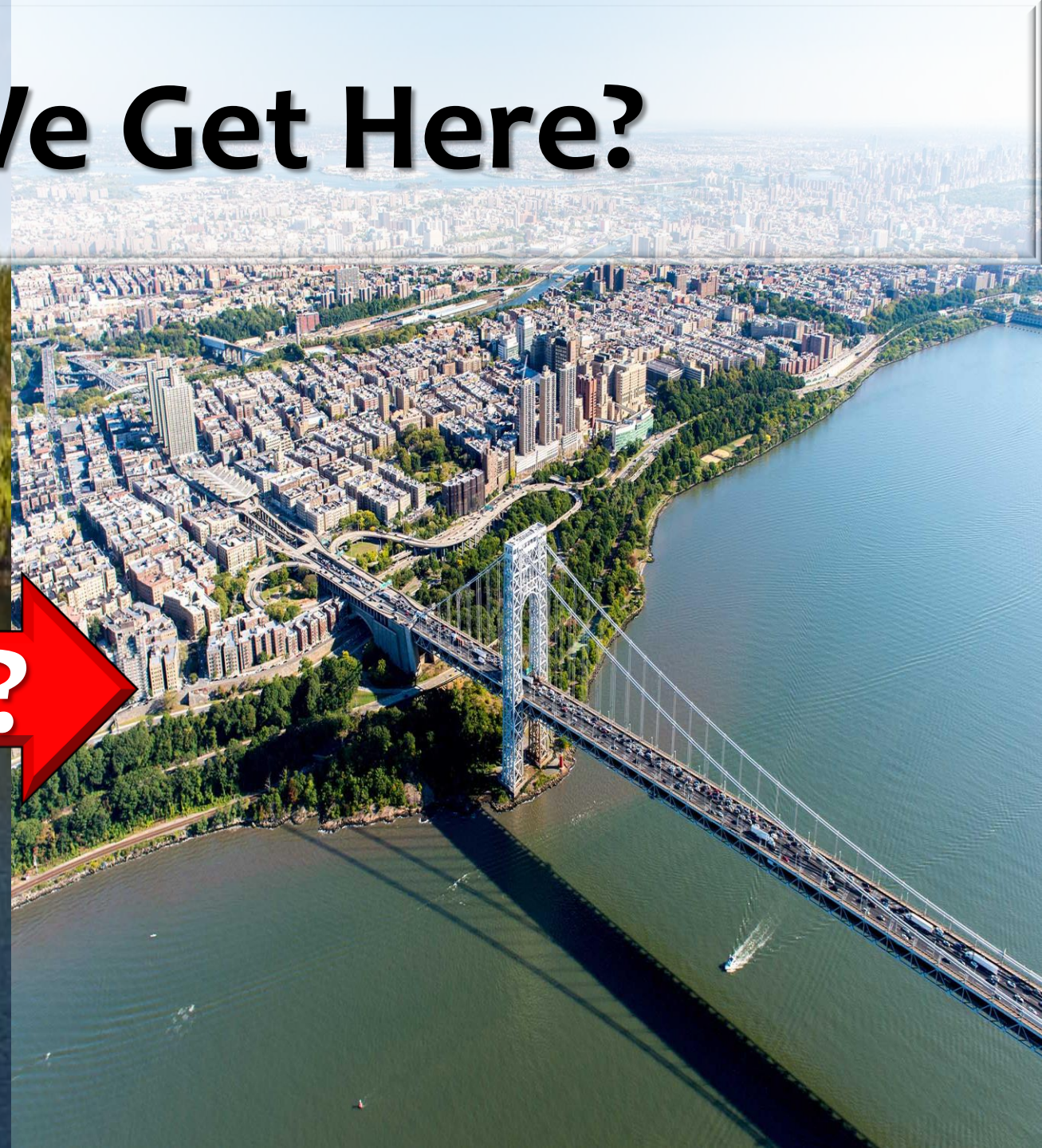


# Coastal Resiliency in New Jersey



**Virginia Kop'Kash**  
Assistant Commissioner for Land Use Management  
New Jersey Department of Environmental Protection

# How Did We Get Here?

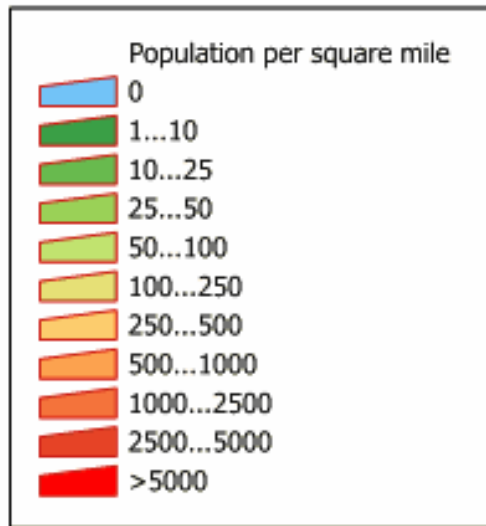


# How Did We Get Here?

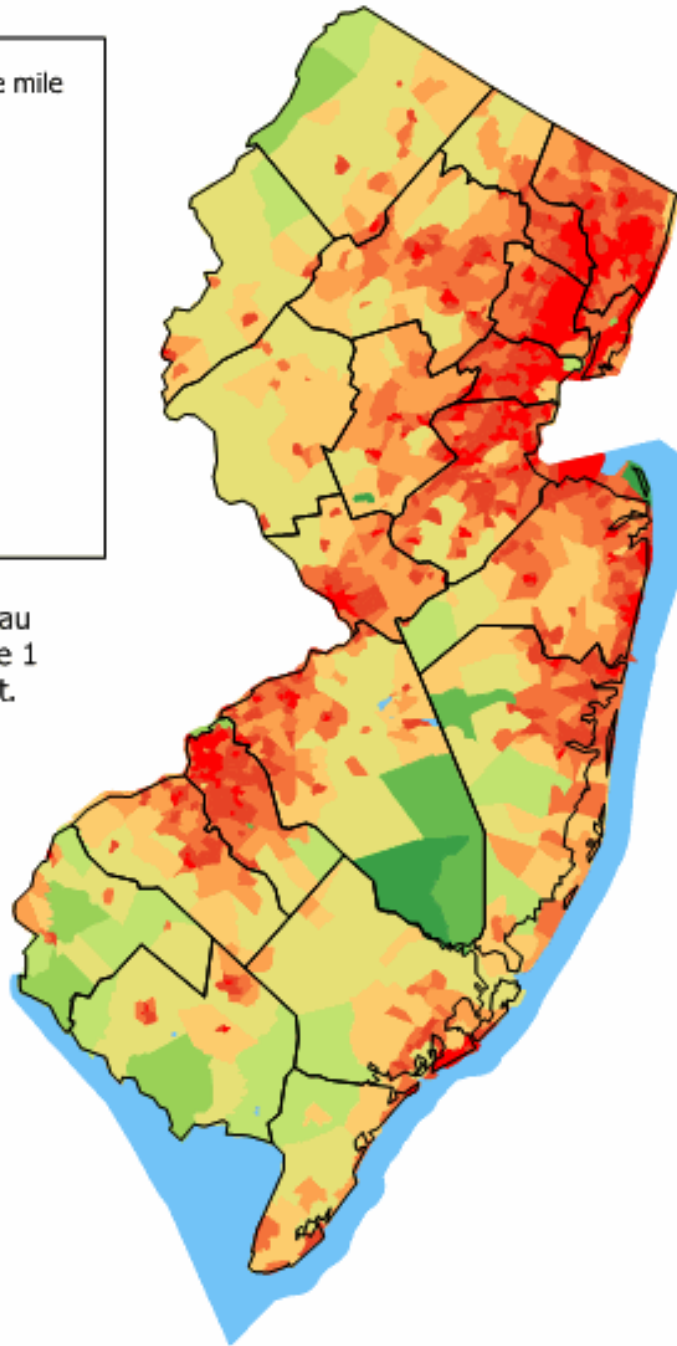


# How Did We Get Here?





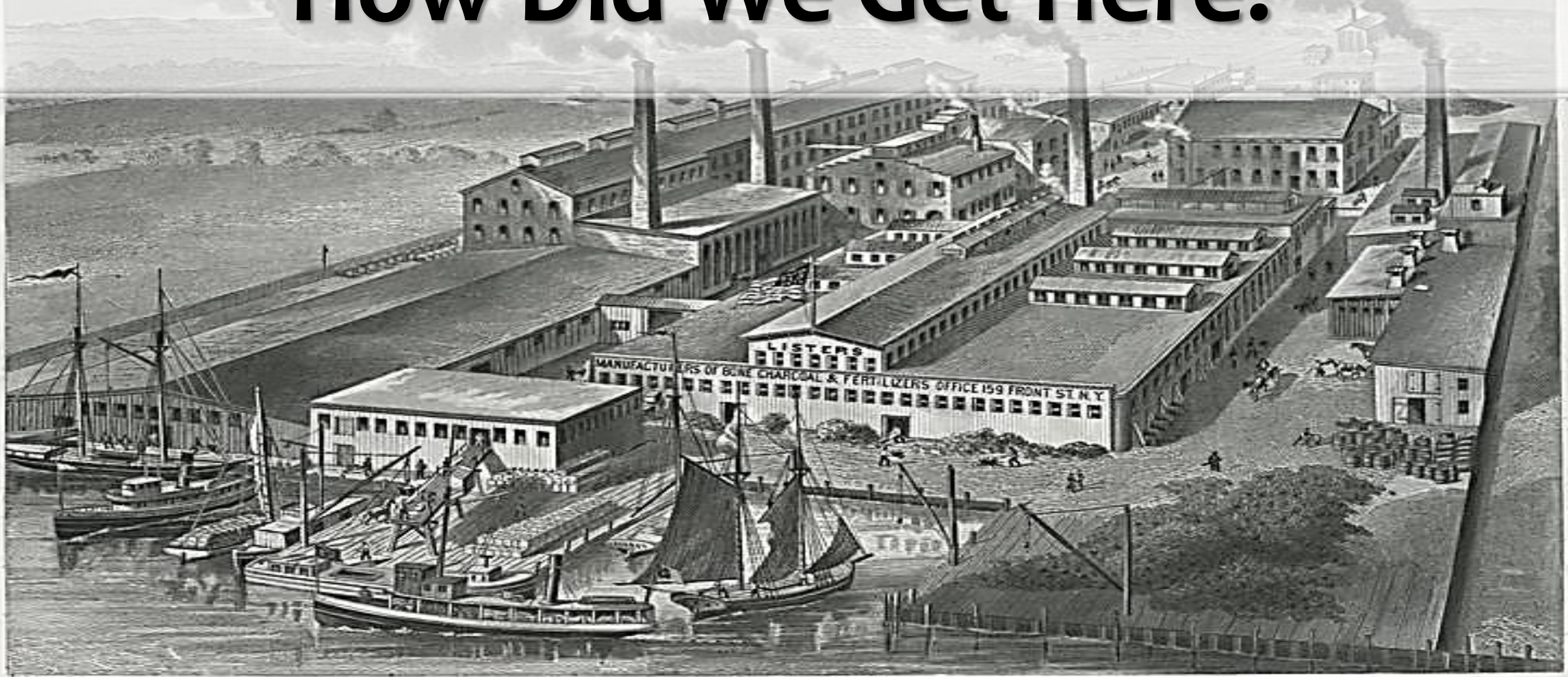
Source: U.S. Census Bureau  
Census 2000 Summary file 1  
population by census tract.



- New Jersey's original settlements were along navigable waterways
- As a result, many of the State's population centers are within flood hazard areas today



# How Did We Get Here?



*Passaic Agricultural Chemical Works*

# How Did We Get Here?





# How Did We Get Here?



# How Did We Get Here?



# What is Resiliency?



May 21, 2009



November 5, 2012



# What is Resiliency?

## Resiliency

The ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events\*

- ❖ Enhanced resiliency = effectively anticipating disasters and planning in advance to reduce disaster losses instead of merely coping with the aftermath of an event
  - 💰 Complicated and expensive – requiring the investment of time and resources prior to an event



# Impacts of Superstorm Sandy

**Two million households in the state lost power**

**346,000 homes were damaged or destroyed**

**Economic losses to businesses of up to \$30 billion**

**37 people in NJ were killed**

# What is Resiliency?



- Building Beaches and Dunes



- **Building Sea Walls**

- **Elevating Houses**



# • Retreating from Vulnerable Areas

## Blue Acres Program:

- 935 offers made on homes in 14 municipalities
- 714 offers accepted
- 632 closings on homes in 14 municipalities
- 531 demolitions completed





# What are the Costs?

**Blue Acres has spent more than \$172 million on acquisitions to date.**

- \$375 million is currently committed for Blue Acres projects.
  - \$185 million from FEMA Hazard Mitigation Grant Program
  - \$175 million from HUD Community Disaster Block Grant – Disaster Recovery
  - \$15 million from State bond funds

**Since Superstorm Sandy, \$1.216 billion have been spent on shore protection projects in New Jersey.**

- \$647 million spent on completed projects
  - Federal contribution = \$605 million
  - New Jersey's contribution = \$42 million
- \$569 million spent on projects currently under construction
  - Federal contribution = \$490 million
  - New Jersey's contribution = \$79 million

An aerial photograph showing a coastal town in New Jersey that has been severely flooded. The water is murky and has inundated large areas of the town, including residential neighborhoods and commercial buildings. A prominent road or bridge structure cuts through the flooded area, providing a path through the water. The foreground shows a sandy beach and the ocean waves crashing against the shore. The overall scene depicts the aftermath of a major coastal disaster.

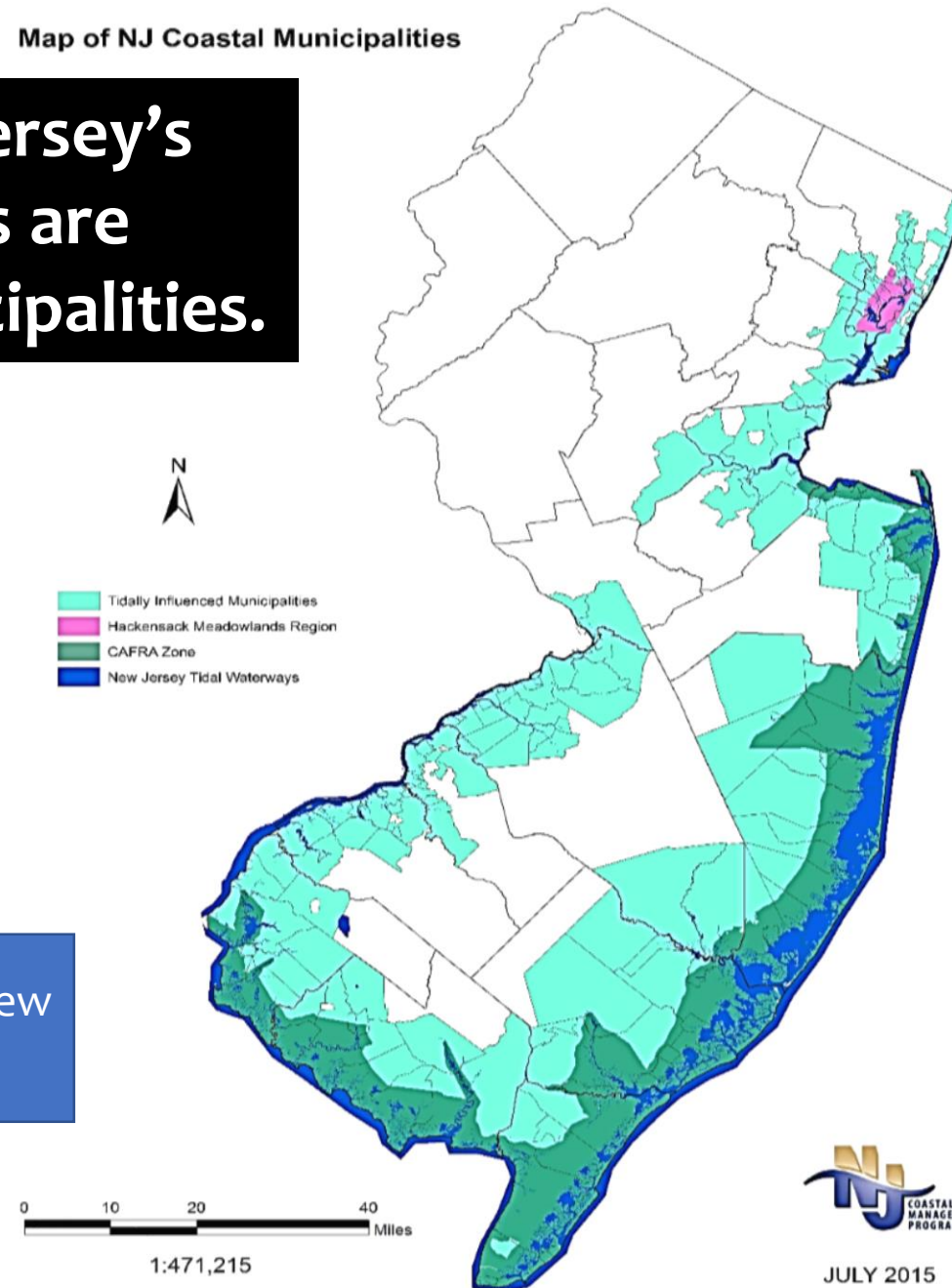
# Why is Coastal Resiliency So Important in New Jersey?

# New Jersey's Coast

- 1,800 Miles of Tidal Coastline
- 239 Municipalities
- Inland, Seaward, Interstate
- \$16 Billion Annual Tourism
- 1.5 Million Migratory Shorebirds
- 50-Species Commercial Fishing

**42% of New Jersey's municipalities are coastal municipalities.**

Map of NJ Coastal Municipalities



<http://www.nj.gov/dep/cmp/docs/new-detailed-cafra-map.pdf>



JULY 2015

# Coastal Development

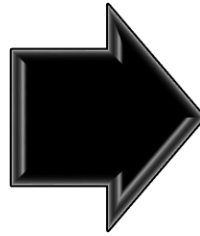




# Coastal Hazards

## Coastal hazards include:

- Chronic flooding
- Storm events of increasing intensity and frequency
- Sea level rise
- Erosion



These hazards threaten our coast, including the population, infrastructure, and habitat within our coastal areas



# Flooding

- ❖ **New Jersey endures severe and chronic flooding due to its:**
  1. **Geography**
  2. **Location along the eastern seaboard**
  3. **High level of development**
    - **New Jersey is the most densely populated state in the nation.**
    - **Proximity to New York and Philadelphia increases the demand for development.**
    - **Development increases flooding.**



# Climate Change

## ❖ Flooding and storm events have been getting worse due to climate change.

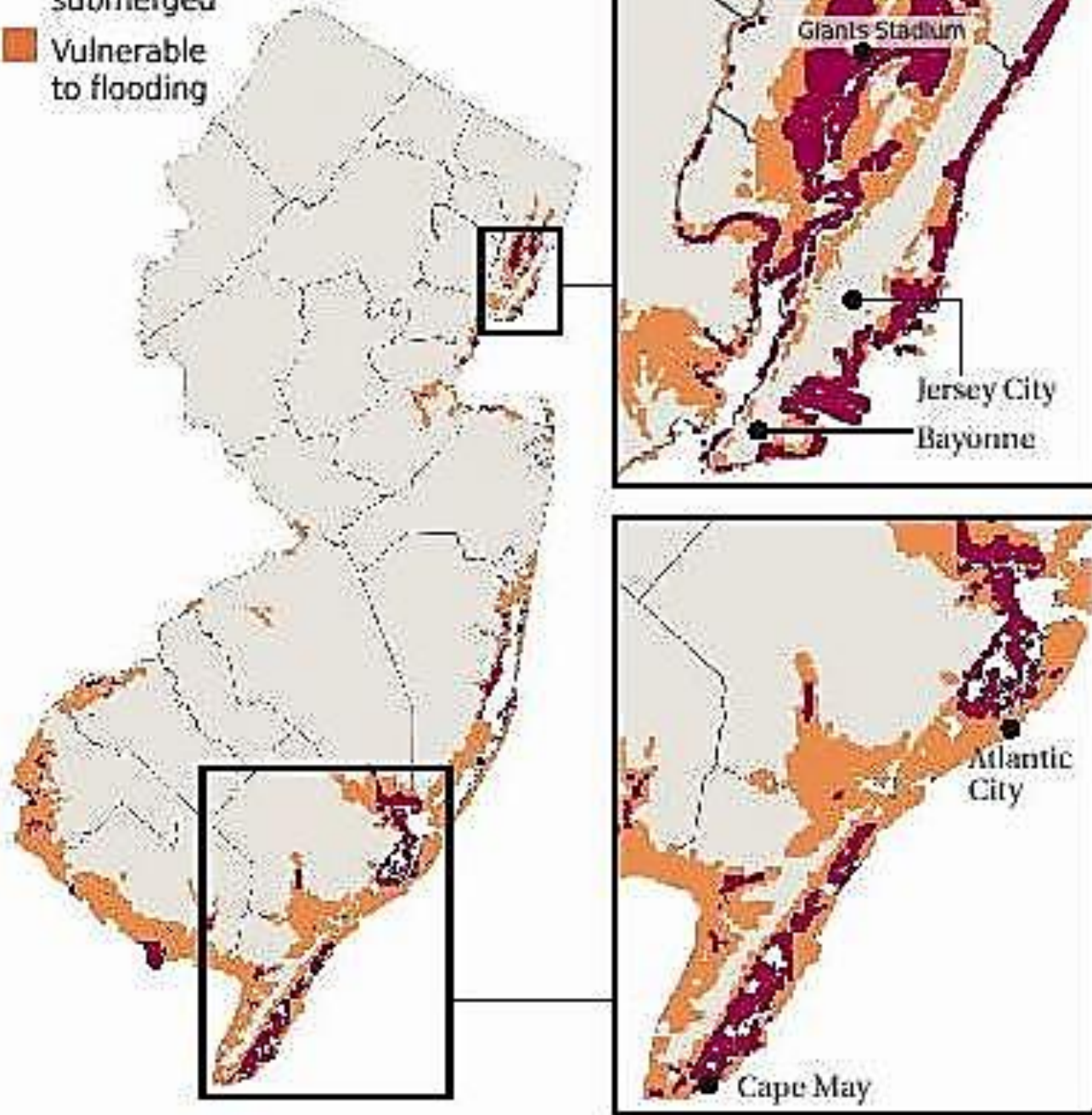
- The atmosphere is getting warmer.
  - ⌚ Warmer air holds more moisture, which results in increased flooding and larger storm events, such as Superstorm Sandy.
- Sea levels are rising.
- Land is subsiding.





# Sea Level Rise

- Potentially submerged
- Vulnerable to flooding



- A sea level rise of 2 feet would affect or submerge about 1% of New Jersey's land along the coastline.
- This is projected to occur by 2100.