

Jersey City, New Jersey, USA

Post-Hurricane Sandy Planning

Part 1:

Resiliency Master Plan

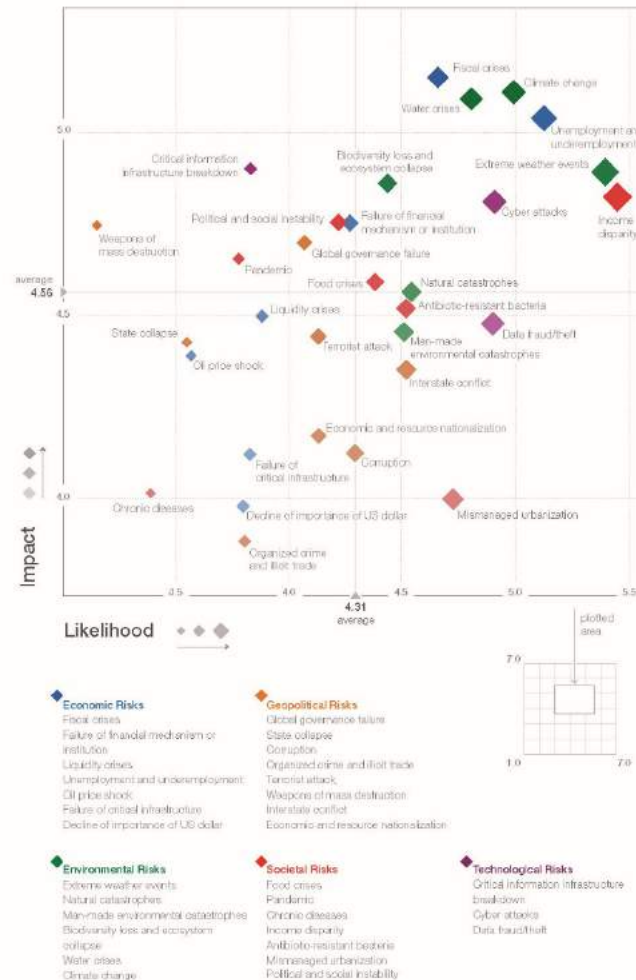
Part 2:

Encouraging Participation by the Private Real Estate
Development Sector

Alexander D'Hooghe, Founding partner ORG, Associate Professor MIT
Risa Perlmutter Goldstein, Partner, Goldstein Partnership Architects & Planners, USA

Global Risks

| | |
|---------------|--|
| Economic | Fiscal crises in key economies |
| | Failure of a major financial mechanism or institution |
| | Liquidity crises |
| | Structurally high unemployment/underemployment |
| | Oil-price shock to the global economy |
| | Failure/shortfall of critical infrastructure |
| Environmental | Decline of importance of the US dollar as a major currency |
| | Greater incidence of extreme weather events (e.g. floods, storms, fires) |
| | Greater incidence of natural catastrophes (e.g. earthquakes, tsunamis, volcanic eruptions, geomagnetic storms) |
| | Greater incidence of man-made environmental catastrophes (e.g. oil spills, nuclear accidents) |
| | Major biodiversity loss and ecosystem collapse (land and ocean) |
| | Water crises |
| Geopolitical | Failure of climate change mitigation and adaptation |
| | Global governance failure |
| | Political collapse of a nation of geopolitical importance |
| | Increasing corruption |
| | Major escalation in organized crime and illicit trade |
| | Large-scale terrorist attacks |
| Societal | Deployment of weapons of mass destruction |
| | Violent inter-state conflict with regional consequences |
| | Escalation of economic and resource nationalization |
| | Food crises |
| | Pandemic outbreak |
| | Unmanageable burden of chronic disease |
| Technological | Severe income disparity |
| | Antibiotic-resistant bacteria |
| | Mismanaged urbanization (e.g. planning failures, inadequate infrastructure and supply chains) |
| | Profound political and social instability |
| | Breakdown of critical information infrastructure and networks |
| | Escalation in large-scale cyber attacks |
| Technological | Massive incident of data fraud/theft |



HURRICANE SANDY

Suomi NPP - VIIRS Day Night Band - Oct. 29, 2012 (Night)











**Impacted 24 states across the Mid-Atlantic
and Northeast**

**\$65.7 billion in damages and economic loss -
second costliest storm in U.S. history**

**Emergency & Major Disaster Declarations
made in 13 states**

650,000 homes damaged or destroyed

Layered Risk Assessment

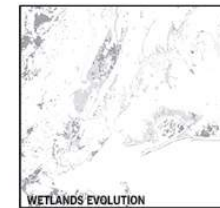
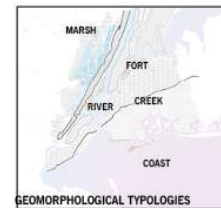
| | MARSH | RIVER | ISLAND | CREEK | COAST |
|---|----------------------|-------|--------|-------|-------|
|  | GEOGRAPHY | | | | |
|  | DENSITY | | | | |
|  | INUNDATION | | | | |
|  | WAVES | | | | |
|  | SOCIAL VULNERABILITY | | | | |
|  | ECONOMIC LOSS | | | | |
|  | POLLUTION | | | | |
|  | HEAT EFFECT | | | | |
|  | VITAL NETWORKS | | | | |
|  | TRANSPORT NETWORKS | | | | |

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85%
OF THE REGIONAL
HISTORIC WETLANDS
HAS BEEN DEVELOPED
OR LOST

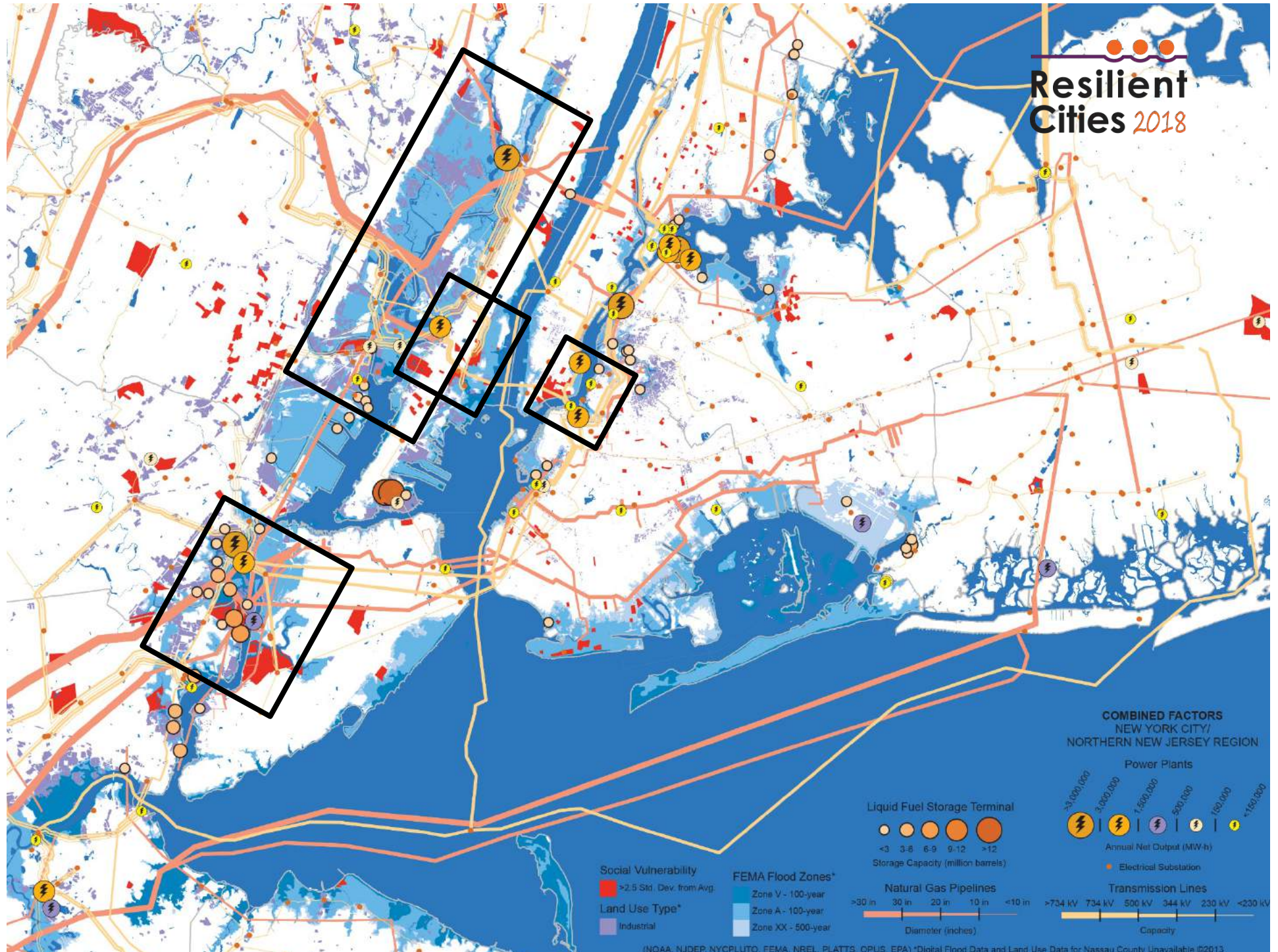
2.5
MILLION INHABITANTS
IN THE NEW YORK
& NEW JERSEY
METROPOLITAN AREA
LIVE IN THE FLOOD
ZONE

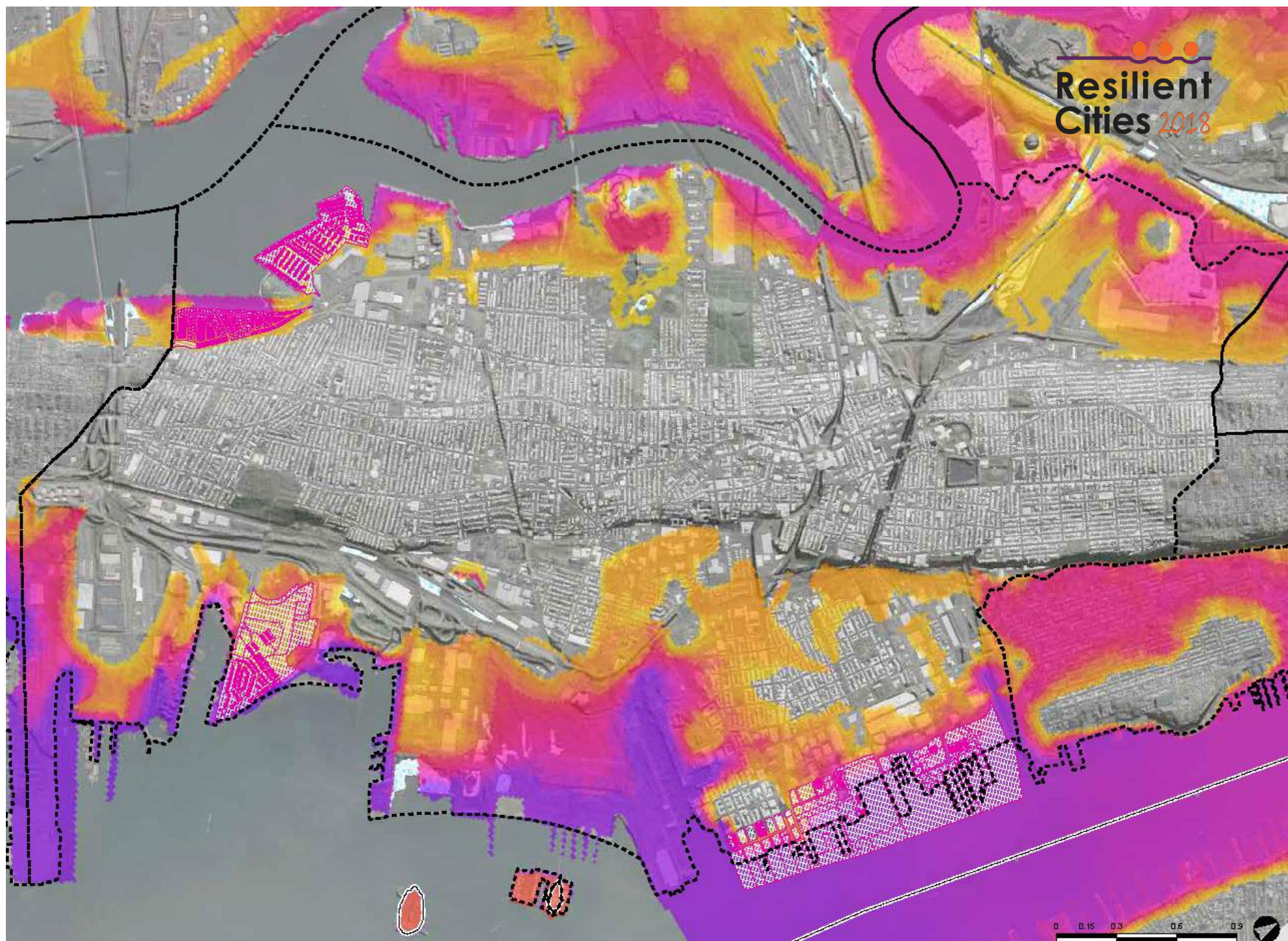
66%
OF THE MOST
VULNERABLE
COMMUNITIES LIVE
WITHIN A 1/2 MILE OF
THE FLOOD ZONE

80%
OF THE REGIONAL FUEL
STORAGE IS IN THE
FLOOD ZONE

75%
OF THE NET ANNUAL
POWER GENERATION IS
IN THE 100 YEAR FLOOD
ZONE

Resilient Cities 2018





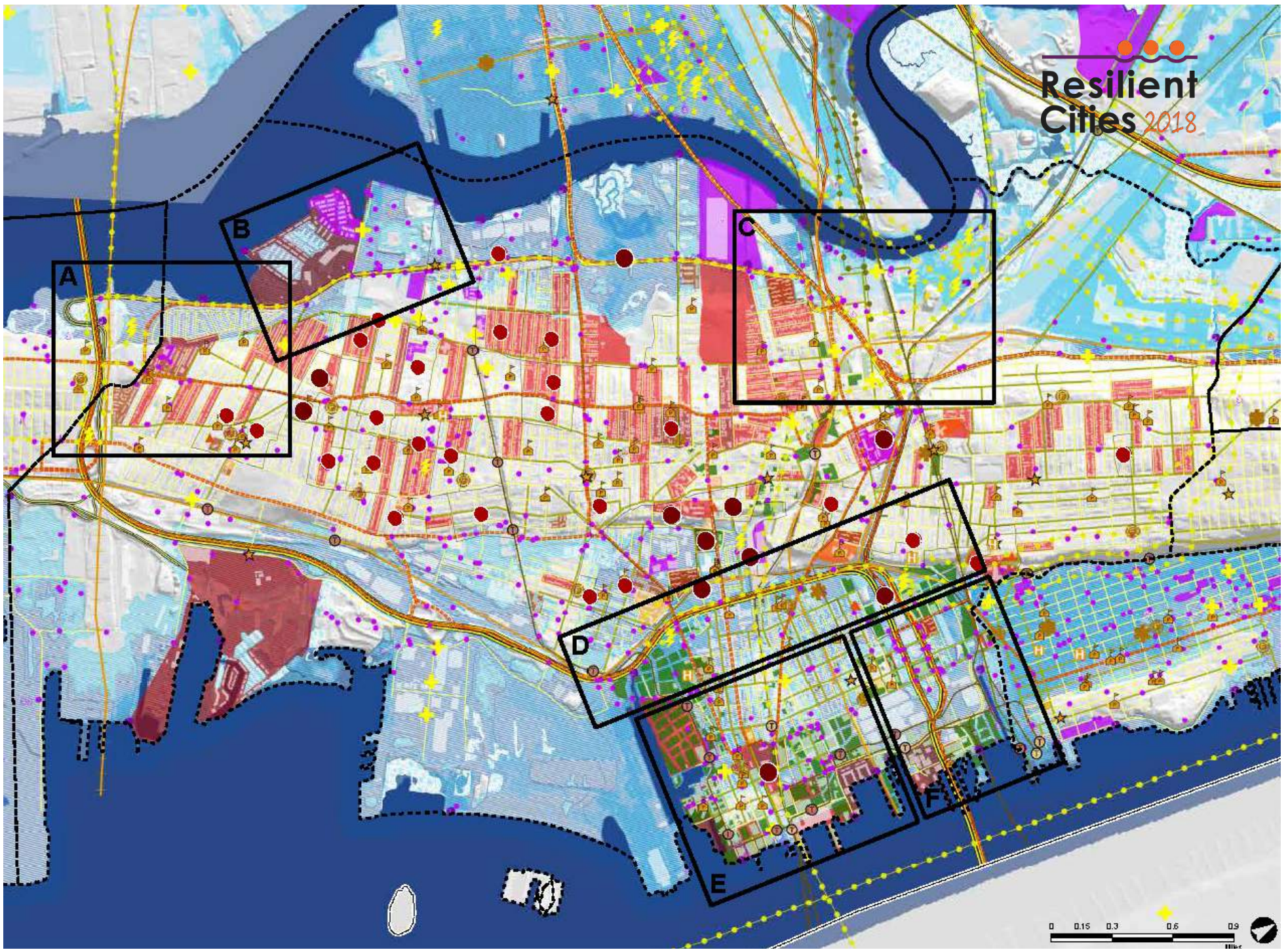
Resilient Cities 2018

0 0.15 0.3 0.45 0.6 Miles



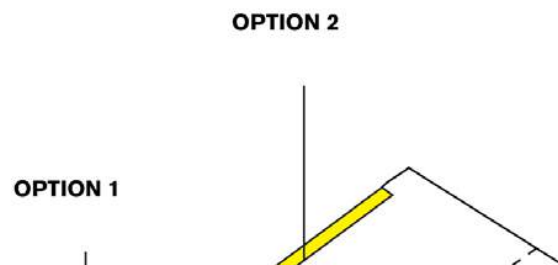
Resilient Cities 2018

0 0.15 0.3 0.45 0.6 Miles



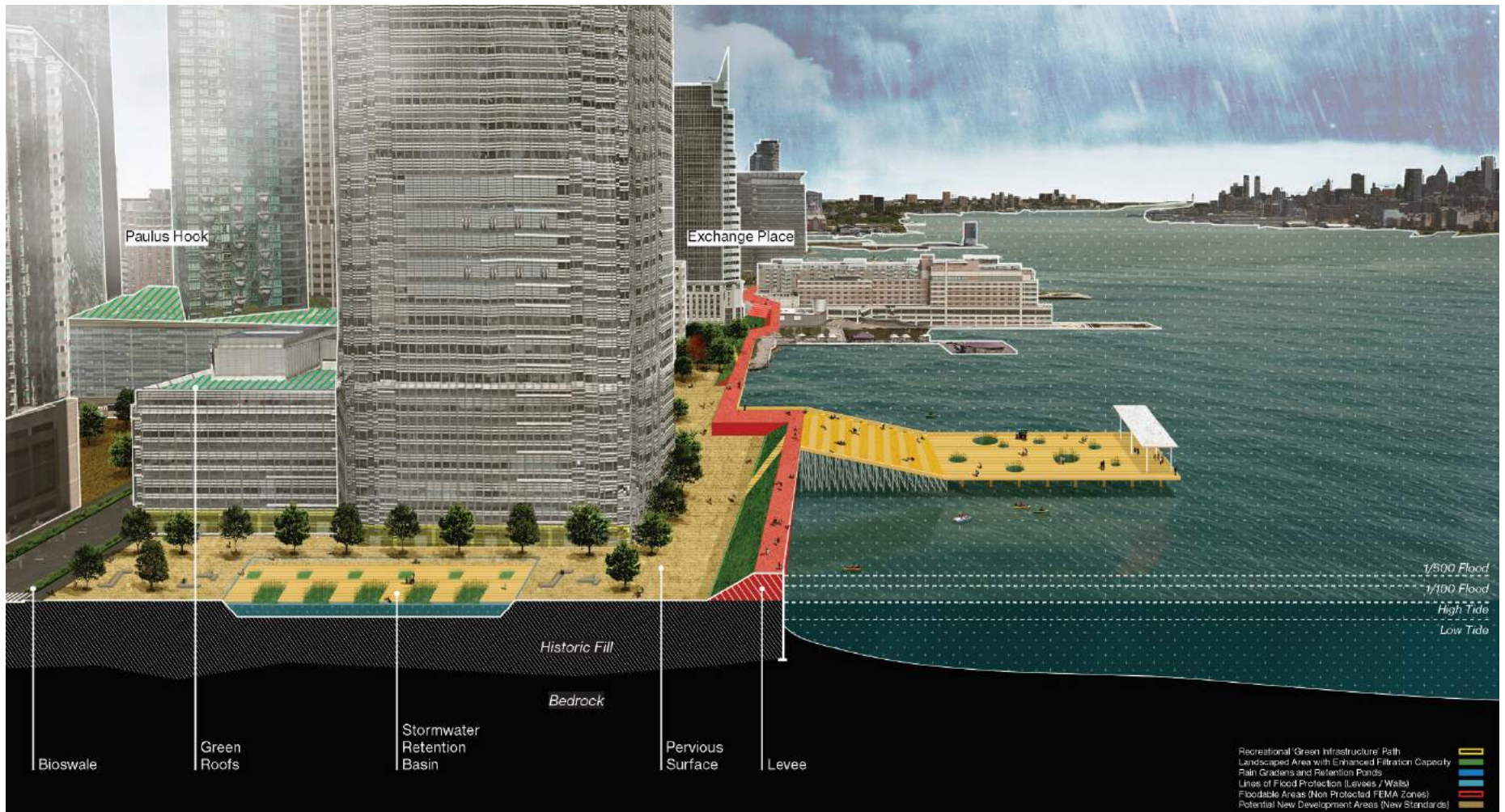
BERM ALIGNMENT

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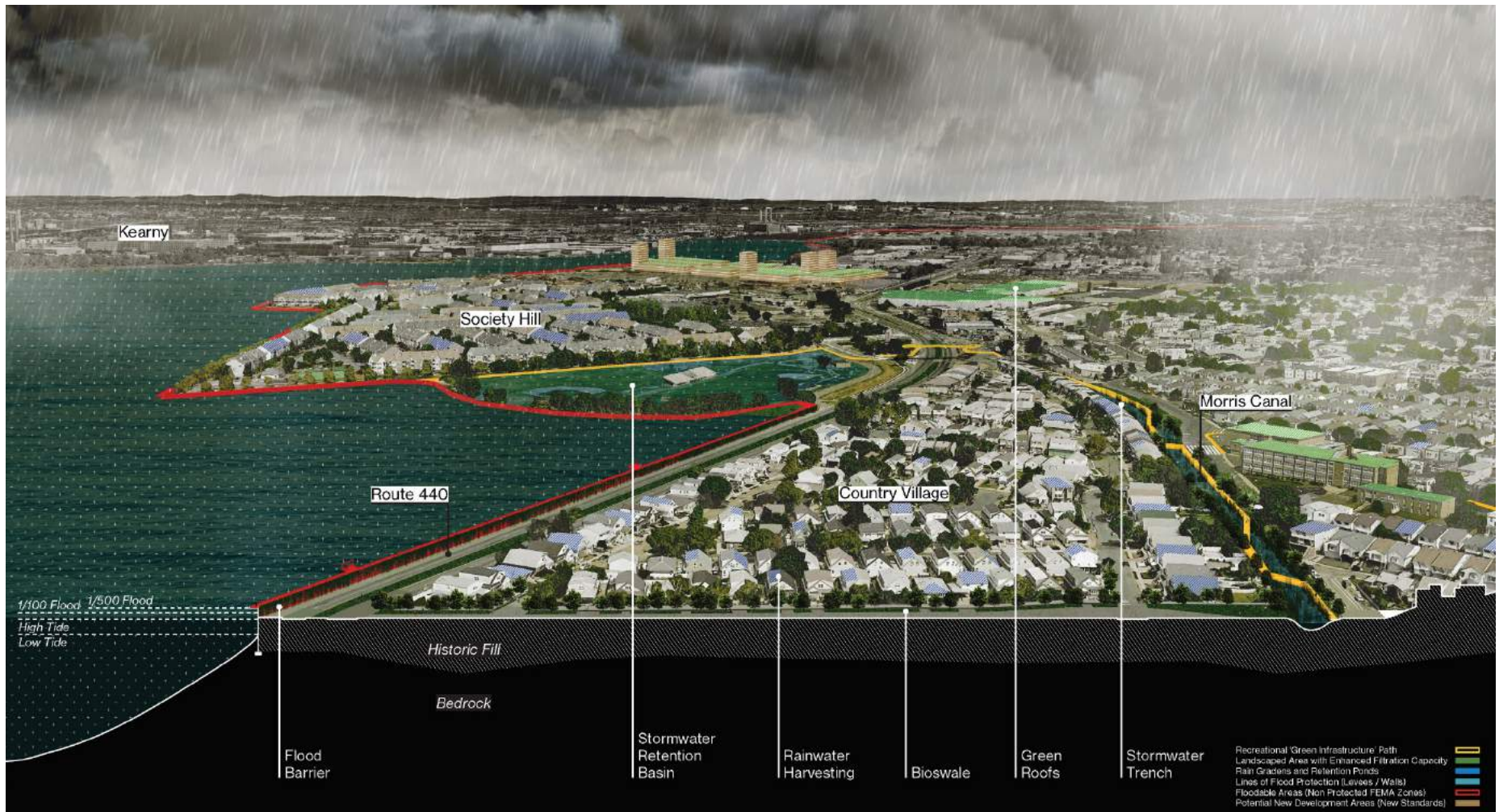














ENCOURAGING PARTICIPATION by the PRIVATE REAL ESTATE DEVELOPMENT Sector

Image: From Hamilton Park Neighborhood Association: hpnanj.org

REDEVELOPMENT

“A process to rebuild or restore an area in a measurable state of decline, disinvestment, or abandonment.”

Hackensack River

Redevelopment can be undertaken by the Public sector, Private sector, or in Public/Private Partnership.

BAYFRONT 1 REDEVELOPMENT AREA

Route 440

NJCU

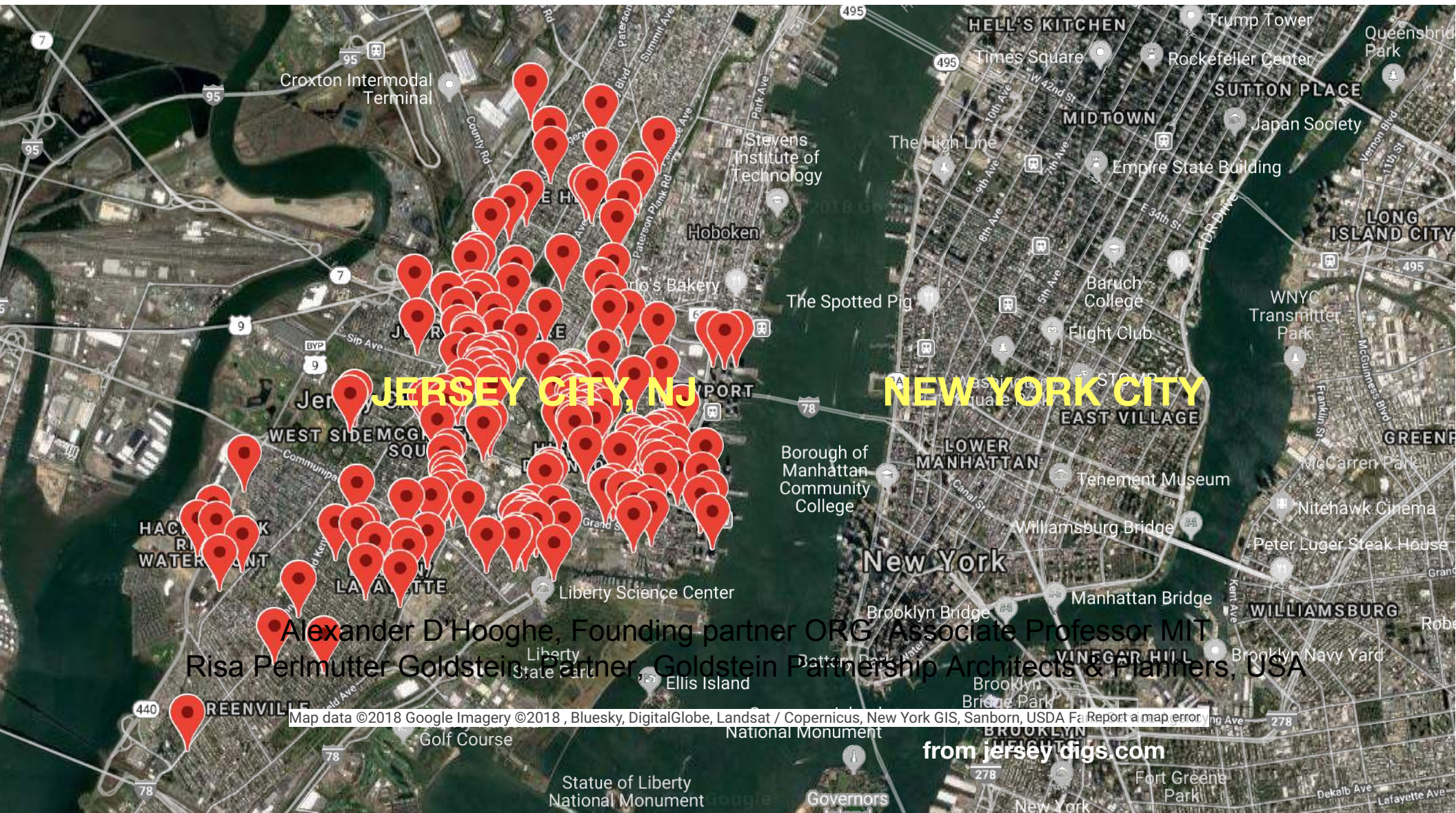
JERSEY CITY REDEVELOPMENT ACTIVITY



As of March 2017:

37,000+ units planned;

9,000+ units under construction.



This talk will focus on

The Private Real Estate Development sector,
which plays a critically important role in Jersey City's
ongoing desirability and economic vitality.



- **All Public Buildings in Jersey City must be LEED Silver Certified.**
- **This requirement does not extend to the Private Sector.**

- **Requiring Real Estate Developers to fully adhere to sustainable practices is not politically possible at this time.**

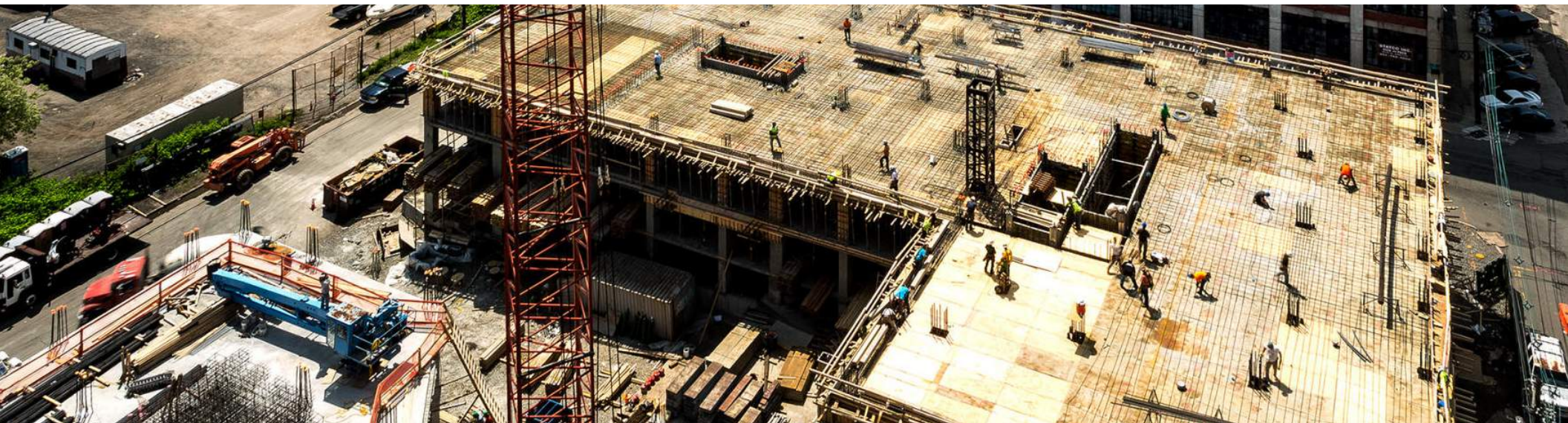
Completion of the
Adaptation Master Plan
preceded our work. It states:

“The implementation strategy shall identify creative funding solutions, such as the ability to require the implementation of resiliency-building strategies as part of real estate development negotiations between developers and the City.”



By understanding what motivates Developers, we recommended changes that encourage sustainable land-planning and building practices. Underlying our thinking....

- **Developer's are profit-driven.**
- **Time is money; approval processes can be time-consuming and with unpredictable results.**



- Six examples follow of changes Jersey City adopted this past year to their **CODE OF ORDINANCES**
- Or incorporated into a new **REDEVELOPMENT PLAN SUPPLEMENT.**

ROOF DECKS

Communal **roof decks** are particularly **desirable** amenities and help bring higher rents and sales prices.

Before: Roof Decks were permitted to cover **30%** of a roof.

Now: if a green roof is used, **increase** Roof Deck coverage **to 50%**



SUSTAINABLE PARKING STRATEGY

Zoning Requirements include required parking ratios (ie 1 car/unit for residential, or 1 car/500sq.ft of commercial space).

Parking deck parking spaces can cost (\$50,000US) to construct. This substantial expense causes **Developers** to **seek reductions to the number of spaces required.**



A 20% reduction in required parking spaces is now permitted **if:**

- Spaces are reserved **exclusively for electric vehicles and with charging stations.**
- Spaces are set aside for and actively occupied by, **car sharing services.**



STORMWATER

Surface parking lots with more than 10 spaces shall be graded to allow stormwater runoff to drain into bioswales, instead of the City's stormwater infrastructure.



ENCOURAGING LEED CONSTRUCTION

- **Expedited, Priority review of Building Permit Applications** for projects that will meet LEED Certification standards.
- **Up to 25% refund of Building Permit fees** within 1 year of receiving LEED Certification.



SOLAR PANELS:

- **Are permitted** within every zone **without the need for variance.**
- **Do not require Planning Board Review** when located in yards.
- **Are exempt from Impervious Coverage Calculations** except for their base foundations.



HISTORIC PRESERVATION

Jersey City's urban fabric includes many public and private buildings on the Historic Register, and 5 Historic Districts, most of them flood-prone.

All are protected by Codes and Standards established by the US Secretary of the Interior.



To help **incentivize ongoing investment** in these **desirable Historic buildings and Districts**, Jersey City now:

- **Allows modifications** to Historic Buildings **for wet or dry flood-proofing** if architect-designed and approved by the Historic Commission.
- **Grants permission to construct a rooftop addition to replace ground level space lost to flood risk**, if such addition is not visible from the street.



LESSONS LEARNED

- **Adoption of suggestions into ordinances is slow and piecemeal.**
- **Get stakeholders together from the Start.** The State grant that funded the 6 parts of this project resulted in a comprehensive set of planning documents addressing project at every scale. Funds are not available to implement city-scale resiliency plans. A grant that called for specific recommendations at a smaller scale would have been helpful in order to ultimately get project funds.
- **Recognize the limits to what can be achieved in the short term.** Work to assure that its recommendations are referenced when future opportunities arise.
- **Structure the project so everyone can see the big picture.** Phases were completed in consecutive order and consultants were involved only in those phases that their expertise demanded at the time. As a result, it was difficult to understand one's work in light of the complete picture and some things fell through the cracks.

FOR JERSEY CITY:

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Questions and Answers

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