



Southeast Brooklyn Waterfront Planning Committee Meeting #4

September 17, 2014

Agenda for Planning Committee Meeting #4

- | | |
|--|--------------------|
| 1. Public Engagement Event #2 debrief | 7:00-7:15pm |
| 2. Project brainstorming | 7:15-8:45pm |
| a. Coastal Protection | 7:15-8:00pm |
| b. Power | 8:00-8:45pm |
| 3. Next steps | 8:45-9:00pm |

Where we are in the process

Next deliverable: list of preliminary projects due on Oct. 3

Next 2 weeks: brainstorming project ideas

SEPTEMBER/OCTOBER

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|--------|---|---|--|---|-----------------|
| 14 | 15 | 16 | 17 PC4: <i>Coastal Protection, Power</i> | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 Rosh Hashana Begins | 25 Rosh Hashana | 26 Rosh Hashana | 27 |
| 28 | 29 | 30 Potential NYC DEP Meeting: <i>Drainage</i> | 1 PC5: <i>Emergency Prep, Economic Dev, Housing</i> | 2 Potential NYC DEP Meeting: <i>Drainage</i> | 3 Yom Kippur Begins  List of preliminary projects due | 4 Yom Kippur |

Meeting goals and desired outputs

Goals:

- Review PE#2 and outreach strategy
- Update strategies list
- Gather Committee input on potential coastal protection and power projects
- Understand various feasible project options

Outputs:

- Set of preliminary project ideas for coastal protection and power

NY Rising to the Top competition

Possible additional funds:

1. Regional Approach (award amount: \$1.5 million)
2. Inclusion of Vulnerable Populations (award amount: \$1.0 million)
3. Use of Green Infrastructure (award amount: \$1.0 million)

Intent to Apply due October 15th

Public Engagement Event #2 debrief



Public Engagement Event #2 debrief

Attendance: 30 people

How can we increase attendance?

- Civic Association meetings
- Schools: Backpack mailers
- Targeted flyering
- Posters/postcards placed in stores/restaurants
- E-mail blasts
- Untapped religious, cultural organizations?

Public Engagement Event #2 strategy voting results

What should NY Rising in Southeast Brooklyn Waterfront focus on? Vote for your 3 most important strategies.

1. Improve stormwater and wastewater management to prevent flooding and backup



5. Improve residential resiliency through education, technical assistance, and funding



2. Leverage existing assets (including wetlands, plants/vegetation) to stabilize coastal edge and reduce flooding



6. Discourage development at at-risk undeveloped locations



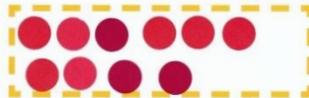
3. Make power supply more resilient and redundant



7. Avoid, minimize, and mitigate any potential negative impacts from new projects



4. Enhance emergency preparedness and response through reliable communications, centralized spaces, transportation coordination, and strengthened capacity of existing organizations/programs



8. Improve resiliency of commercial corridors



9. Ensure access to food and critical supplies

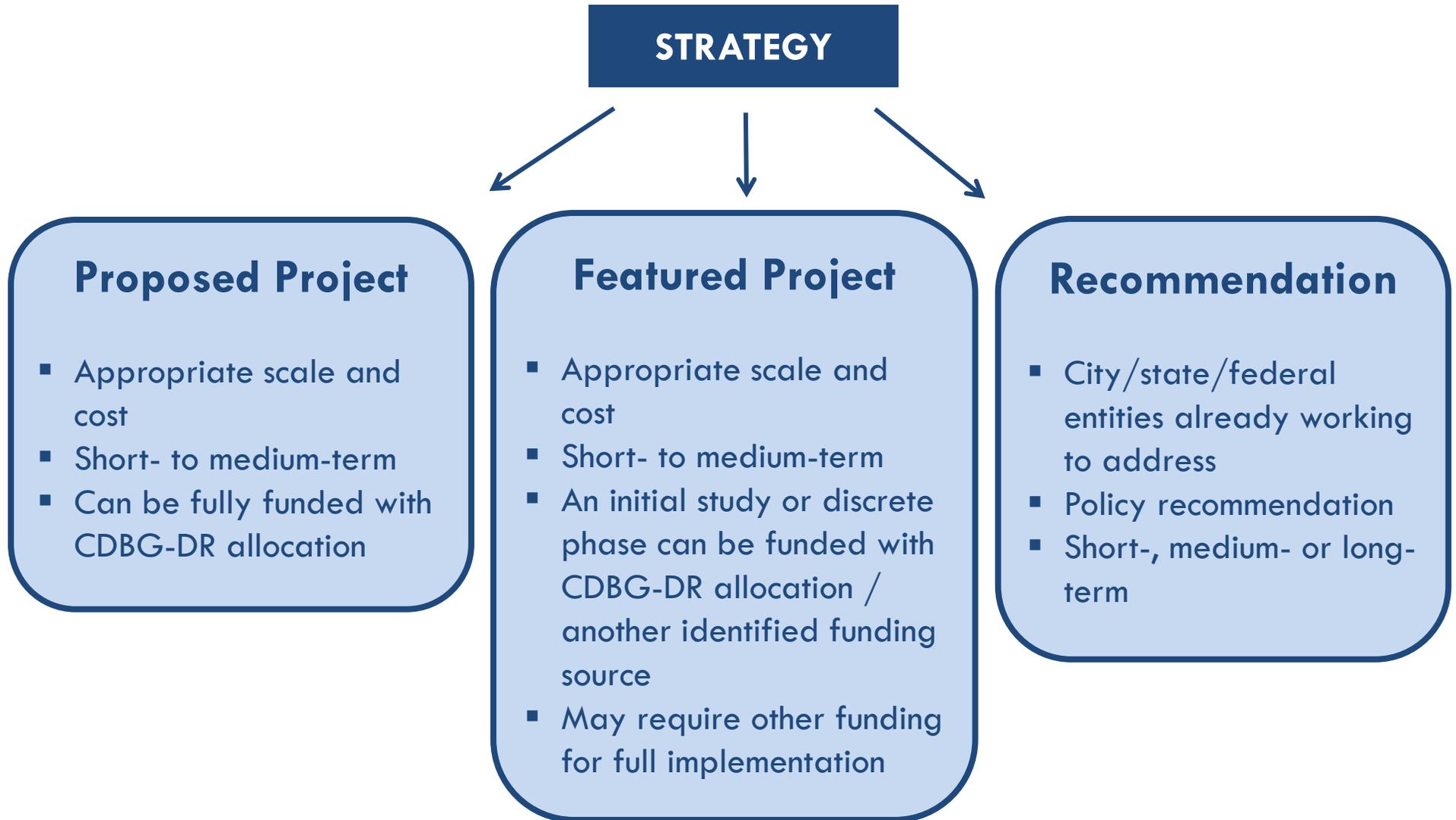


Public Engagement Event #2 strategy voting*

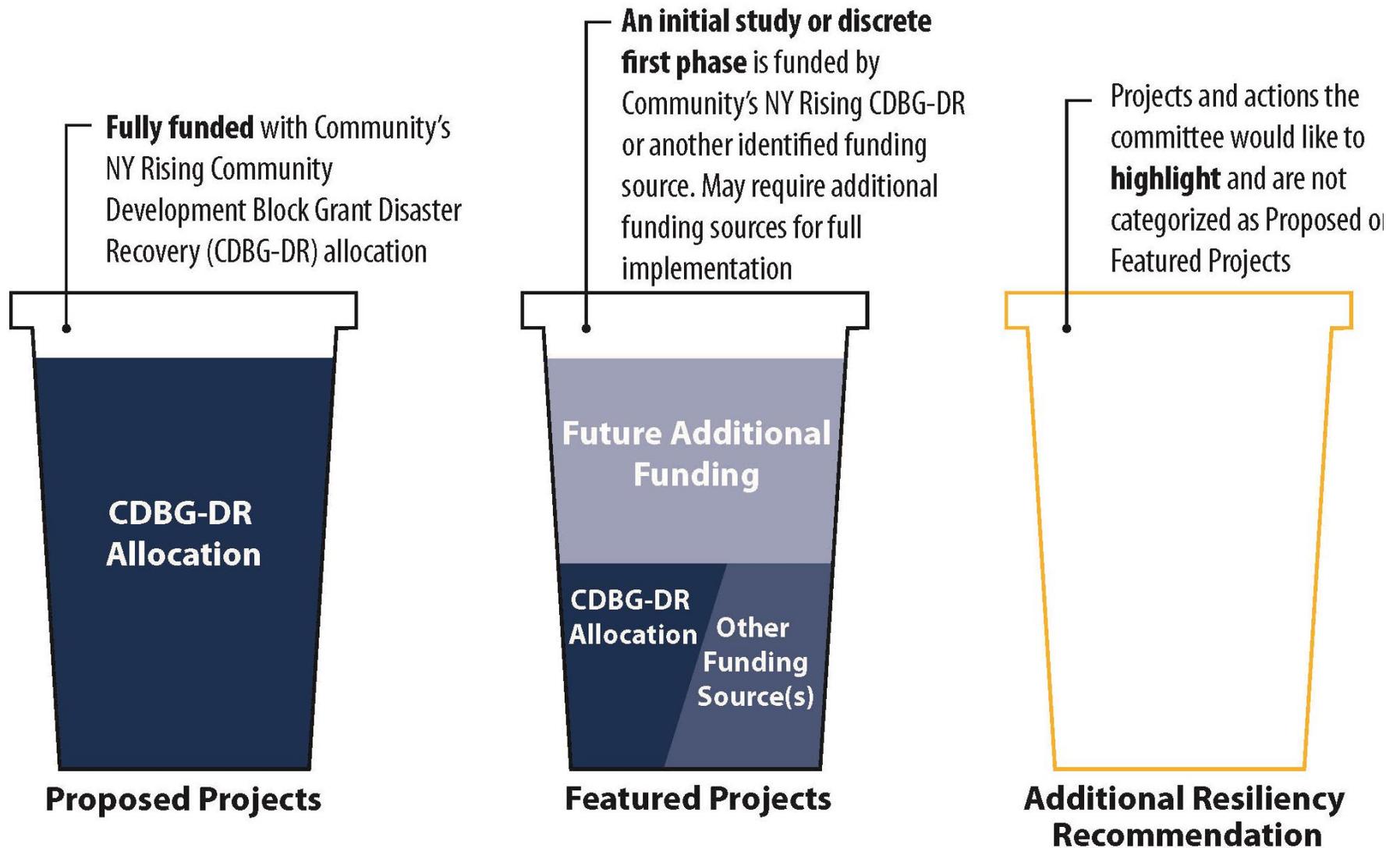
| Strategy | # of Dots |
|---|-----------|
| Stormwater and wastewater management | 23 |
| Coastal edge protection | 12 |
| Emergency preparedness and response | 10 |
| Power supply resiliency | 9 |
| Residential resiliency | 6 |
| Discouraging development at at-risk locations | 4 |
| Mitigating negative impacts from new projects | 3 |
| Food and critical supplies | 3 |
| Commercial corridor resiliency | 0 |

**Note: this reflects informal Community feedback and is intended as a tool for the Committee. It is not a formal vote.*

In this phase, we'll identify preliminary initiatives for evaluation and funding.



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For example:

STRATEGY: Enhance coastal protection /
Mitigate negative impacts from new
projects

↙ ↘

Project

- Comprehensive flood protection study
- Targeted flood protection intervention

Recommendation

- Recommend that agencies incorporate flood protection strategies for SEBW into existing plans (e.g., USACE reformulation study)
- Review and mitigate any negative impacts from existing projects

List of strategies

Which are the biggest priorities, and which should be consolidated or removed?

- Improve **stormwater and wastewater management** to prevent flooding and backup
- Leverage existing assets to **stabilize coastal edge and reduce flooding**
- Make **power supply more resilient** and redundant
- **Enhance emergency preparedness and response** through reliable communications, centralized spaces, transportation coordination, and strengthened capacity of existing organizations/programs
- **Improve residential resiliency** through education, technical assistance, and funding
- **Discourage development** at at-risk locations
- Avoid, minimize, and mitigate any **potential negative impacts from new projects**
- Improve **resiliency of commercial corridors**
- Ensure **access to food and critical supplies**

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COASTAL PROTECTION

An aerial photograph showing a coastal area. On the left, a multi-lane highway runs parallel to a body of water. To the right of the highway is a large green sports complex with several baseball fields and tennis courts. Further right is a residential neighborhood with many houses. The foreground shows a mix of greenery and a small pond. The sky is overcast.

Strategy: Leverage **existing assets** to stabilize the coastal edge and reduce flooding

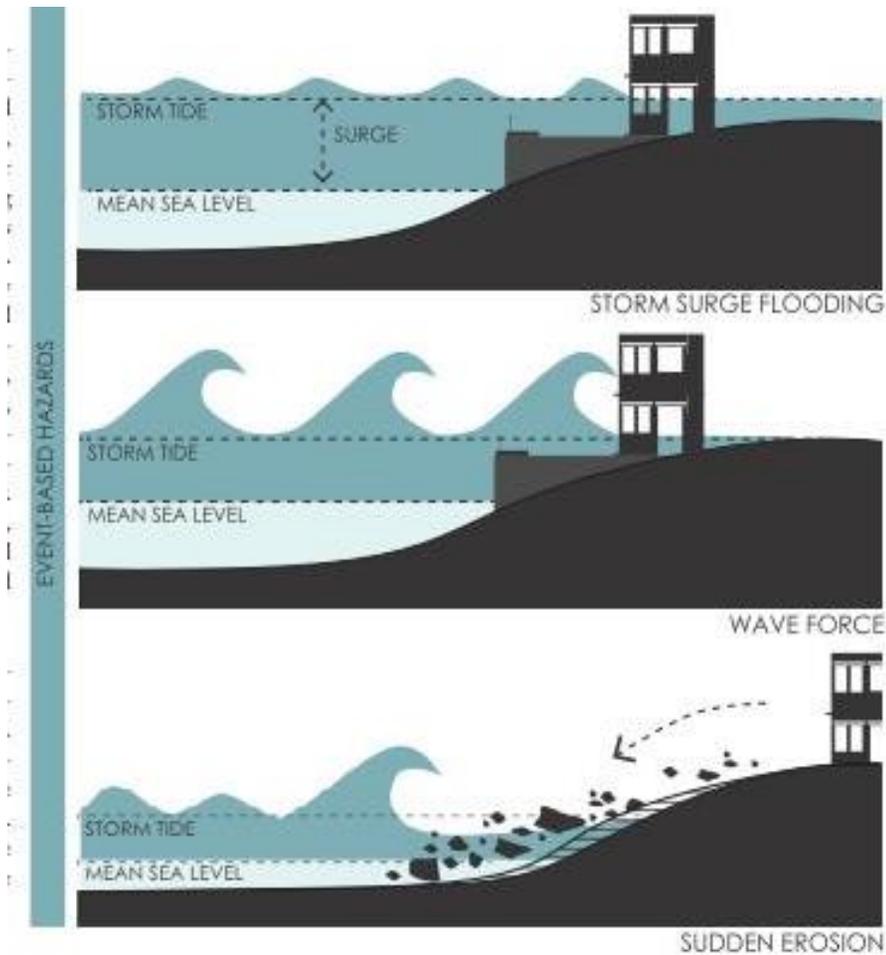
What are we protecting against?
Storm intensity and frequency is increasing.



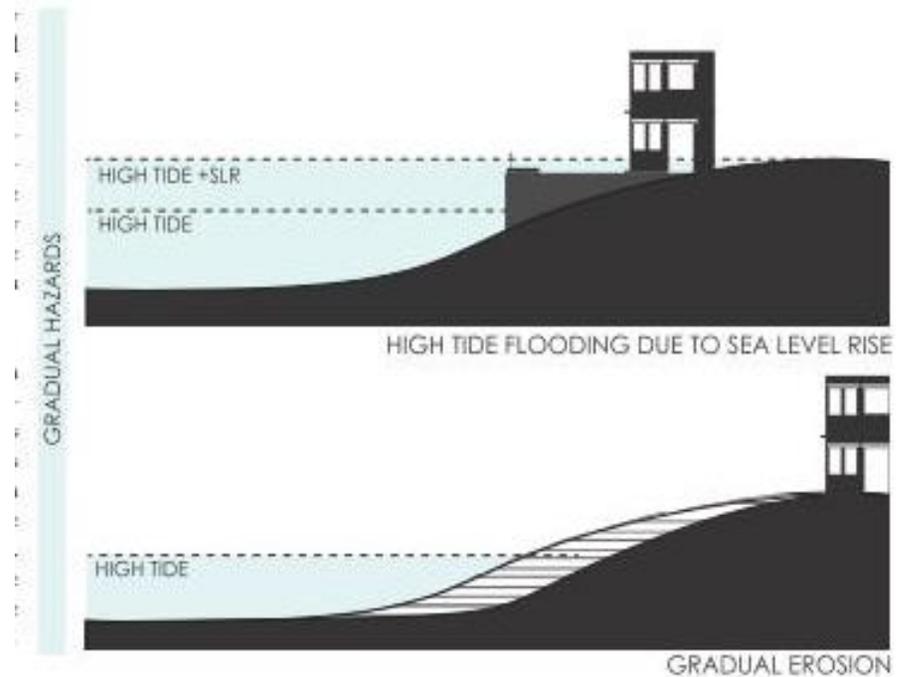
What are we protecting against?

Coastal hazards

Event-based hazards: Coastal storms

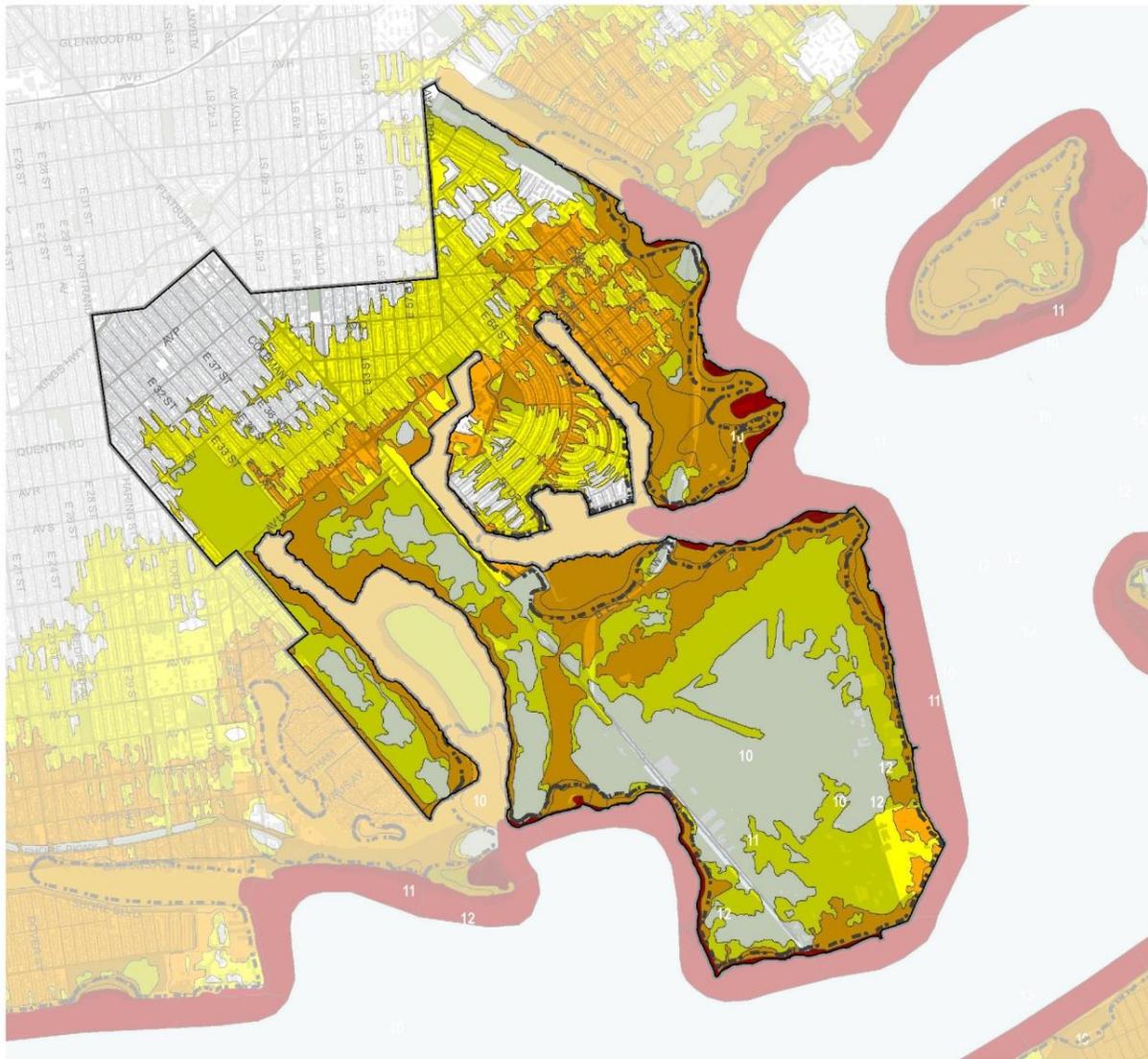


Gradual hazards



Source: New York City Dept. Of City Planning, "Urban Waterfront Adaptive Strategies" (2013)

Event-based hazards: the 100-year storm and 500-year storm



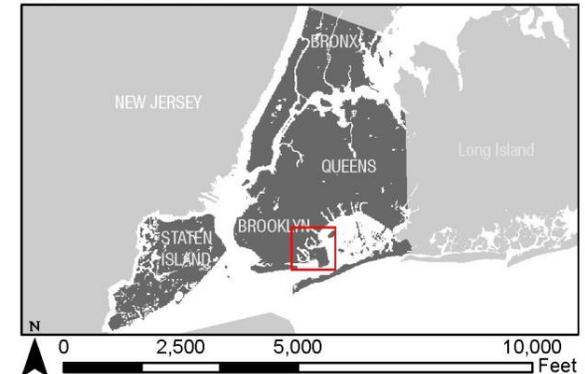
NY Rising Community Reconstruction Program
Southeast Brooklyn Waterfront Planning Area

□ Planning Area

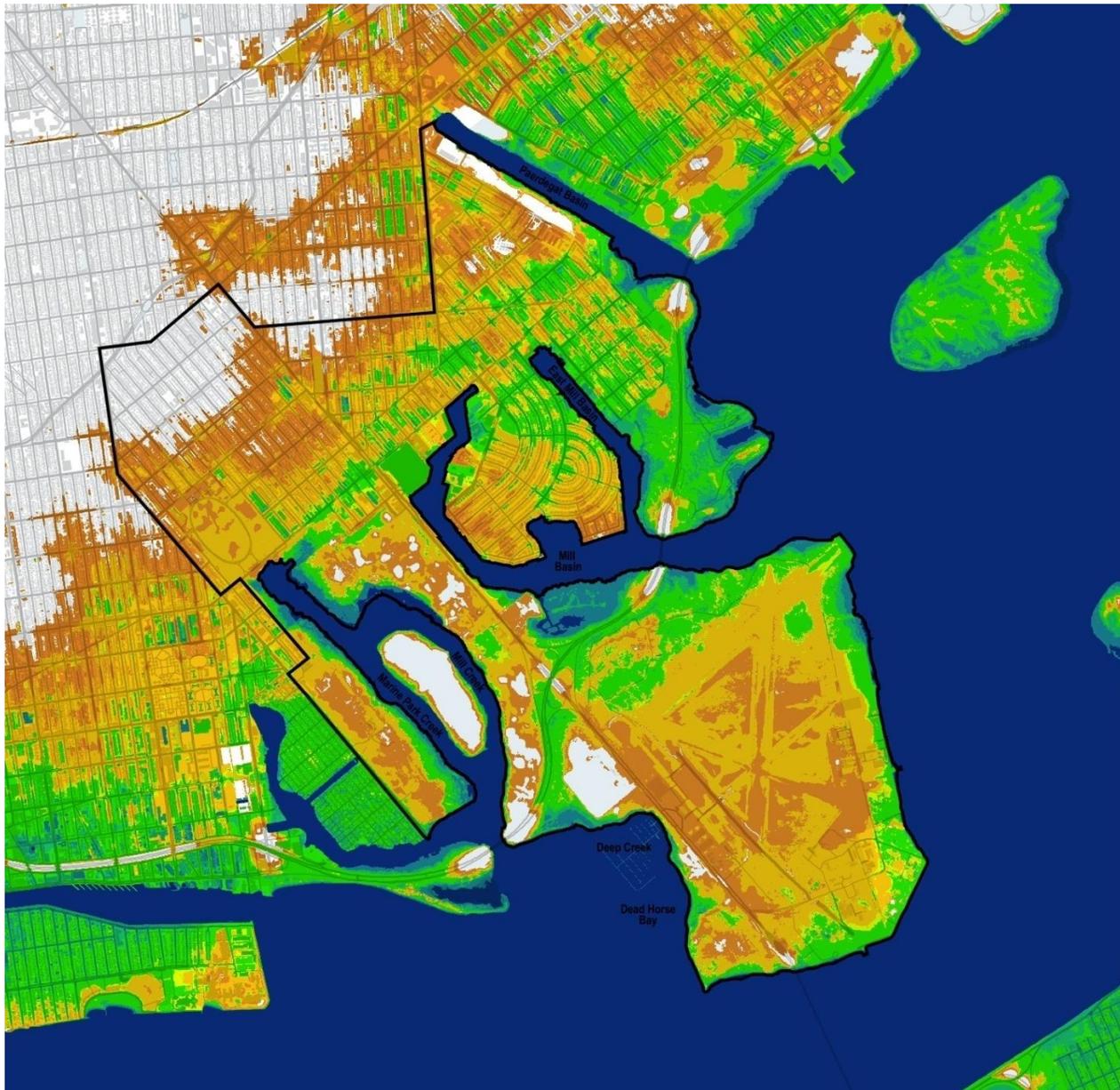
FEMA Preliminary FIRM Flood Zone

- VE zone (waves > 3')
- 100 year floodplain (1% annual chance of flooding)
- 500 year floodplain (0.2% annual chance of flooding)
- - - Limit of moderate wave action (1'-3' waves)

Source:
FEMA Preliminary FIRM; Basemap: New York City Department of City Planning, MAPInfo v13.1; Buildings; Street Centerlines

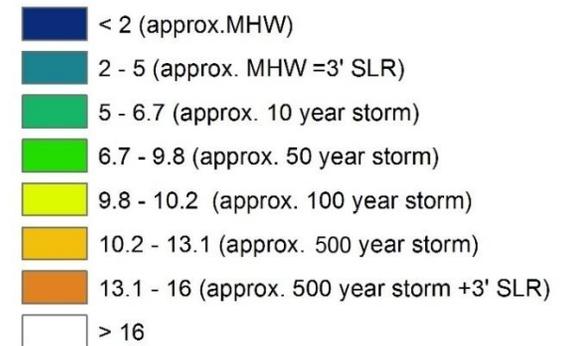


Gradual and Event Based Hazards: Sea level rise and more frequent storms



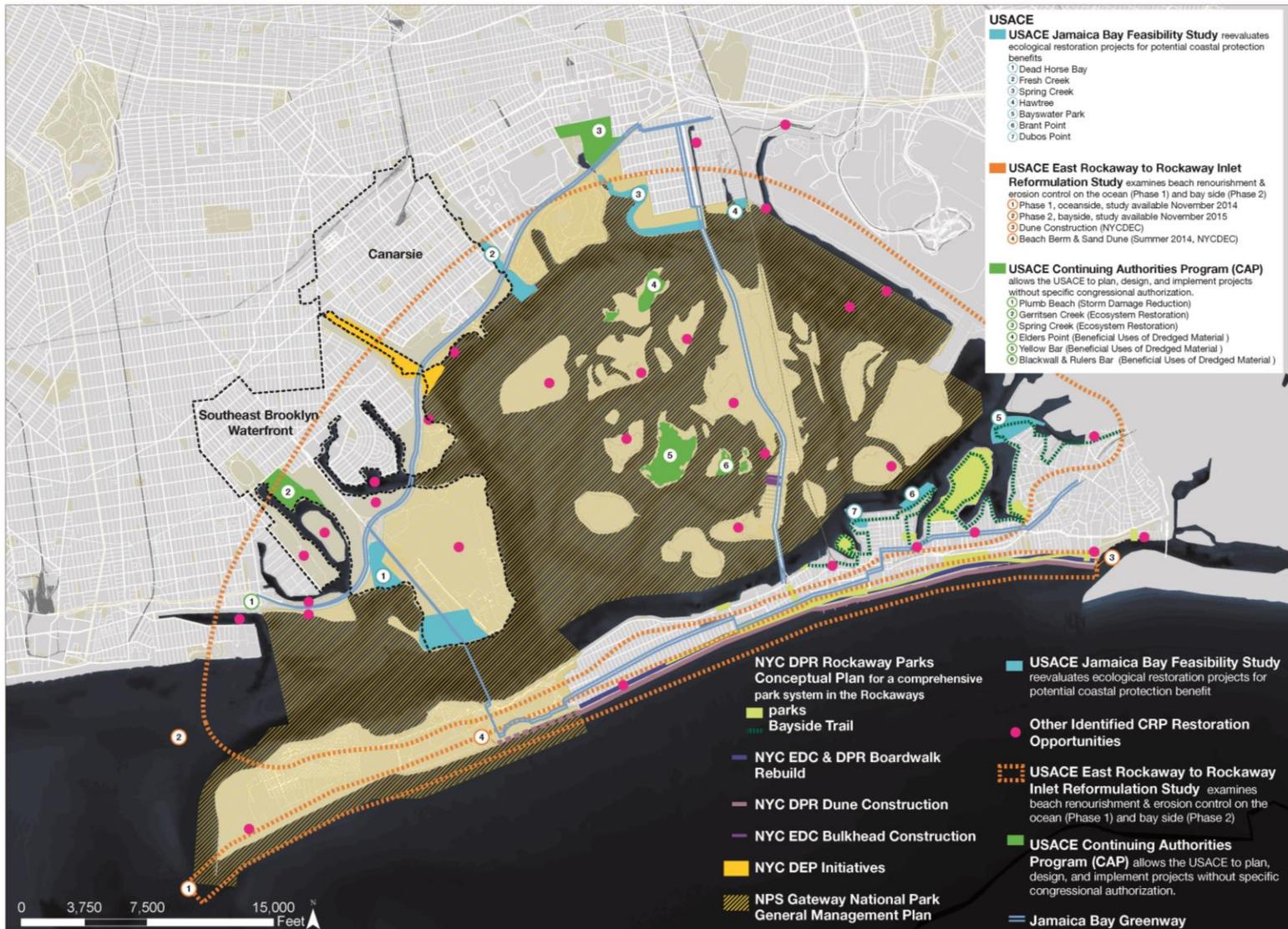
Elevation

NAVD88



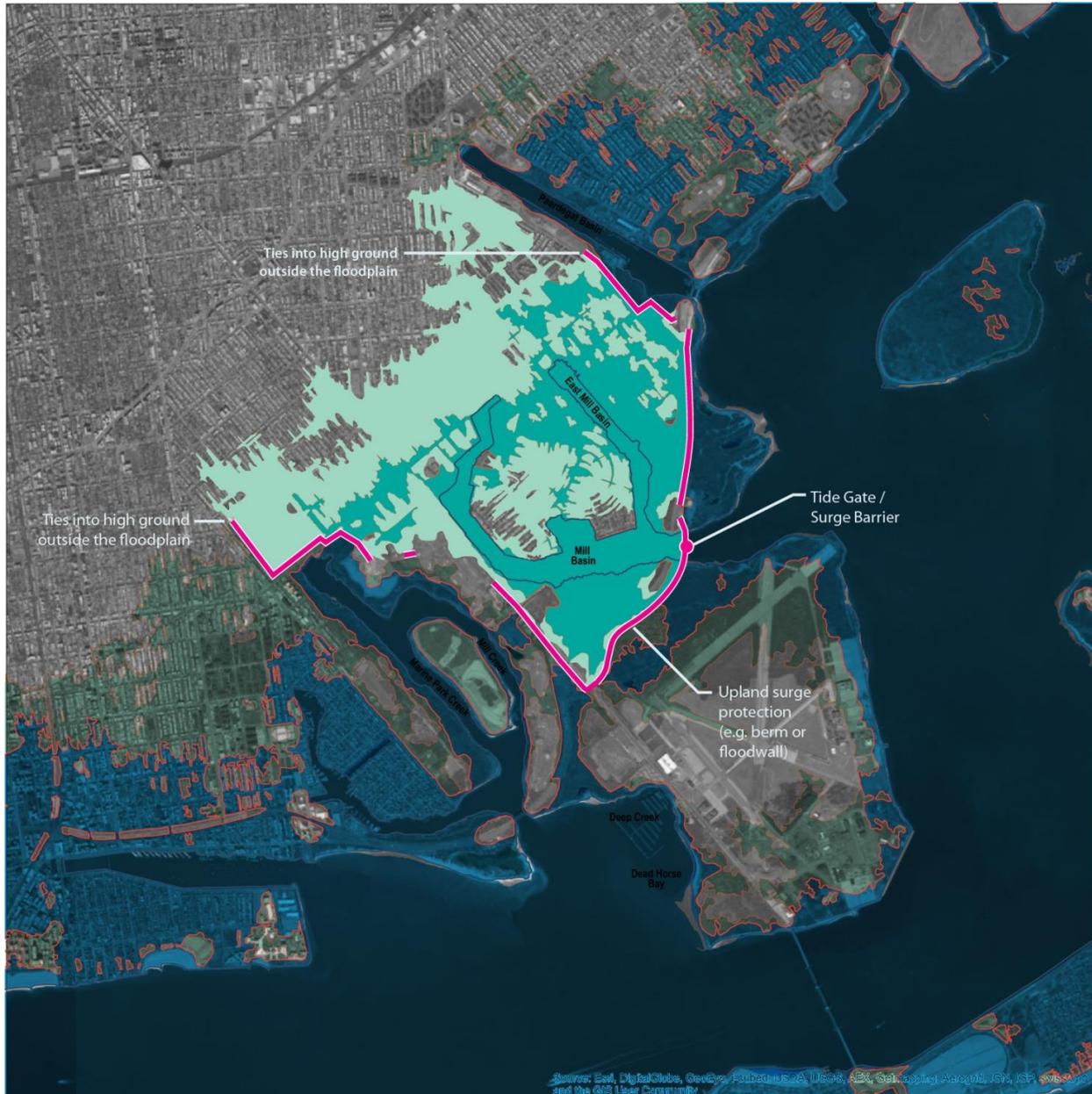
Protecting against surge

Regional: Leverage existing plans



Protecting against surge

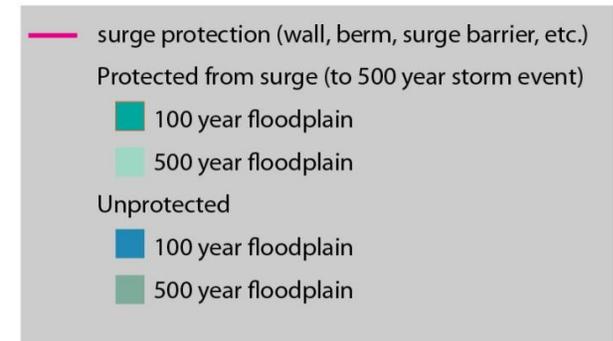
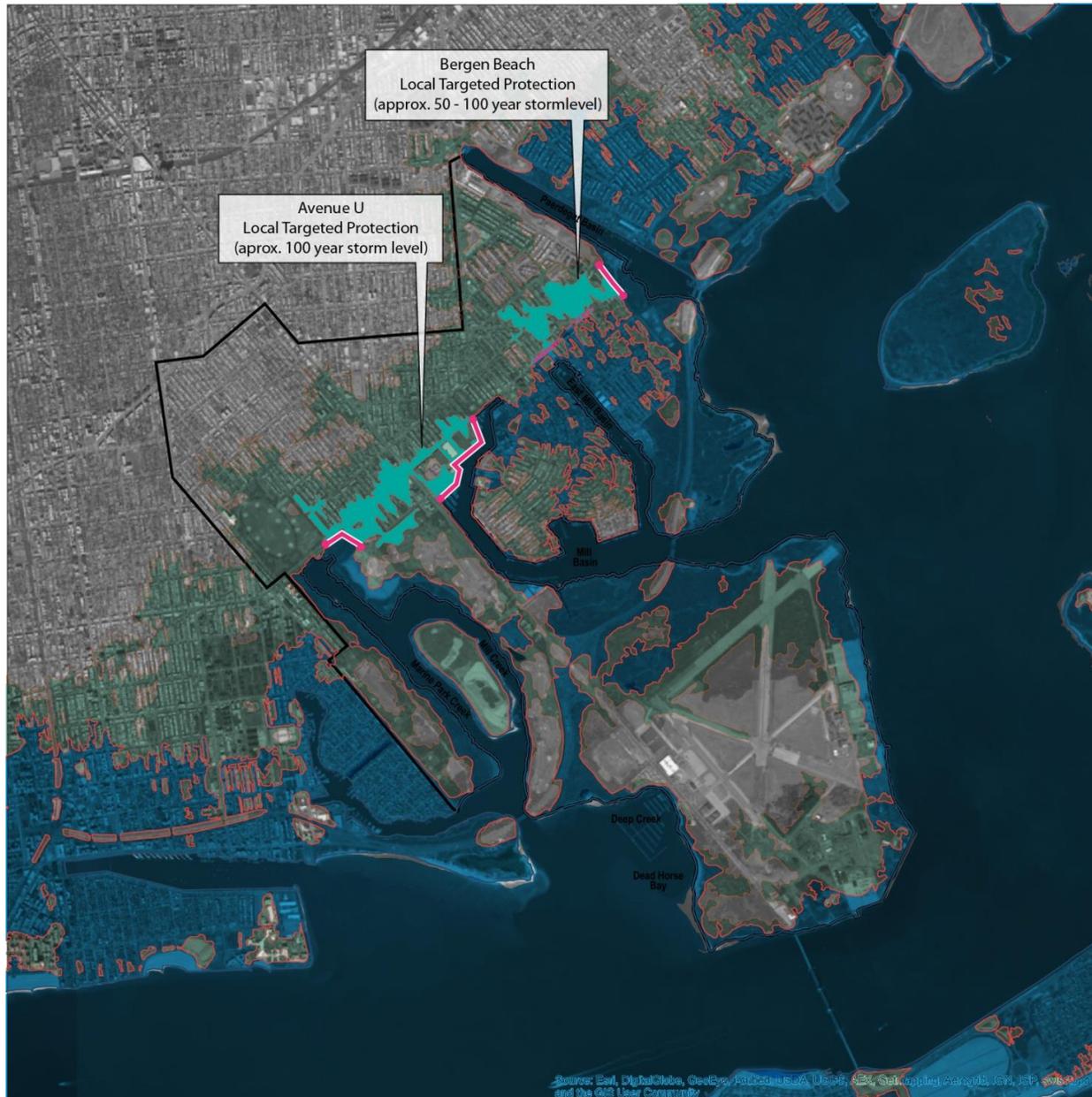
Neighborhood approach



- surge protection (wall, berm, surge barrier, etc.)
- Protected from surge (to 500 year storm event)
 - 100 year floodplain
 - 500 year floodplain
- Unprotected
 - 100 year floodplain
 - 500 year floodplain

Protecting against surge

Local approach: targeted locations



Gradual hazard: Sea level rise

Local approach: Targeted locations



--- Limit of Moderate Wave Action (100 year storm)

Elevation

NAVD88

- < 2 (approx. MHW)
- 2 - 5 (approx. MHW =3' SLR)
- 5 - 6.7 (approx. 10 year storm)
- 6.7 - 9.8 (approx. 50 year storm)
- 9.8 - 10.2 (approx. 100 year storm)
- 10.2 - 13.1 (approx. 500 year storm)
- 13.1 - 16 (approx. 500 year storm +3' SLR)
- > 16

Techniques to protect against storm surge (keeping the water out)



Permanent Floodwalls



Seawalls



Levees



Deployable Floodwalls



Tidegates



Berms

Strategies to combat sea level rise and erosion: Raise coastal edge elevations



Raise / repair bulkheads



Revetments



Wetlands



Living Shorelines

What approaches should we consider for SEBW?

Event-based protection

- Regional approach
- Neighborhood approach
- Local approach (Avenue U and Bergen Beach)

Gradual hazard protection

- Targeted sea level rise protection
- Wetland restoration / erosion protection

Questions to consider

- What approaches have the most value (cost/benefit)?
- What approaches address your needs?
- What hazards are most critical to protect against?

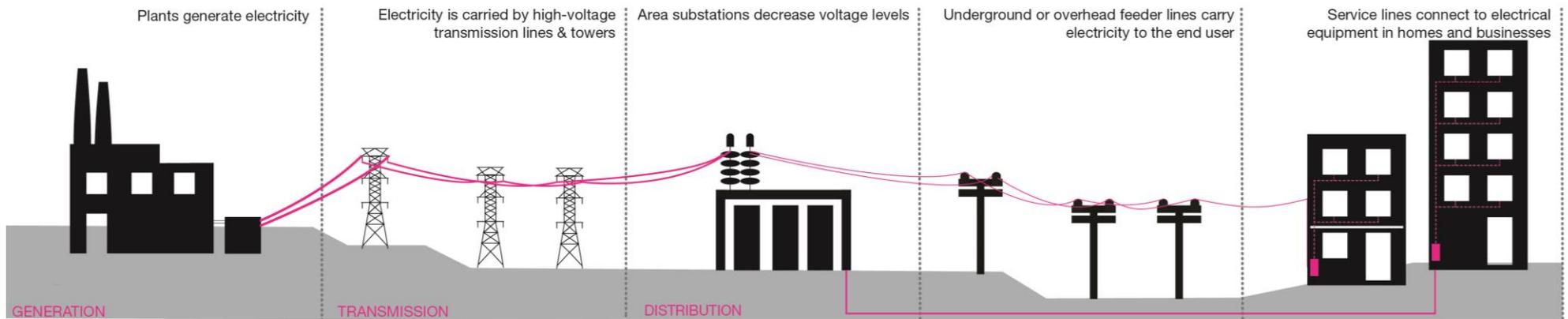
POWER



Strategy: Make the power supply more resilient and redundant

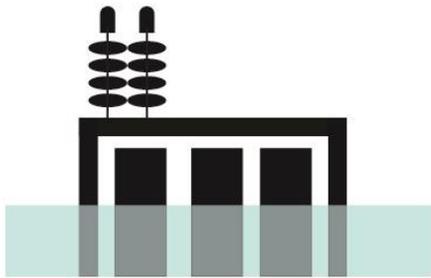
How the system works

Generation, transmission, and distribution

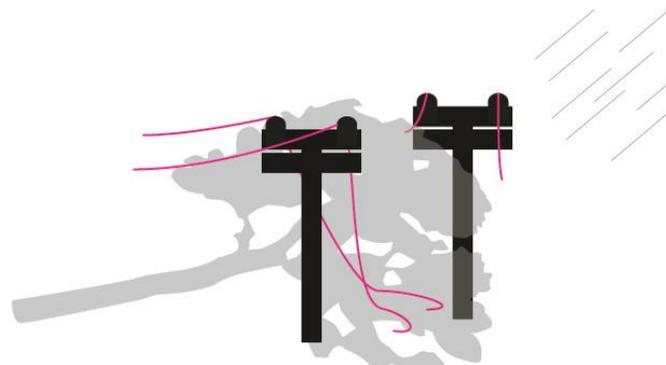


Threats to the power system from coastal storms

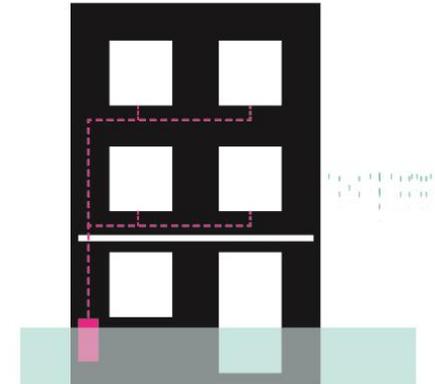
Most electrical outages during Sandy were caused by damage to the electricity distribution system



- Substations not affected during Sandy



- Topped trees and intense winds damaged overhead power lines.

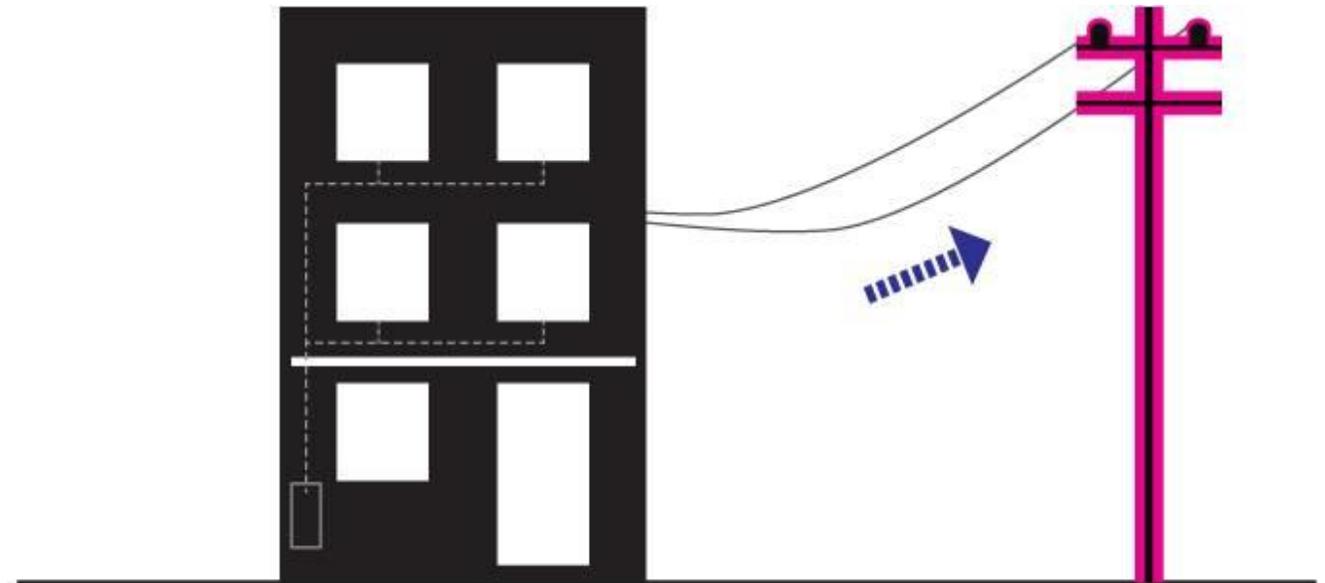


- Individual household/apartment building equipment was flooded from seawater and took longer to get back on line after power was restored.

Potential techniques: Protect distribution system

Protect service lines

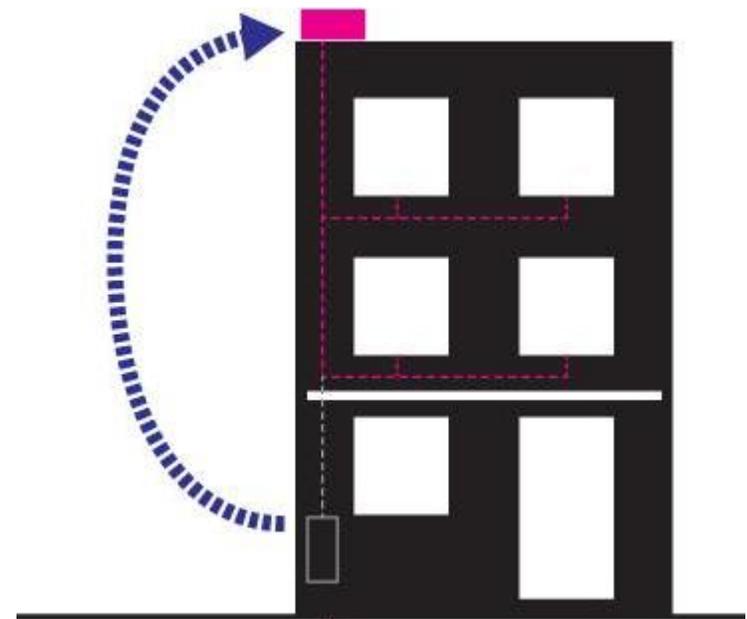
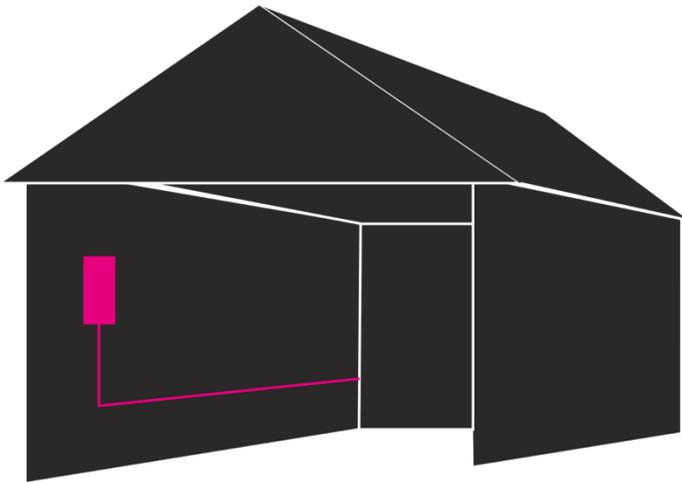
- Strengthen/harden power lines
- Proper tree maintenance
- Relocate some/all of system underground
- Install smart-grid technologies to rapidly identify location of problem and minimize extent of impact



Potential techniques: Protect delivery systems at the receiving end

Protect home equipment

- Get it out of harm's way
 - Raise switches, sockets, breakers, and wiring
- Make it floodable
 - Replace with submersible equipment



Opportunities: Rapid Repairs (FEMA): made licensed electricians available to repair customer-side electrical damage

Potential techniques: Alternative power: Solar

Panels on individual buildings or covering parking areas

Pros

- Resilient: can function when grid goes out
- Retains benefit of using grid power during normal
- Can reduce electricity costs
- Low maintenance
- Both benefits and negatives to the grid



Cons

- High up-front costs
- Intermittent
- Expensive energy storage (batteries)
- Space requirements and FDNY restrictions
- Not market competitive

Components

- *Panel for generation*
- *Battery for storage and smoothing fluctuation*
- *Connection to grid*
- *Smart inverters*

Potential techniques: Alternative power: Wind

Pros

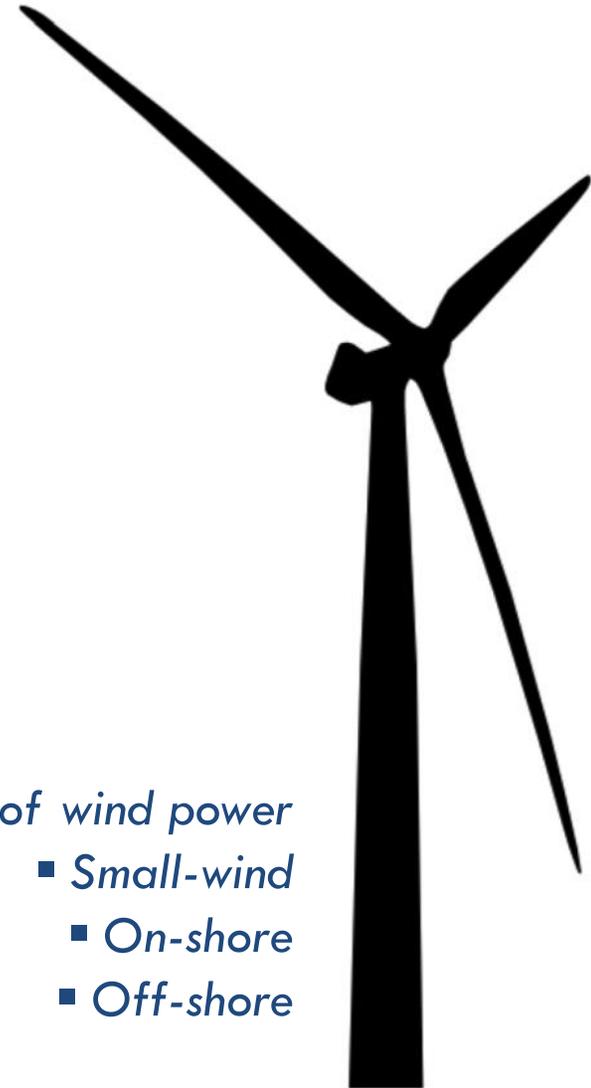
- Strong winds, high capacity factors
- Functions when grid goes out
- Feeds into grid during normal operations

Cons

- Should be combined with an energy storage system
- Upfront costs
- Avian & other environmental impacts
- Large space requirements
- Regulatory restrictions
- Needs proper conditions

Three types of wind power

- *Small-wind*
 - *On-shore*
 - *Off-shore*



Potential Techniques: Back-up power: Generators

Can be powered by diesel or natural gas

Pros

- Resilient: can function when grid goes out
- Reliable & tested

Cons

- Fuel requirements (on-site storage vs. risk of losing natural gas connection)
- Spatial requirements
- Location (roof, raised platform)
- Upfront costs and costs of potential retrofits
- Ongoing maintenance
- Environmental impact



Considerations for generator sizing

- *Building size*
- *Building use and activity*
- *Building age*
- *Percentage of facility in use during emergency*
- *Number of people to accommodate during an emergency*

Questions to Consider

Are there specific sites where you think alternative and/or backup power would be beneficial?

Are there places where you would like to see alternative power used?

What role do you see alternative power playing in the community (i.e., for resiliency or everyday use)?



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Next steps

NYC DEP meeting (scheduling in progress)

- Drainage

Next PC meeting: Oct. 1st, 7pm

- Emergency Preparedness, Economic Development, and Housing

Rising to the Top Competition: Intent to Apply due Oct. 15th