



Mayor Dawn Zimmer
City of Hoboken, New Jersey, USA



Hoboken, NJ

- Land Area: 1.28 sq mi
- Population (2010): 50,005
- Pop Density: 39,220/sq mi













SLOSH Model for Hoboken

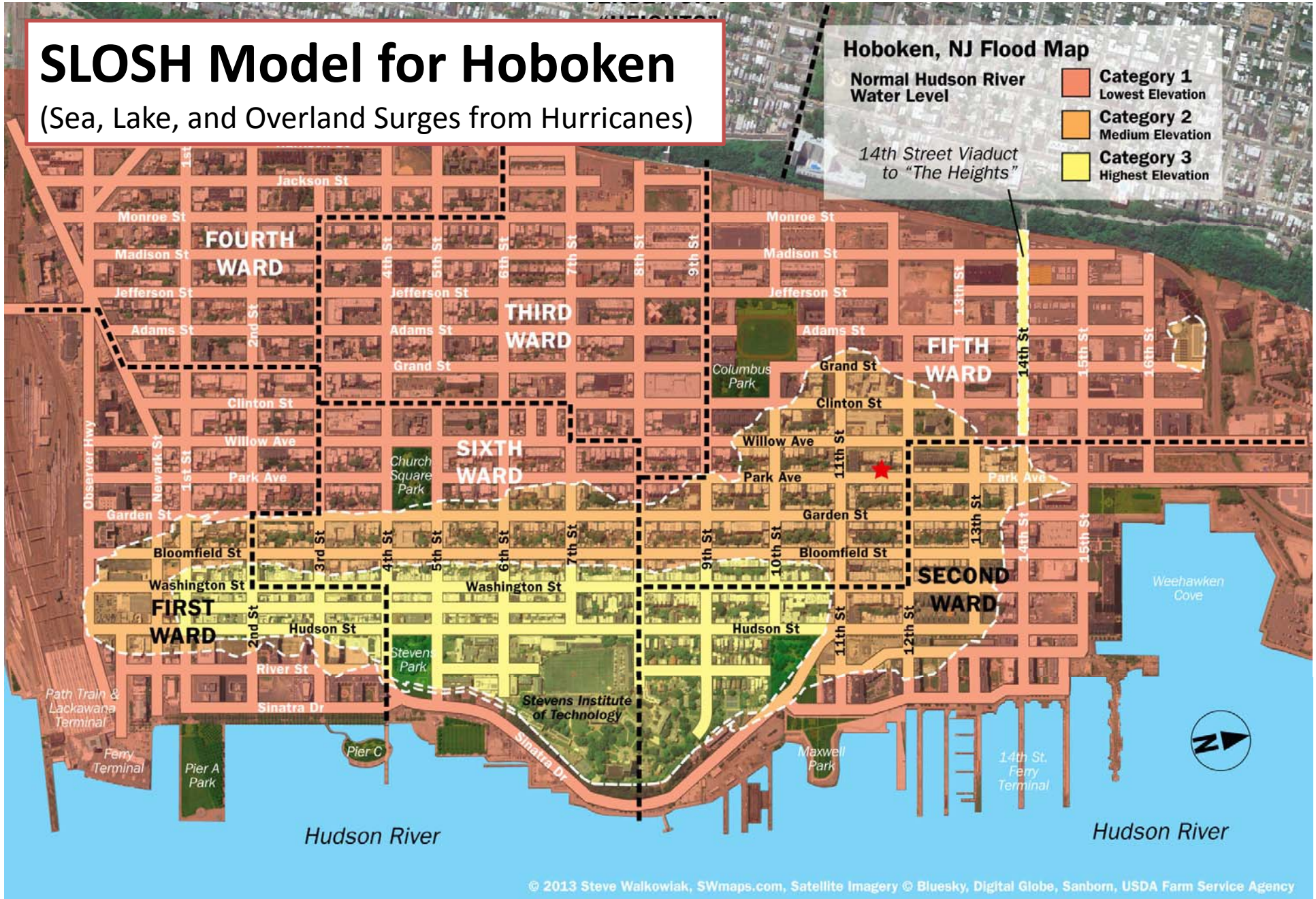
(Sea, Lake, and Overland Surges from Hurricanes)

Hoboken, NJ Flood Map

Normal Hudson River Water Level

14th Street Viaduct to "The Heights"

- Category 1**
Lowest Elevation
- Category 2**
Medium Elevation
- Category 3**
Highest Elevation



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Storm surge entered through low elevation areas at north and south, and "filled the city like a bathtub."

Hoboken, NJ Flood Map National Flood Hazard (Sandy Area)

- FEMA Effective Flood Zones Sandy
- FEMA 0.2% ANNUAL CHANCE FLOOD HAZARD
- No Flooding
Less Than 0.2% Annual Flood Risk



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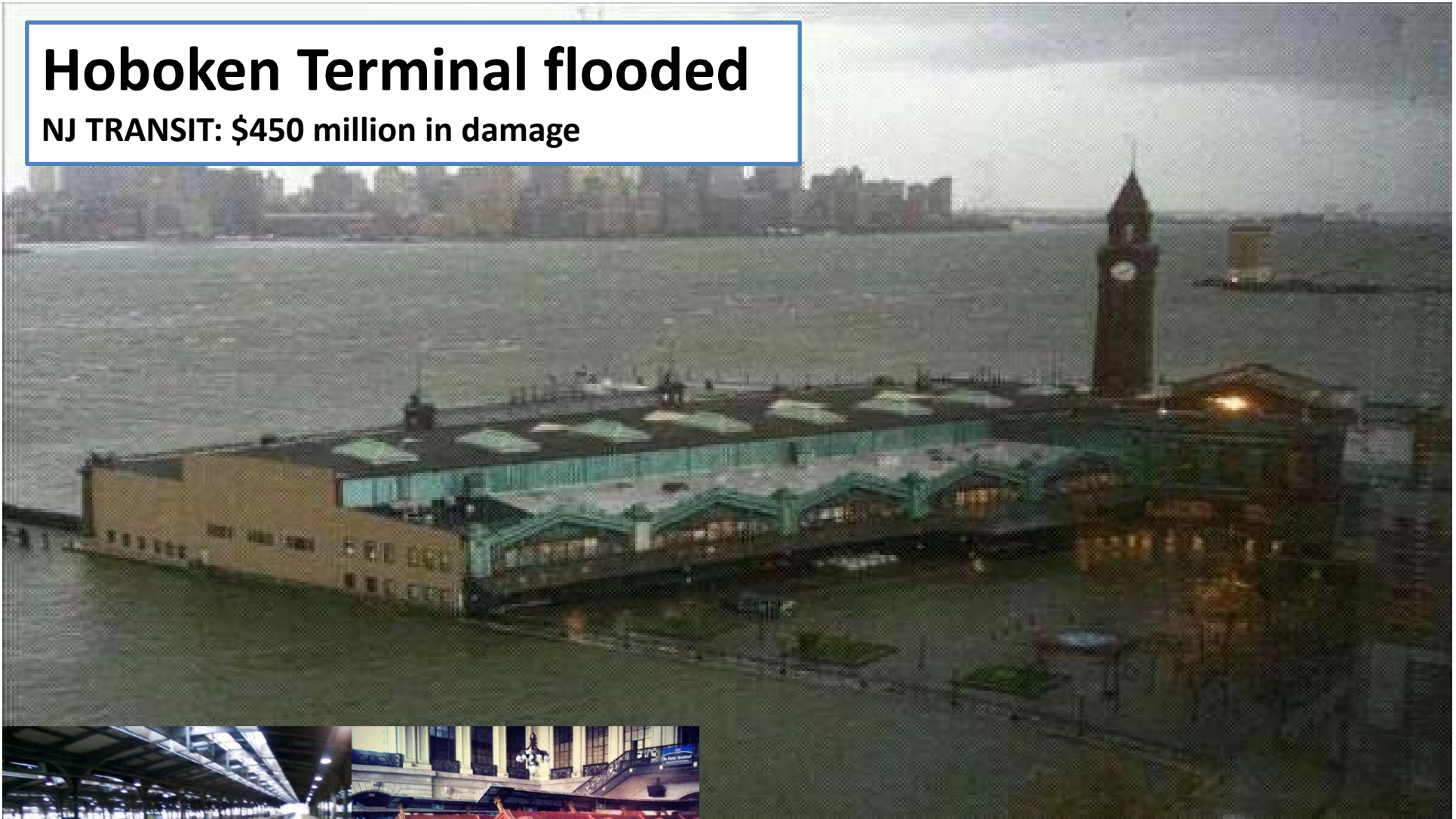
Widespread flooding damage

- \$100 million private property (1700 homes & 100's of businesses)
- \$10 million municipal property



Hoboken Terminal flooded

NJ TRANSIT: \$450 million in damage



PATH system inundated

\$800 million in damage. Out of service for months. Severe impact on local economy.





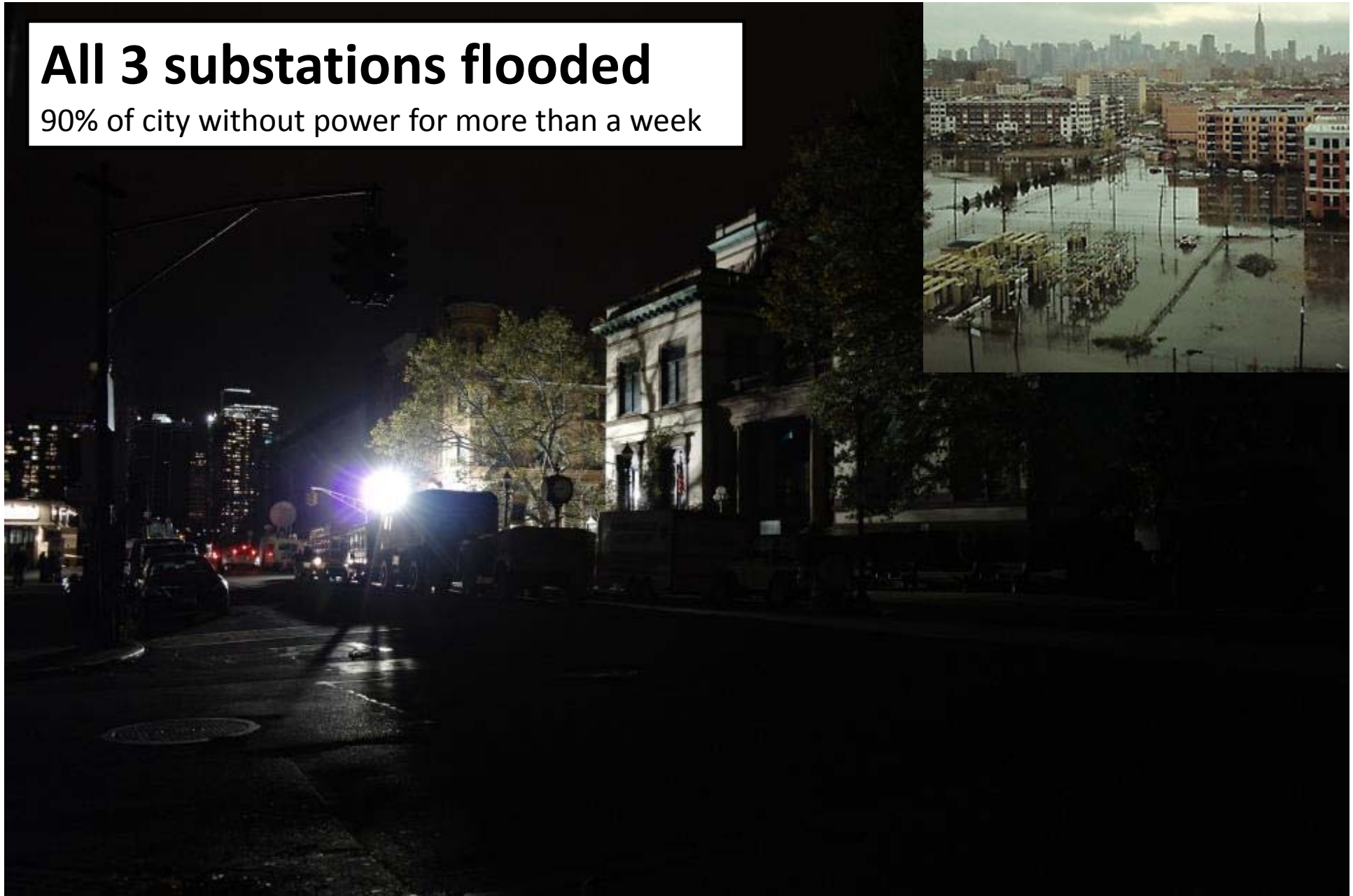


Global Platform
for disaster risk reduction



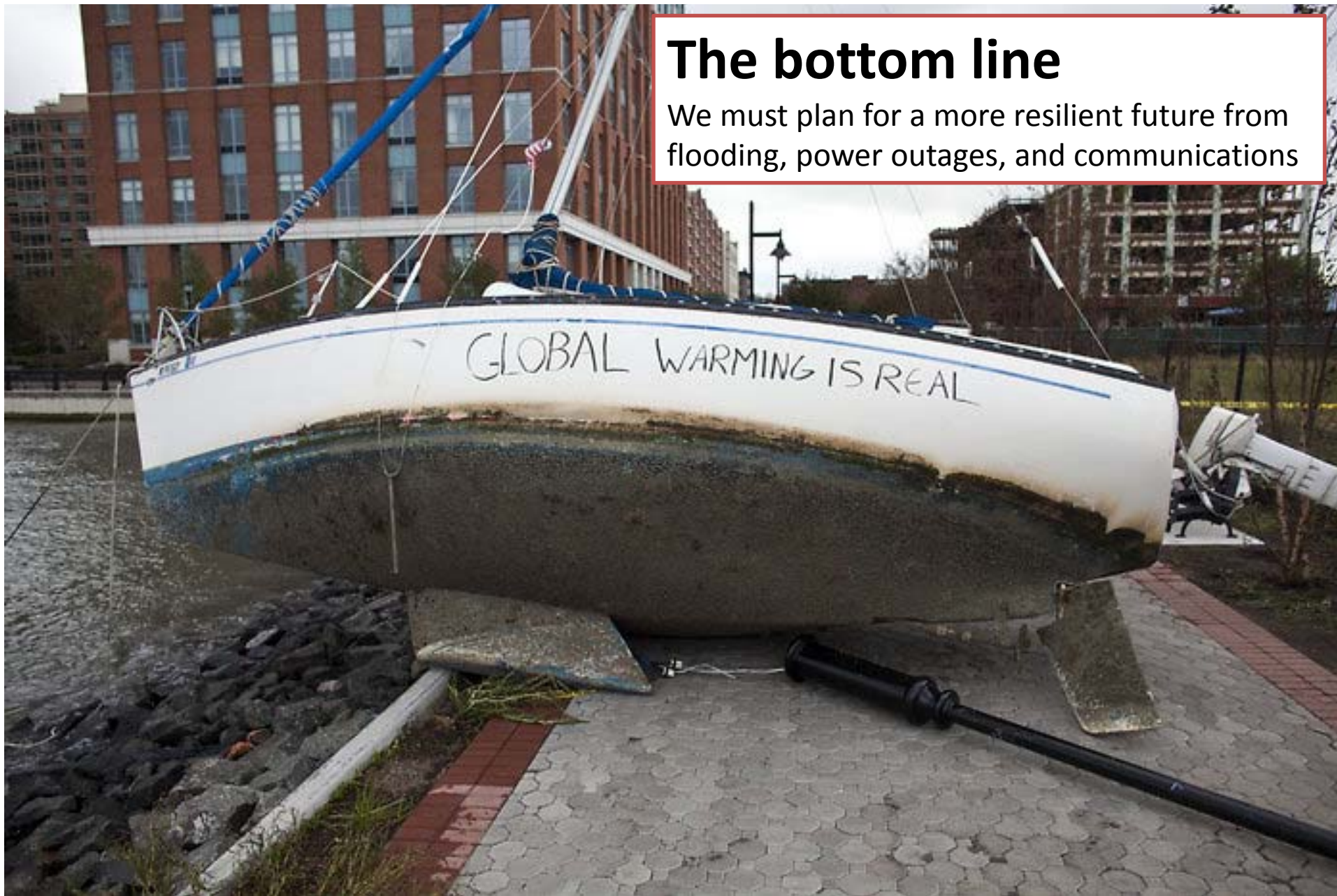
All 3 substations flooded

90% of city without power for more than a week



The bottom line

We must plan for a more resilient future from flooding, power outages, and communications



Promoting green solutions

- Green roofs
- Porous pavers/concrete/asphalt
- Rain garden curb extensions
- Rain barrels



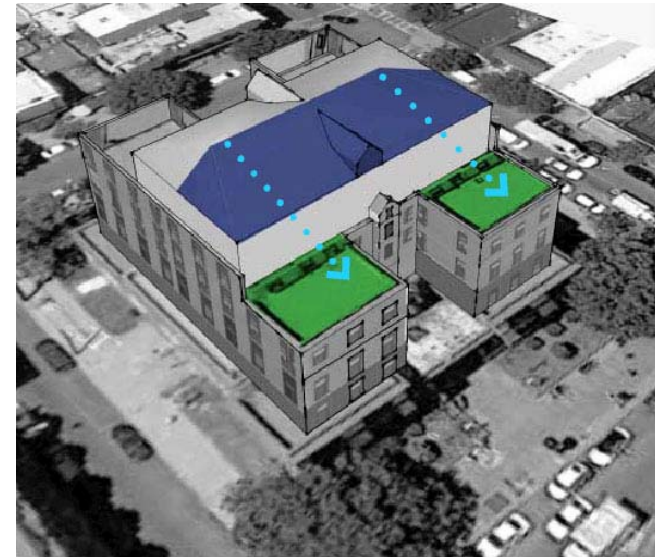
Additional flood pumps

- Hoboken currently has 1 flood pump (75,000,000 gallons/day)
- Supporting North Hudson Sewerage Authority's application for 3 additional pumps



Grant applications summary

- Flood walls
- Three additional flood pumps
- Property acquisition & underground water detention system
- Emergency backup generators
- Solar-powered message signs/warning system
- Public awareness and education campaign
- City Hall stormwater improvement project
- Dry floodproofing of historic public library



Sheltering in place/ Resiliency through the storm

- Despite mandatory evacuation orders, majority of residents will not evacuate (Hurricane Irene/Hurricane Sandy)
- Challenges of sheltering in place
 - Water
 - Elevators
 - Identifying emergency situations
- Microgrid
 - Multiple energy sources (natural gas, solar, diesel) for redundancy
 - Protect critical infrastructure and neediest residents



More resilient to power disruptions

- PSE&G has proposed plan to consolidate 3 Hoboken substations into 2 and to elevate substations to protect from flooding.
- Applied for grant for permanent natural gas backup generators for critical infrastructure (City Hall, fire stations, police HQ, police & fire radio repeaters, community center, homeless shelter, school shelter, public works garage, ambulance squad)
- Exploring development of microgrid infrastructure
- Applied for grant for solar-powered variable message signs for hazard warning system



Growing CERT program

(Community Emergency Response Team)



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Hoboken – a member of UNISDR's Making Cities Resilient Campaign



Hoboken Resilience Run 5K

