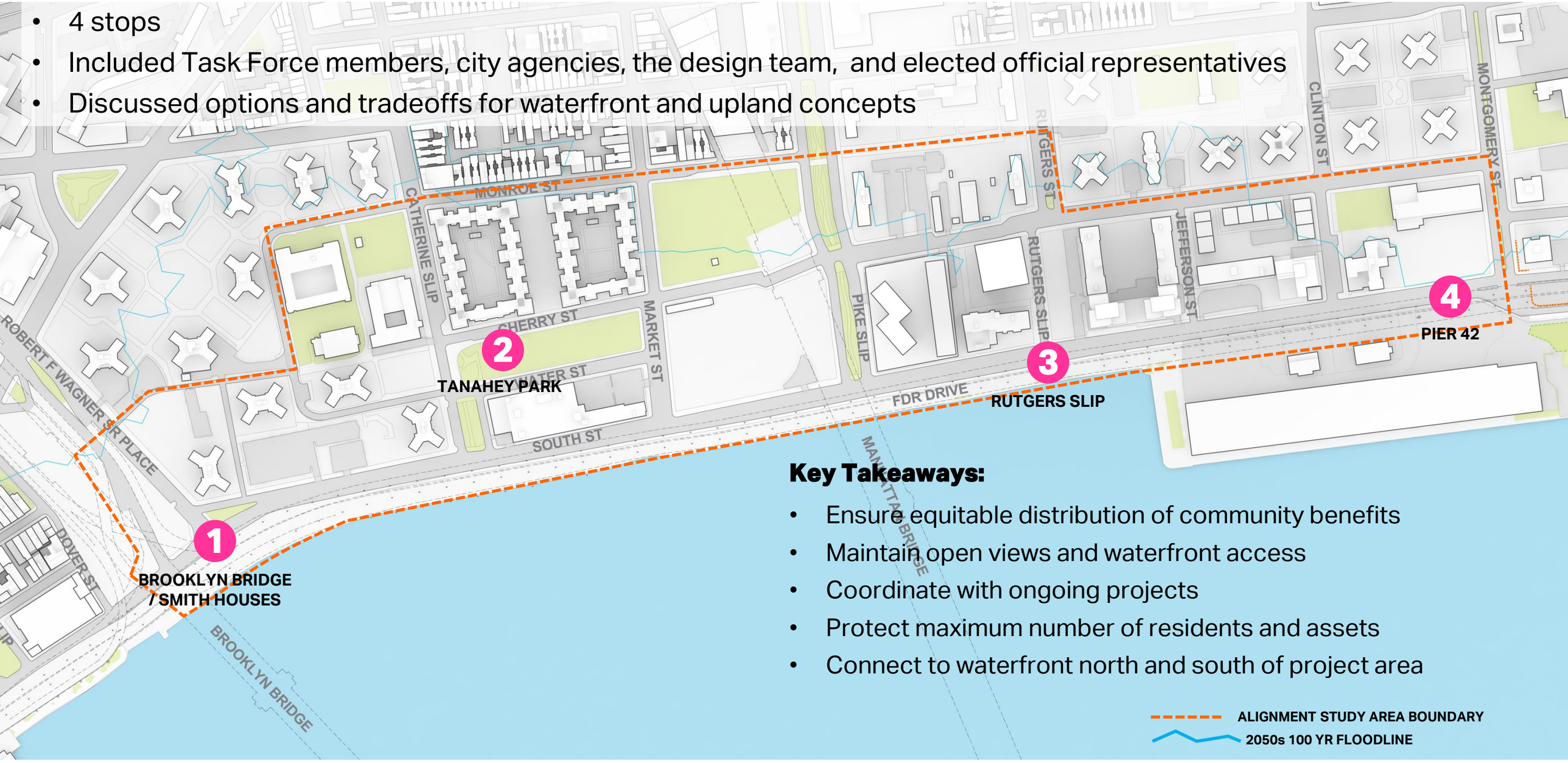
- 58 participants signed in, 31 were residents
- Overview of existing conditions throughout the neighborhood and potential impacts of interventions

Key Takeaways:

- Knit the community together
- Improve social resiliency in addition to physical infrastructure
- Explore deployables for improved access and view preservation
- Integrate community amenities with passive protection

WALKING TOUR : JULY 10, 2017

- 4 stops
- Included Task Force members, city agencies, the design team, and elected official representatives
- Discussed options and tradeoffs for waterfront and upland concepts



Key Takeaways:

- Ensure equitable distribution of community benefits
- Maintain open views and waterfront access
- Coordinate with ongoing projects
- Protect maximum number of residents and assets
- Connect to waterfront north and south of project area

EVALUATION CRITERIA

CONSTRUCTABILITY

- Cost
- Structural requirements
- Impacts on utilities
- Disruptions to existing structures and transportation
- Failure risk

SCHEDULE

- Regulatory actions
- Environmental impacts
- Jurisdictional coordination

RESILIENCE

- Buildings, residents, and infrastructure protected
- Adaptability

OPERATION & MAINTENANCE

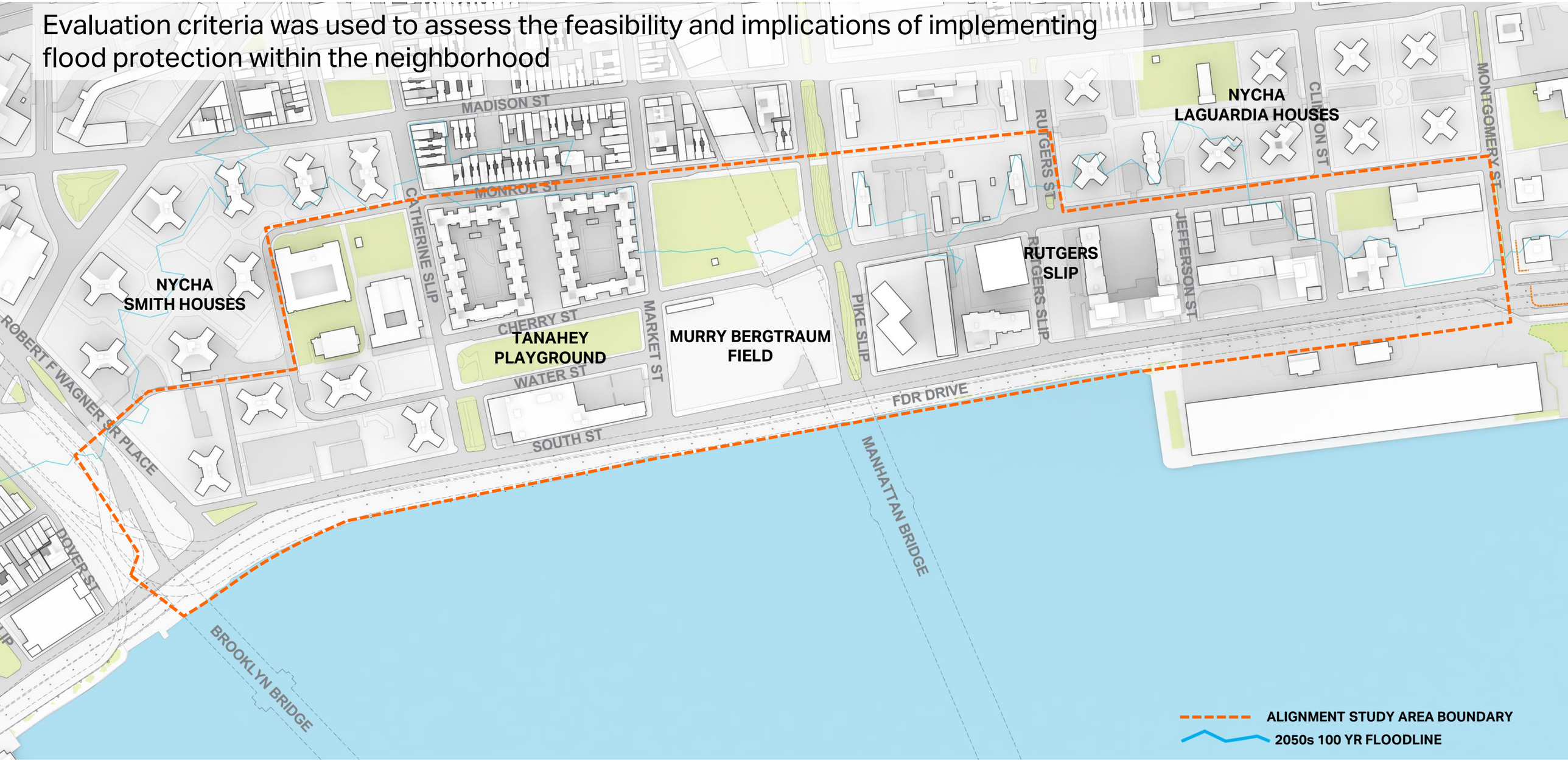
- Accessibility
- O&M requirements

PUBLIC REALM BENEFITS

- Community amenities
- Placemaking and urban design opportunities

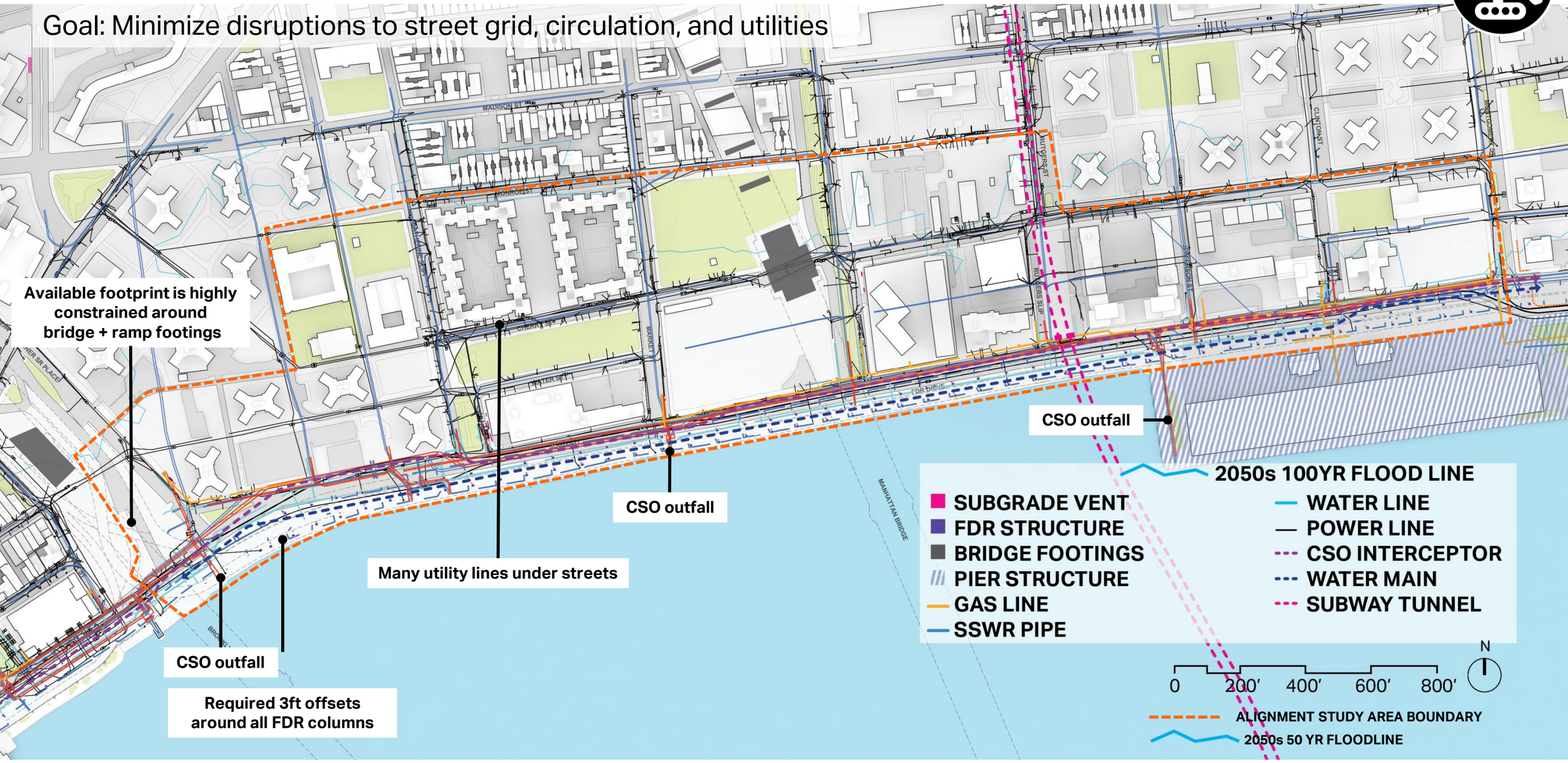
EVALUATION CRITERIA : STUDY AREA

Evaluation criteria was used to assess the feasibility and implications of implementing flood protection within the neighborhood



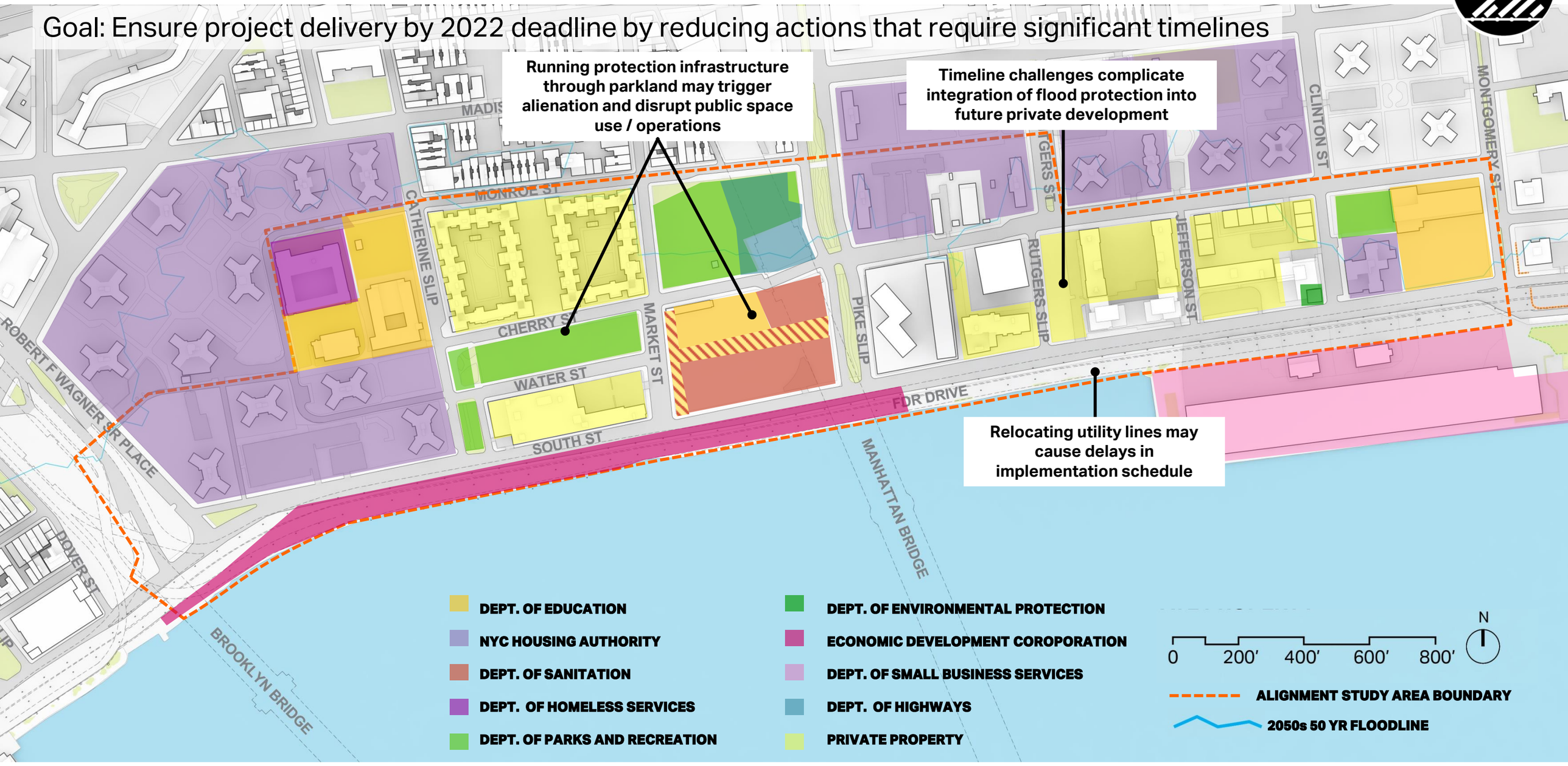
EVALUATION CRITERIA: CONSTRUCTABILITY

Goal: Minimize disruptions to street grid, circulation, and utilities



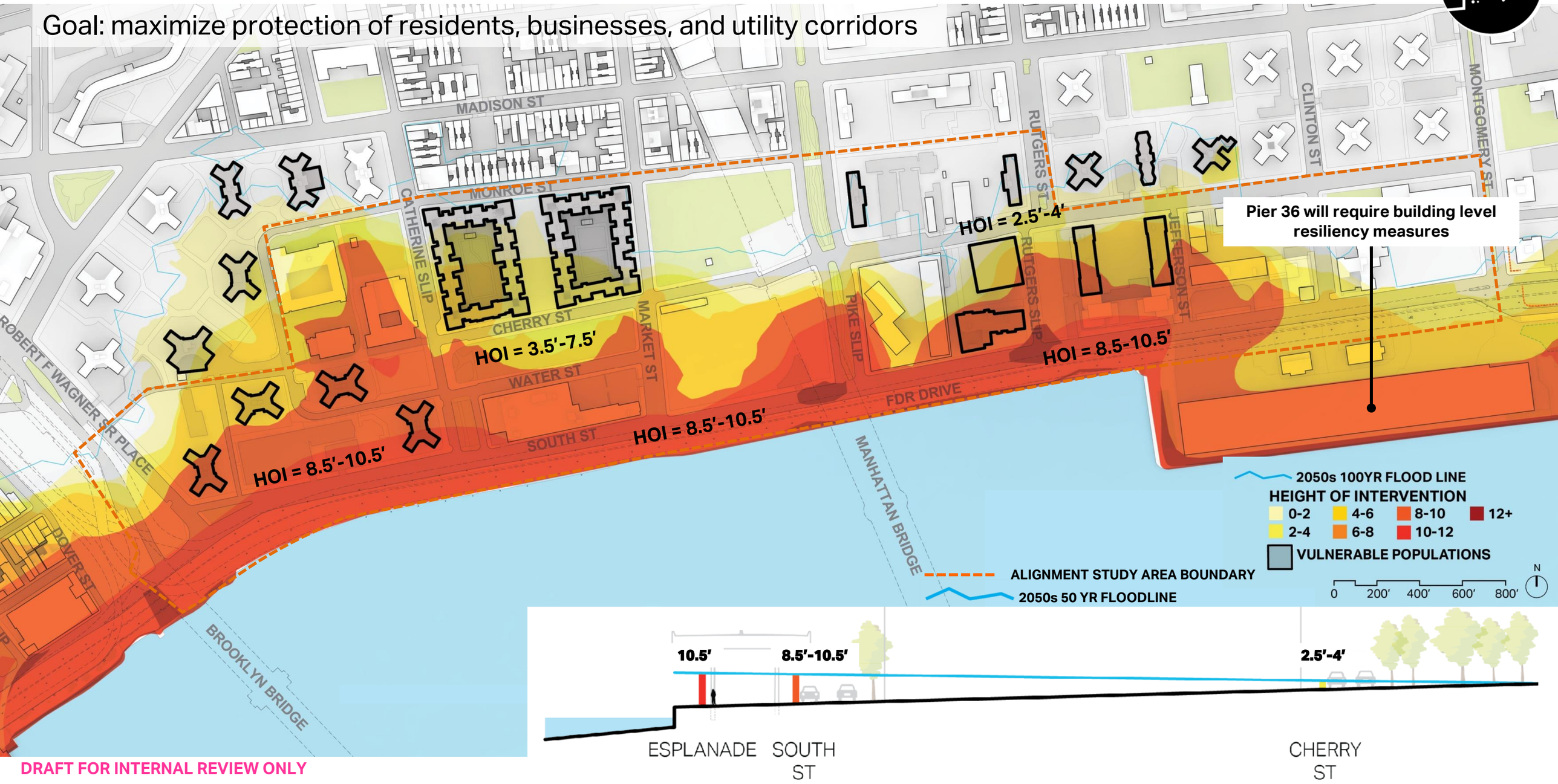
EVALUATION CRITERIA: SCHEDULE

Goal: Ensure project delivery by 2022 deadline by reducing actions that require significant timelines



EVALUATION CRITERIA: RESILIENCE

Goal: maximize protection of residents, businesses, and utility corridors

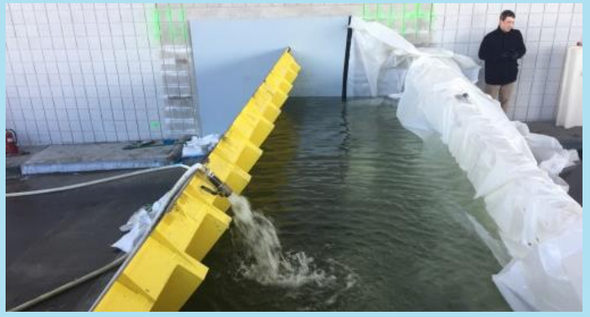


EVALUATION CRITERIA: OPERATIONS AND MAINTENANCE

Goal: Minimize potential disruptions to street crossings, driveways, and building entries

Coordinating closures of driveways and building access adds significant complication

Deployables are required when crossing streets



Tie-backs have potential impacts on emergency access during deployment

ALIGNMENT STUDY AREA BOUNDARY

2050s 50 YR FLOODLINE

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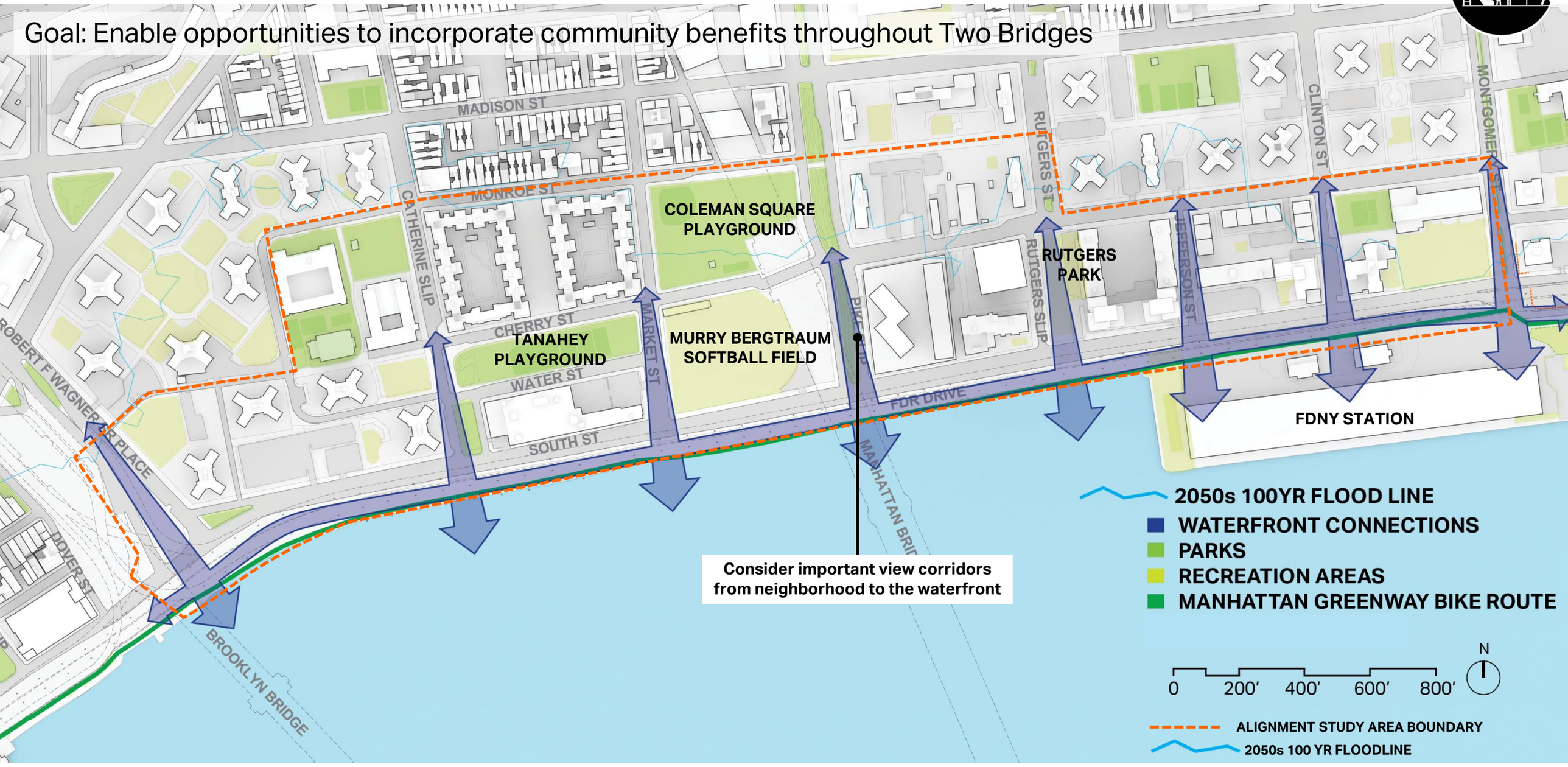
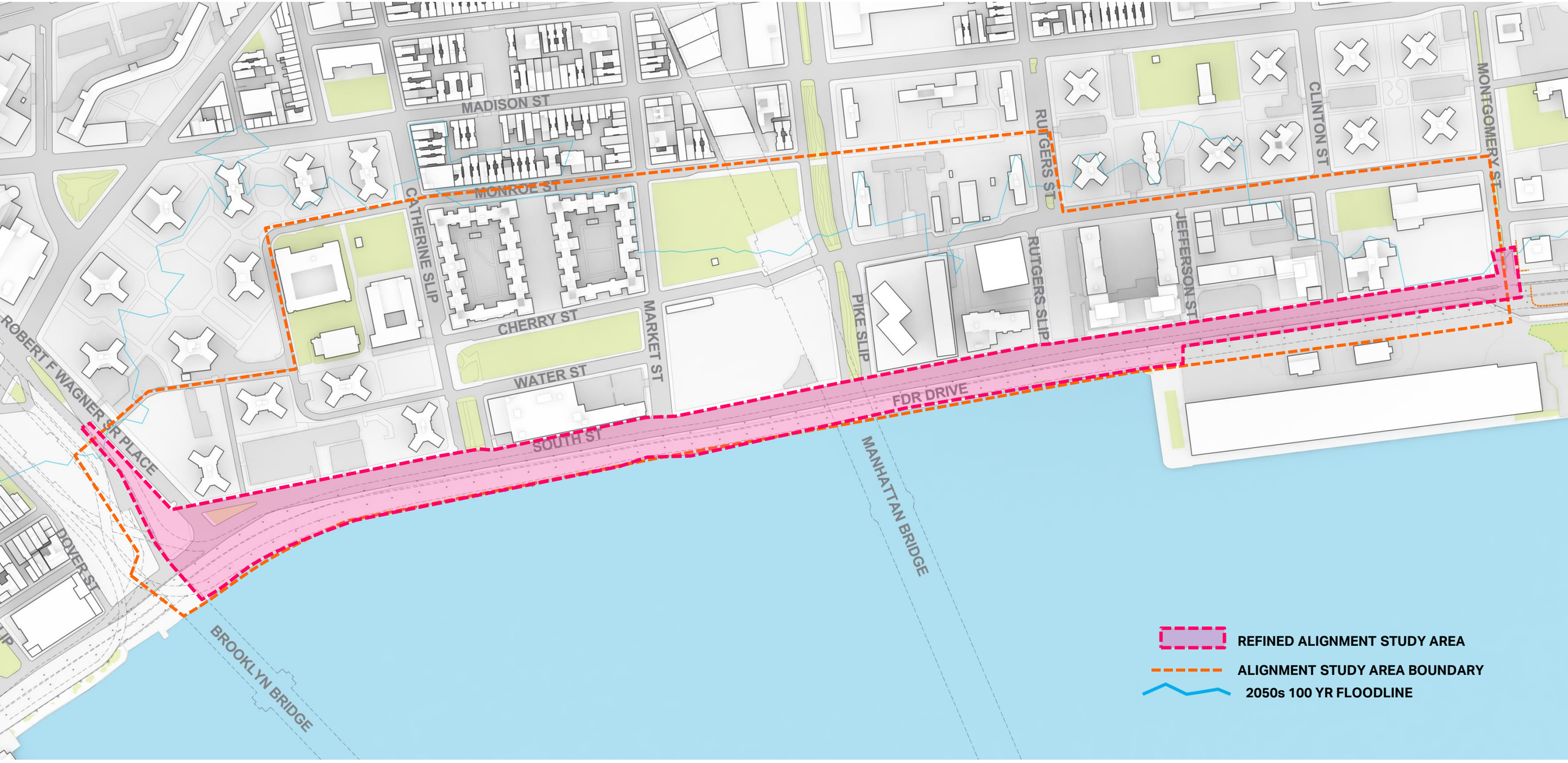
EVALUATION CRITERIA: PUBLIC REALM BENEFIT

Goal: Enable opportunities to incorporate community benefits throughout Two Bridges



PREFERRED PROJECT FOOTPRINT



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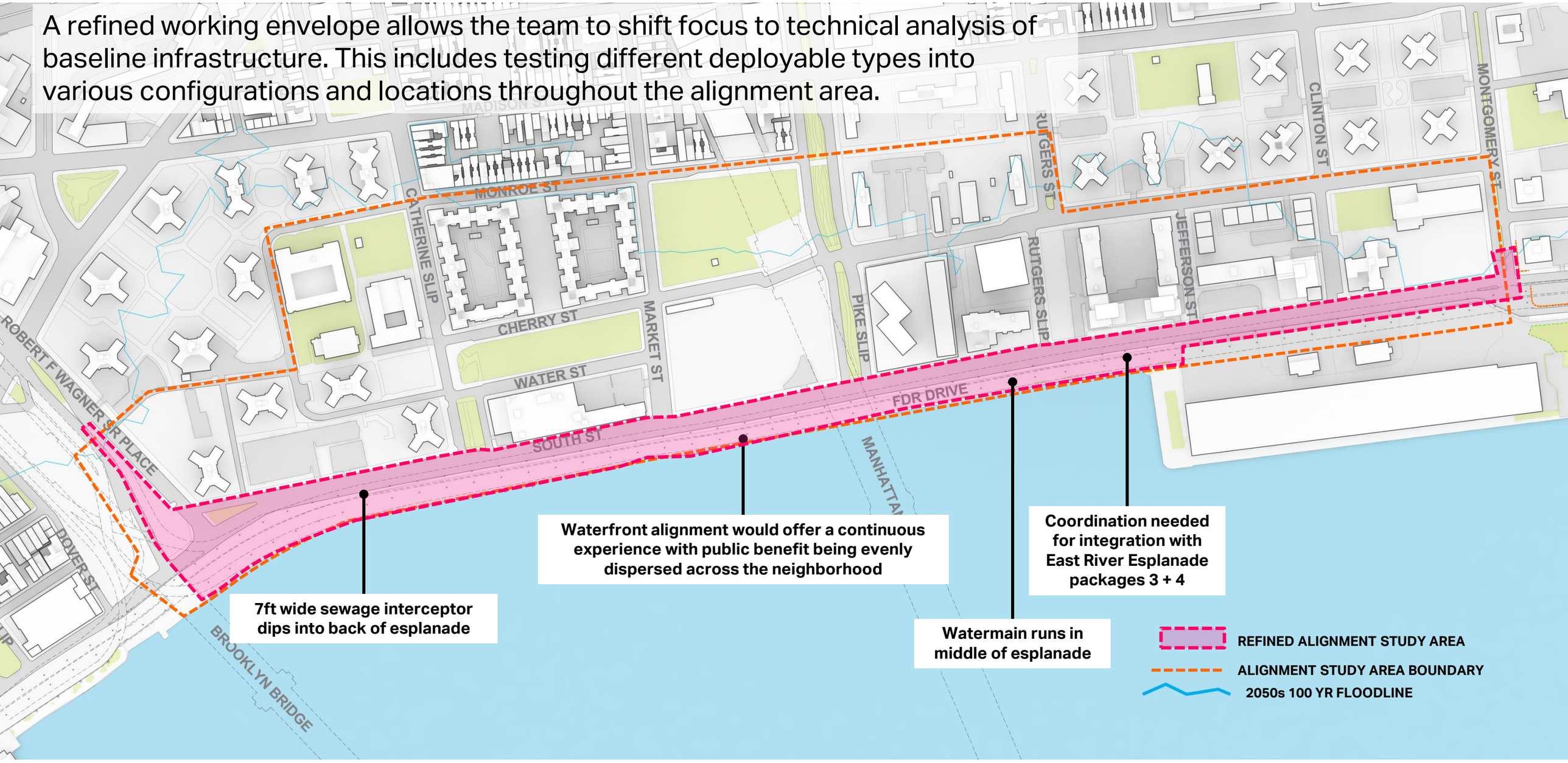
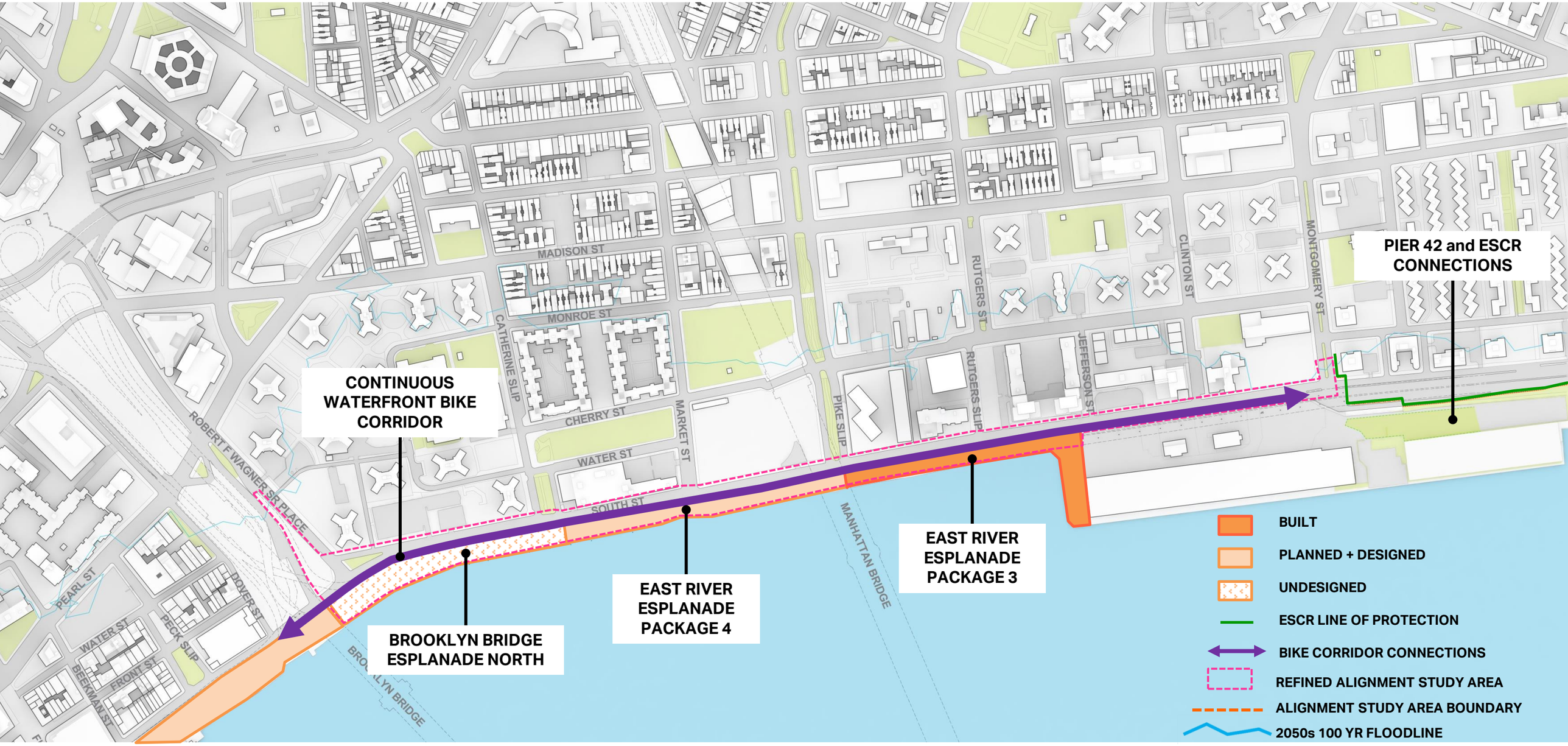
PREFERRED PROJECT FOOTPRINT

A refined working envelope allows the team to shift focus to technical analysis of baseline infrastructure. This includes testing different deployable types into various configurations and locations throughout the alignment area.



PROJECT COORDINATION



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TECHNICAL ANALYSIS UPDATE

EVALUATION CRITERIA : DEPLOYABLE TYPES

The project team is exploring numerous deployable flood protection technologies and manufacturers, and vetting their potential feasibility across project locations.

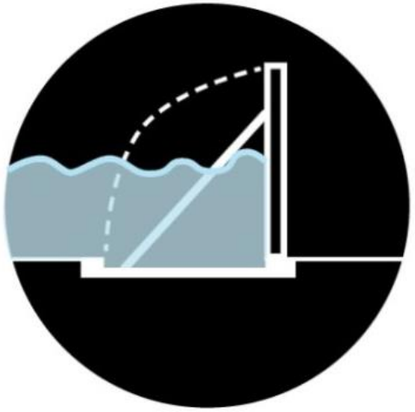
STRUCTURAL REQUIREMENTS

- Foundation size and depth
- Impacts on utilities
- Storage needs

COST

MAINTENANCE

- Frequency + extent of maintenance
- System lifespan



DEPLOYMENT

- Accessibility
- Labor – manpower
- Labor – hours

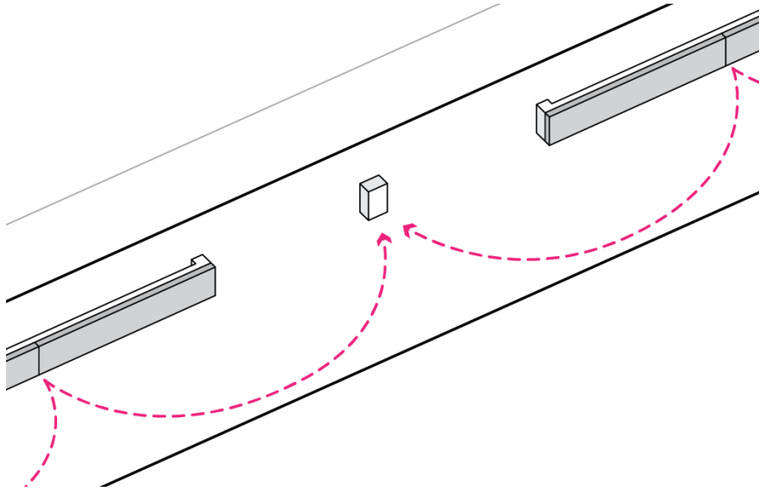
URBAN DESIGN IMPACTS

- Placemaking and urban design opportunities
- Preservation of view corridors

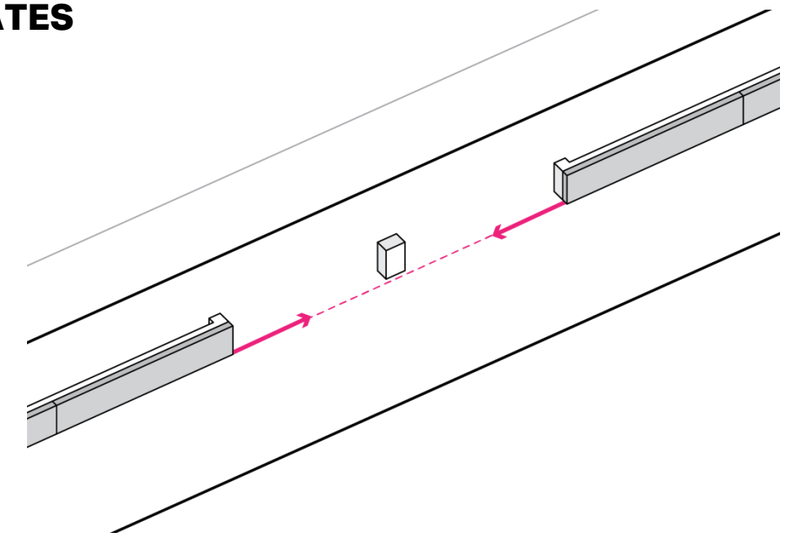
INFRASTRUCTURE TOOKLIT

GATES VISIBLE WHEN STORED

SWING GATES

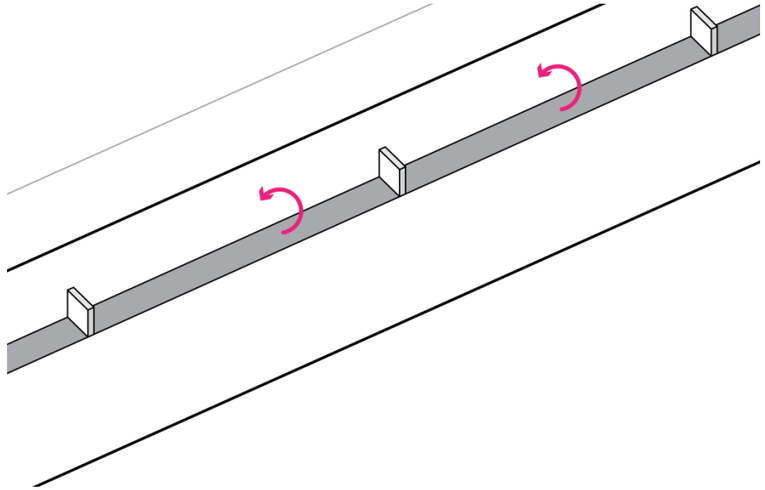


ROLLER GATES

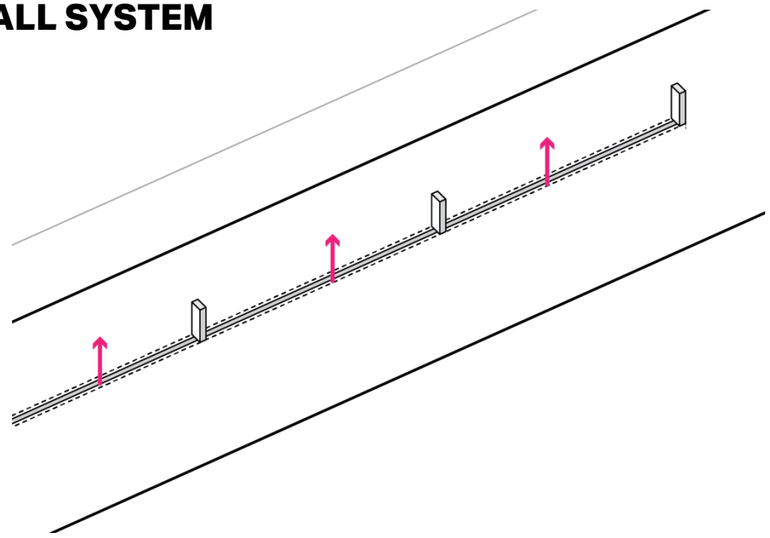


GATES HIDDEN WHEN STORED

FLIP UP BARRIER



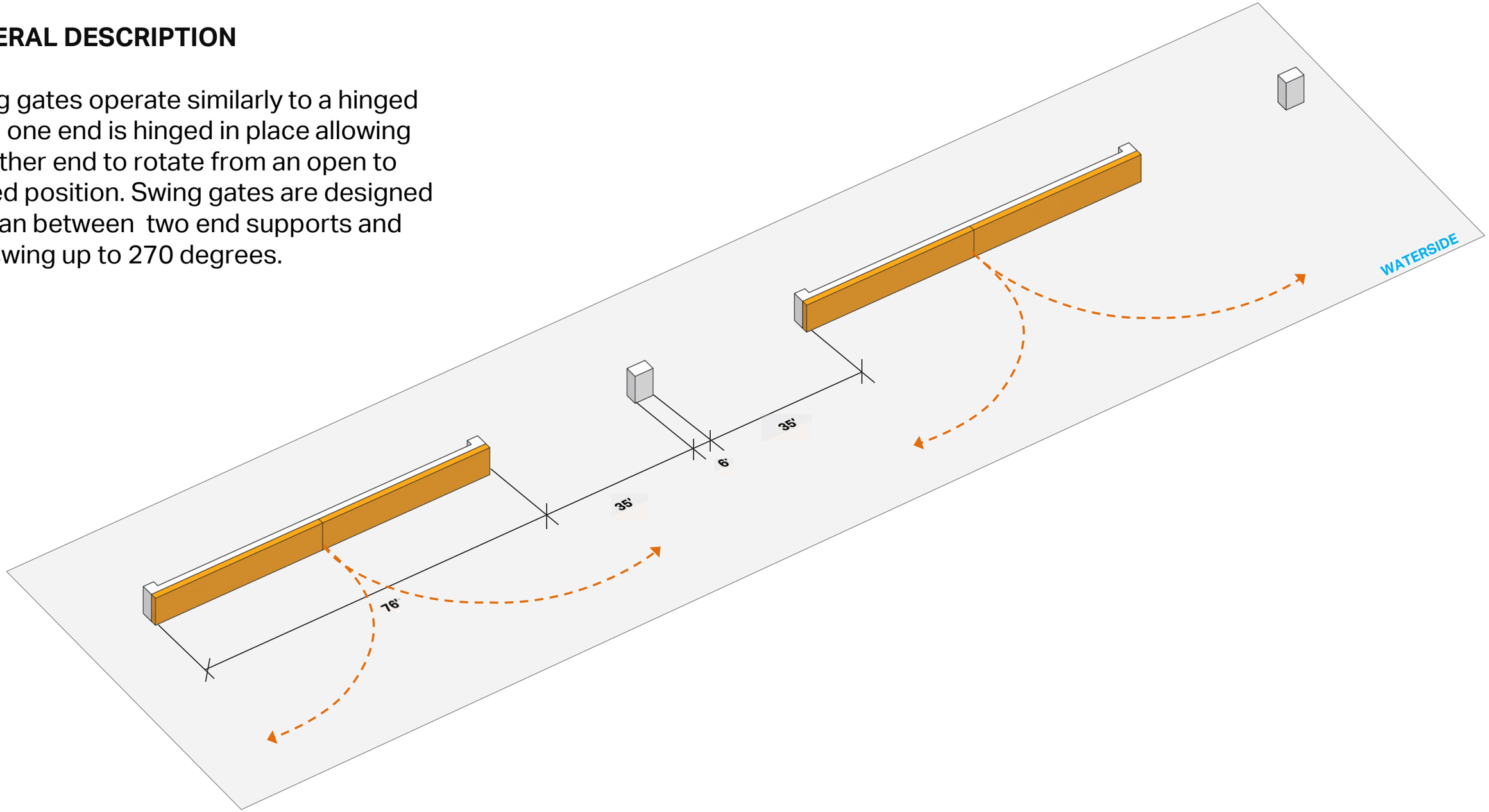
FLEX WALL SYSTEM



SWING GATES : BLUE SKY

GENERAL DESCRIPTION

Swing gates operate similarly to a hinged door; one end is hinged in place allowing the other end to rotate from an open to closed position. Swing gates are designed to span between two end supports and can swing up to 270 degrees.



SWING GATES : DEPLOYED

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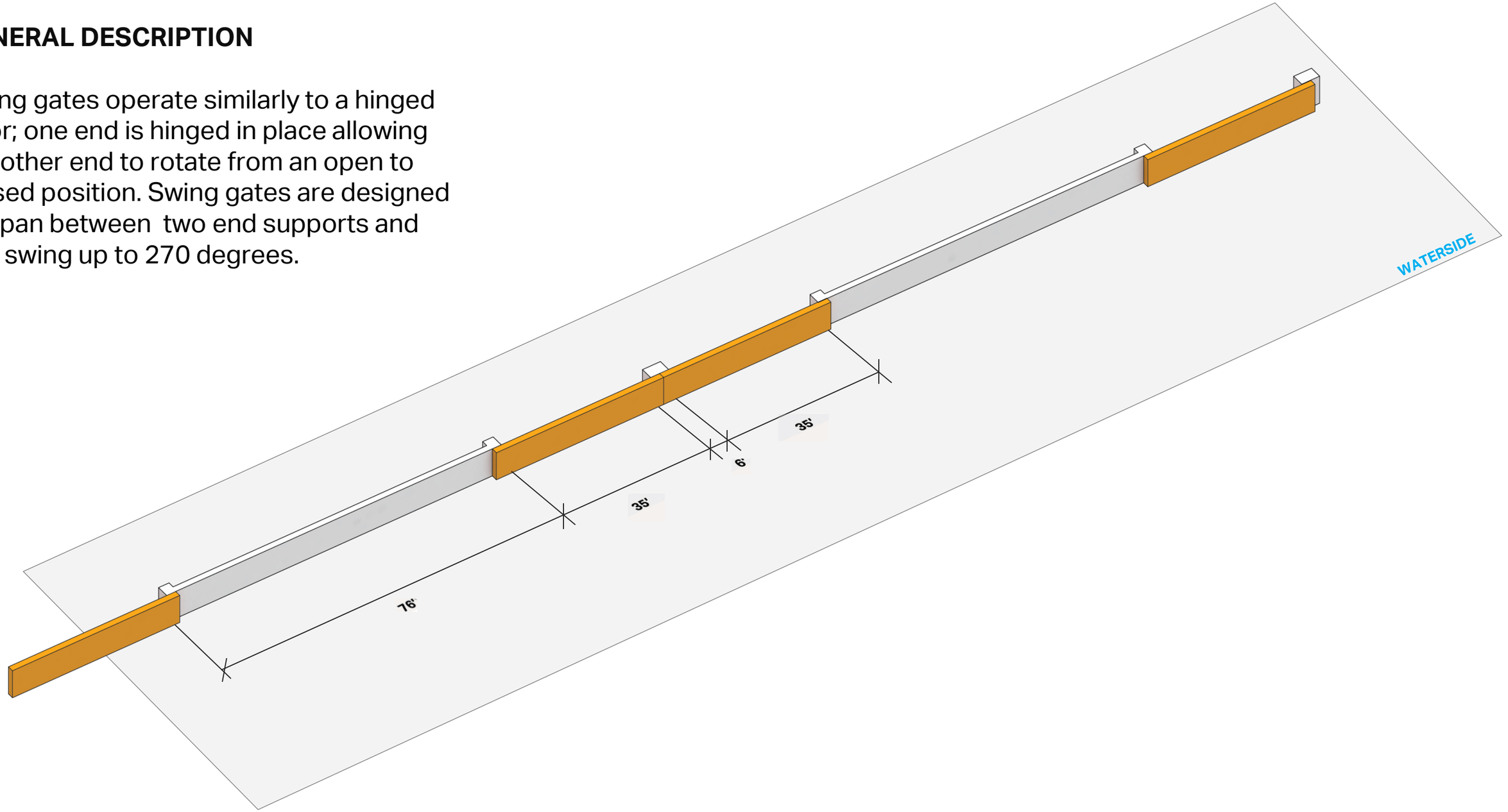
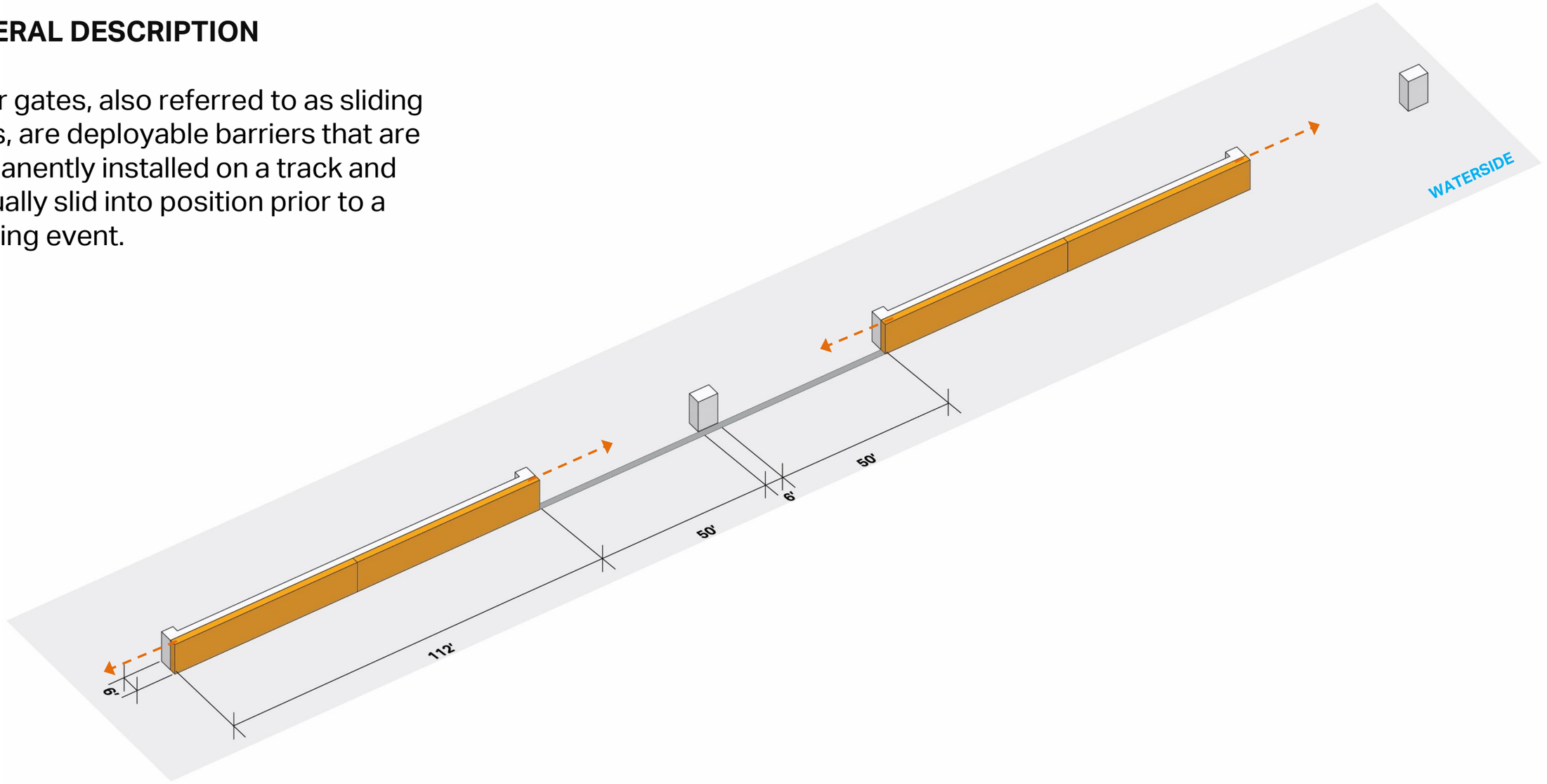


ROLLER GATES : BLUE SKY

GENERAL DESCRIPTION

Roller gates, also referred to as sliding gates, are deployable barriers that are permanently installed on a track and manually slid into position prior to a flooding event.



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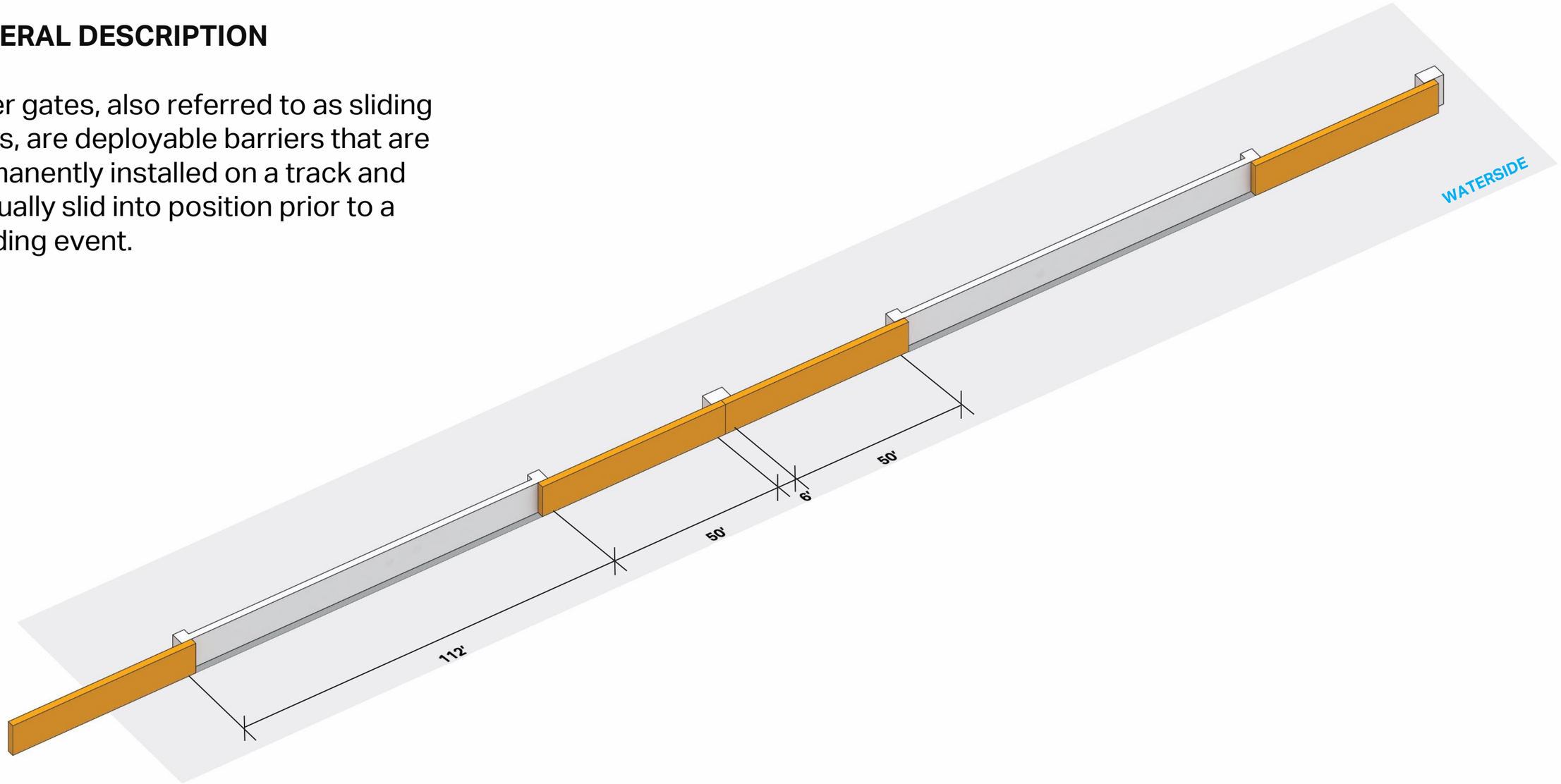
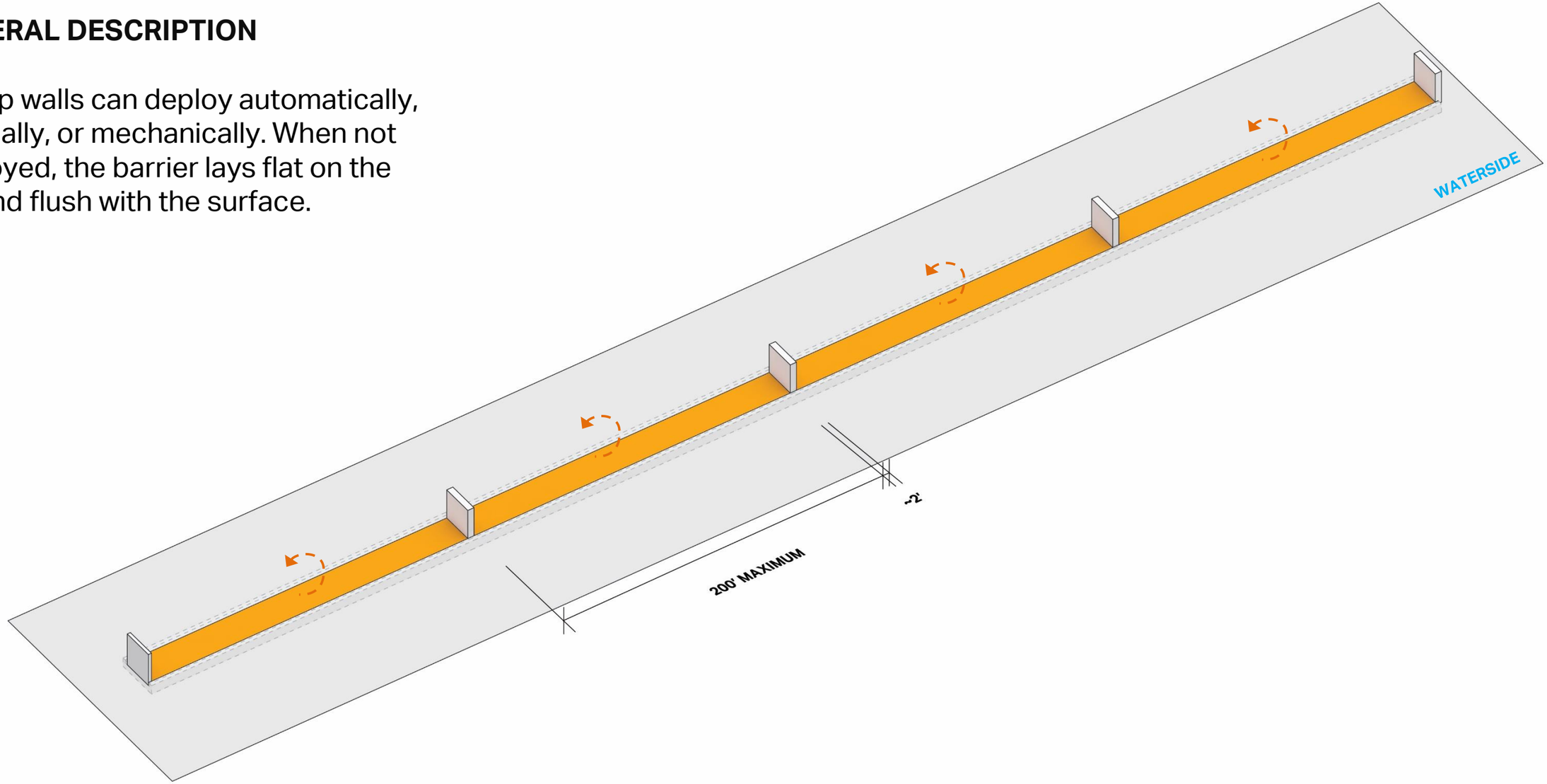


FLIP UP BARRIER : BLUE SKY

GENERAL DESCRIPTION

Flip up walls can deploy automatically, manually, or mechanically. When not deployed, the barrier lays flat on the ground flush with the surface.



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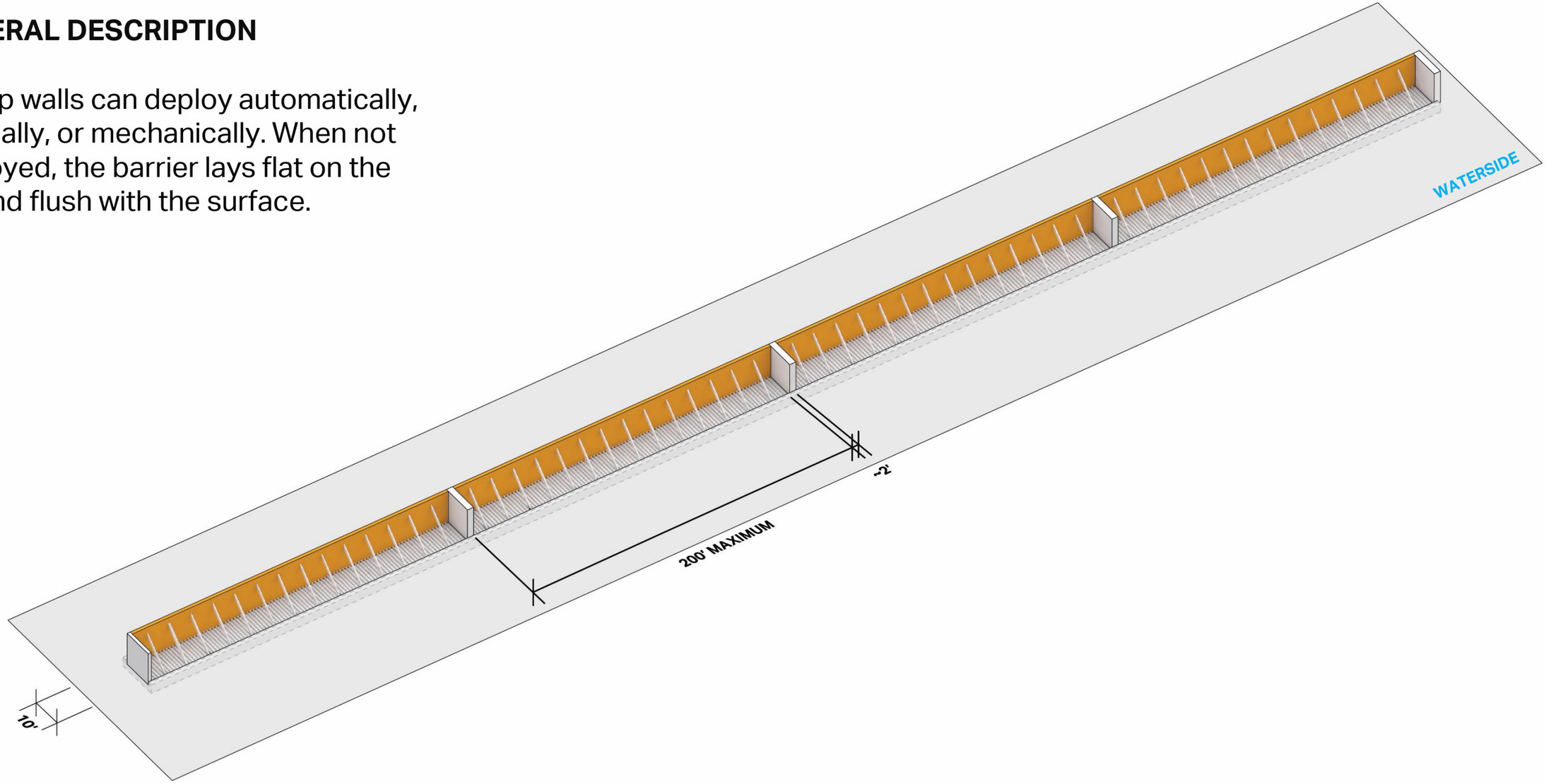
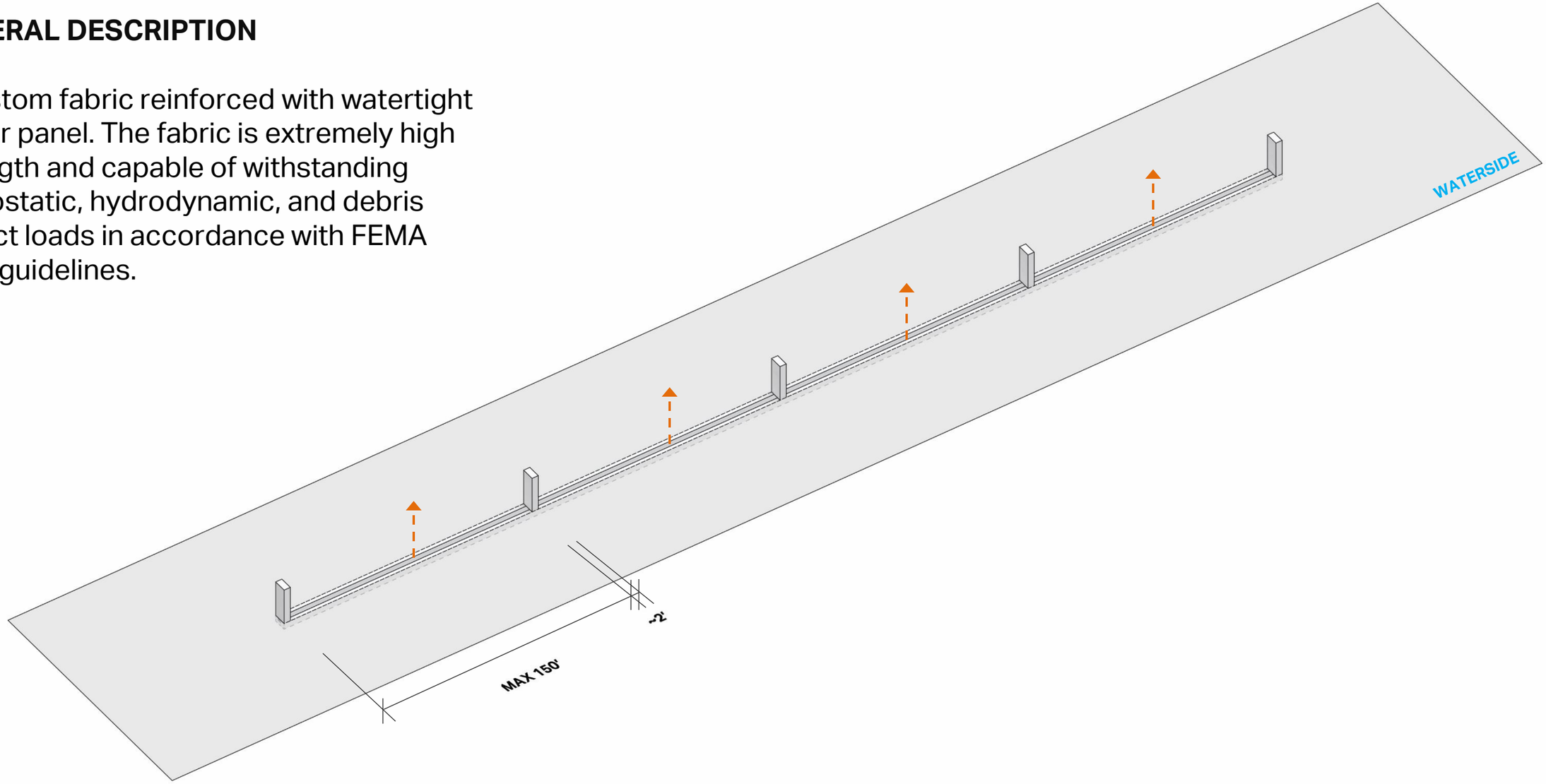


FLEX WALLS : BLUE SKY

GENERAL DESCRIPTION

A custom fabric reinforced with watertight Kevlar panel. The fabric is extremely high strength and capable of withstanding hydrostatic, hydrodynamic, and debris impact loads in accordance with FEMA P-55 guidelines.



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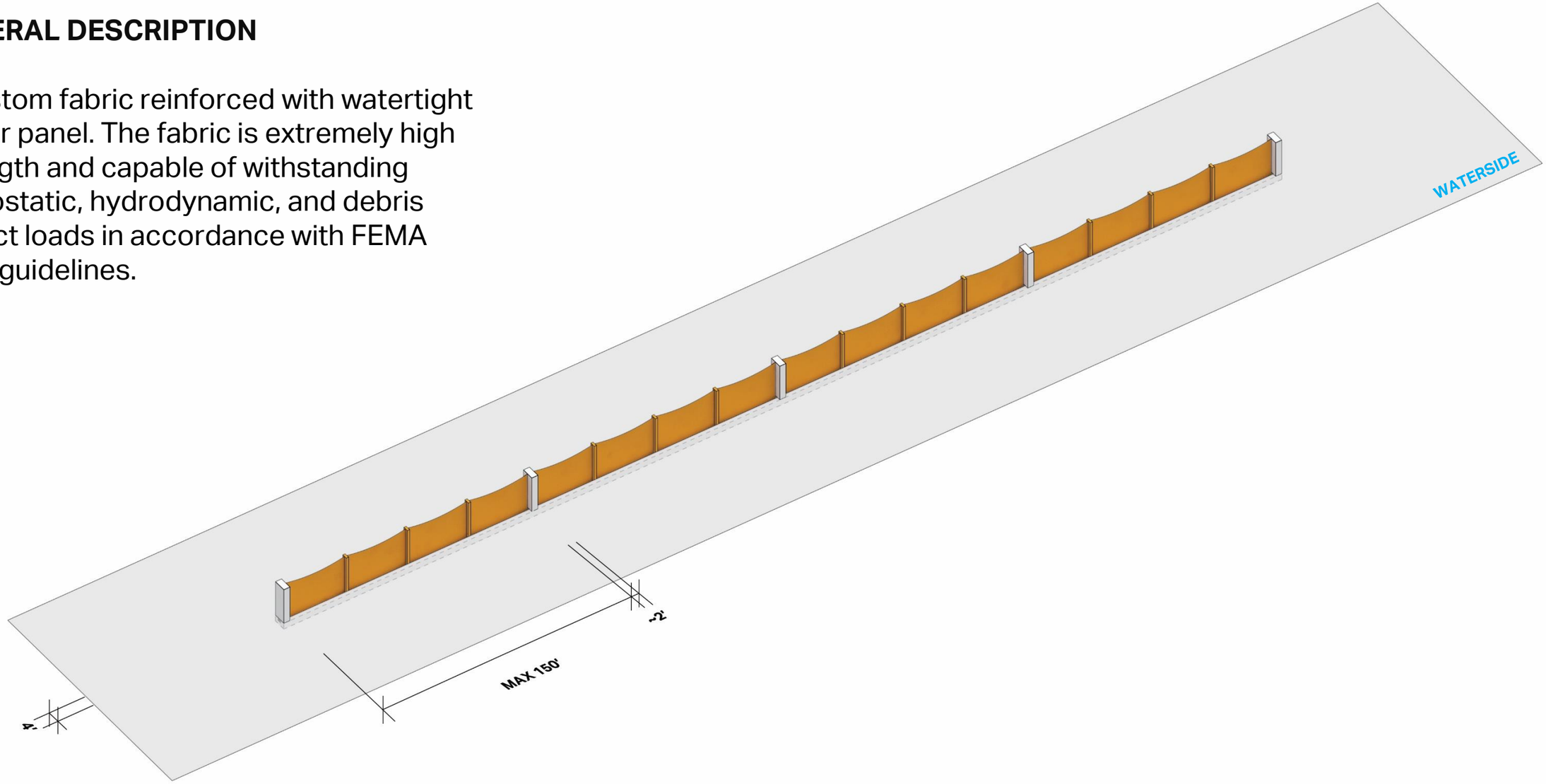
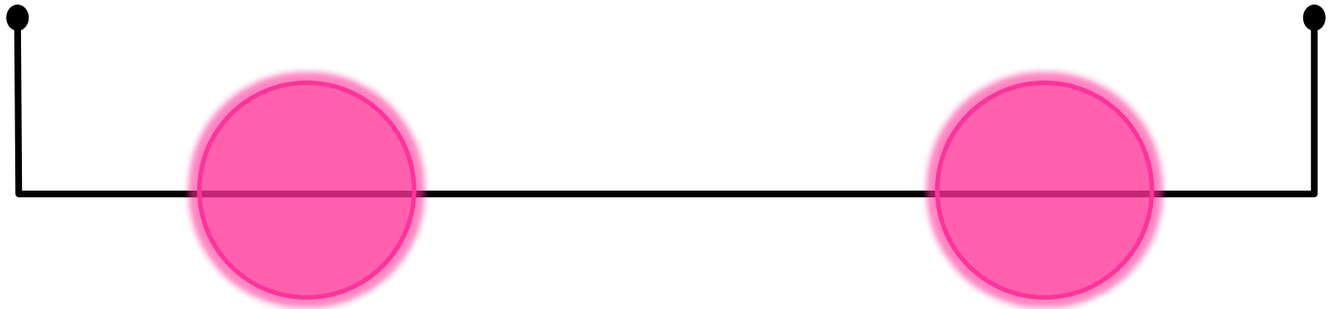


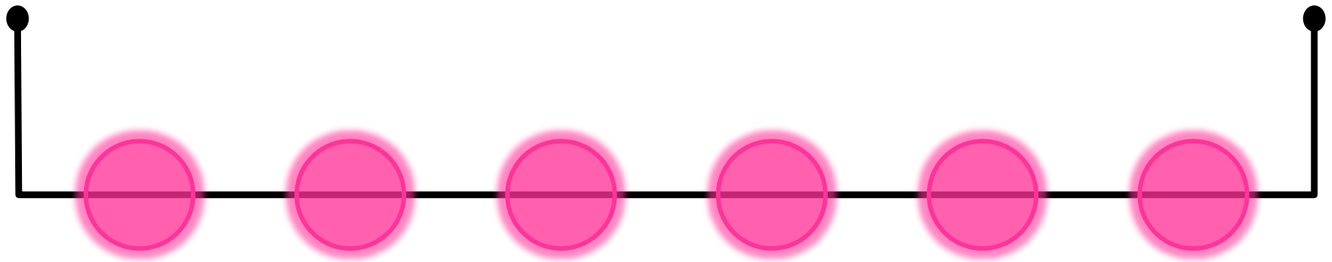
PLACEMAKING AND PROJECT DESIGN

PLACEMAKING STRATEGIES

Placemaking can be concentrated in a few key areas of the site, or distributed more evenly along the waterfront. In both strategies, it is possible that some areas may still only feature baseline infrastructure.



CONCENTRATED



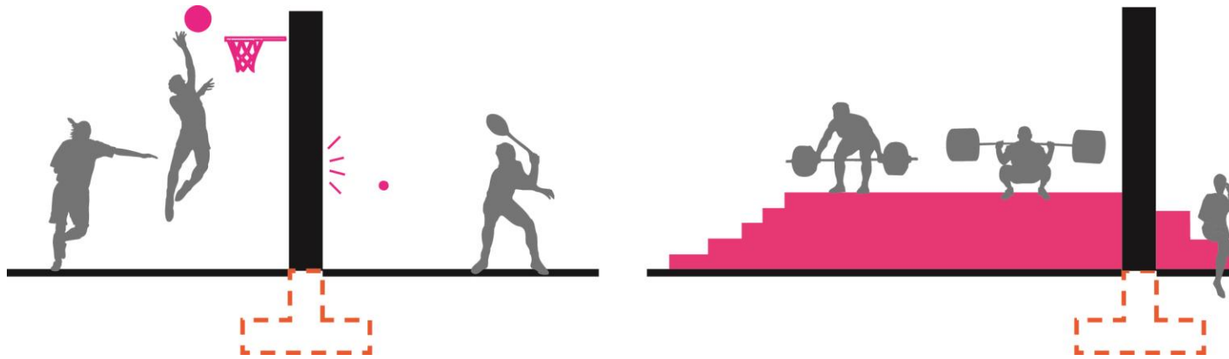
EQUITABLE

Key considerations for placemaking:

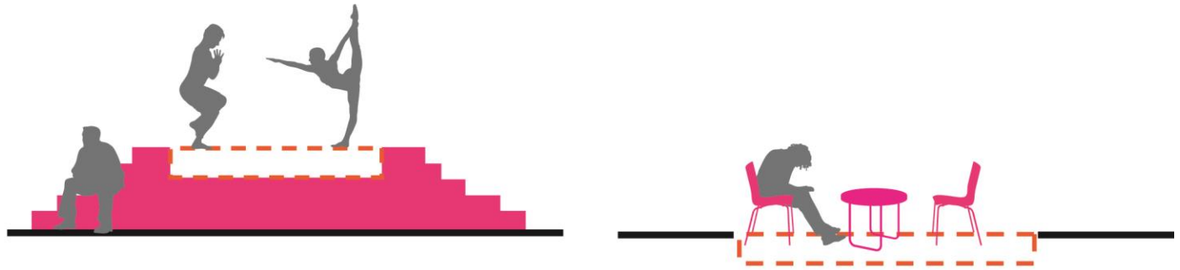
- Preservation of view corridors
- Available space
- Neighborhood connections
- Existing and planned amenities
- Community Feedback

ACTIVATION + INTEGRATION

USING FLOODWALLS



USING DEPLOYABLES



- The project team is investigating opportunities to activate the waterfront with site features that integrate flood protection infrastructure into programmatic amenities such as seating, sports courts, pavilions, and recreation spaces.
- These opportunities are dependent upon feasibility considerations such as foundation requirements, subsurface infrastructure, available funding, design flood elevation, maintenance requirements, etc.
- Programmatic amenities will consider planned and existing site features and community feedback.

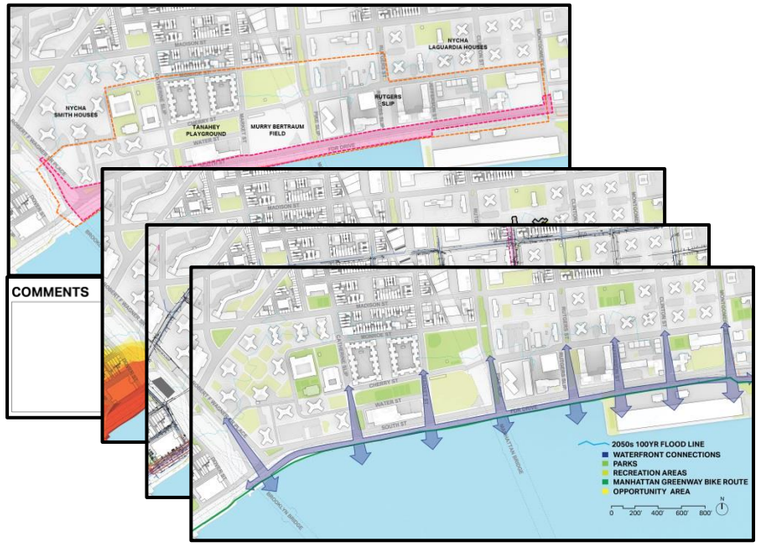
WORKSHOP ACTIVITY : GOALS

1. **INFORM ABOUT FACTORS LEADING TO PREFERRED FOOTPRINT**
    - Discuss how community feedback is being used as a lens
    - Review evaluation criteria in-depth: Constructability, Schedule, Resilience, Operations & Maintenance, Public Realm Benefits
    - Look at tradeoffs considered throughout study area
    - Provide an opportunity for participants to understand the challenges and opportunities presented by neighborhood constraints

2. **DISCUSS OPPORTUNITIES FOR INTEGRATION AND ACTIVATION**
    - Provide participants an opportunity to learn how protection can integrate into their community and activate community assets
    - Collect participant feedback on community concerns, needs, and programming ideas for specific places in preferred footprint

WORKSHOP ACTIVITY : FORMAT

1. **Work Session #1**
   - Small group discussion
   - Use map(s) and/or transparency layers with preferred project footprint, key community assets, and evaluation criteria
   - Facilitator walks through evaluation criteria to explain how preferred footprint was reached
   - Participants comment directly through writing on tool or through facilitated discussion



2. **Work Session #2 (TBD)**

NEXT STEPS AND TIMELINE

- Public meeting: End of November/December

- Spring 2018 TF/ Public Meeting

-Concept Design Progress
-Drainage Management Update
-Schematic Design/ Construction Contract Update