Climate Change:
Vulnerability Assessment and Preparedness

Data and the Community

Veda Truesdale, Bloustein School of Planning and Public Policy, Rutgers University

Photo courtesy of the Newark Ironbound Community Corporation

Knowing Your Challenge

- How will climate change affect your region? Your community?

- Which impacts do you need to prepare for?

- Which resources are at risk?

- *How receptive is your community to this information?*

Preparedness and Resilience Plan

Some Factors to Consider

Climate Impacts:
- **Current Flood Risk**
- **Storm surge**
- **Sea Level Rise**
- **Riverine Flooding**
- **Drought**
- **Extreme Heat**
- **Urban Heat Island**
- **Diminished Air Quality**
- **Salt Water Intrusion**
- **Vector-borne disease**

Factors to Consider:
- **Tree canopy coverage**
- **Impervious Coverage**
- **Disease incidence**
- **Adverse health incidence (heat-related illness, mold problems)**
- **Infrastructure /Critical Facilities**
  - **Evacuation Routes,**
  - **Emergency Response**
  - **Medical Facilities**
  - **Water and Wastewater Treatment**
  - **Electrical sub-stations**
  - **Grocery Stores**
  - **Hardware Stores**
  - **Community Centers**
  - **Cooling Centers**
  - **Schools**
  - **Major Employers**
  - **Transit Facilities)**
- **Land Use**
- **Residential Areas**
- **Known Contaminated Sites**
- **Vulnerable Populations**
  - **Elderly**
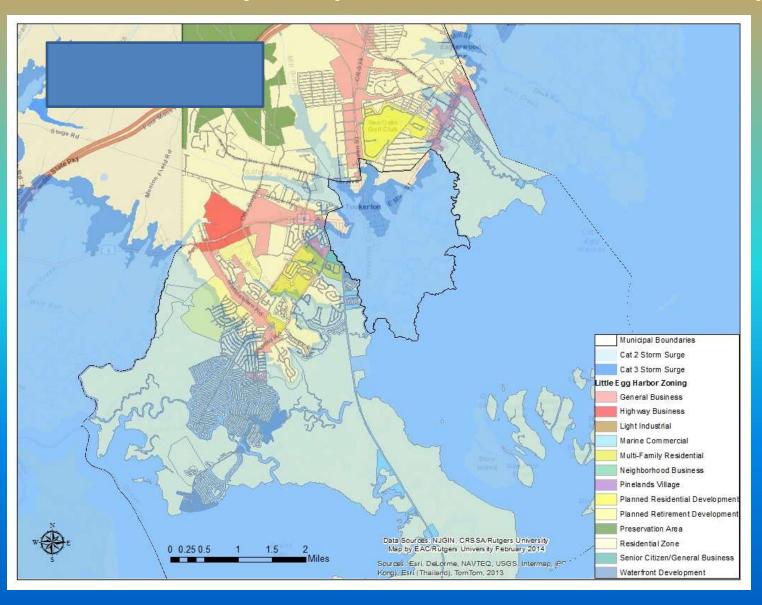 - **Young**
  - **Living in Poverty**
  - **Socially isolated**
  - **Linguistically isolated**
- **Zoning**
- **National Flood Insurance Payouts**
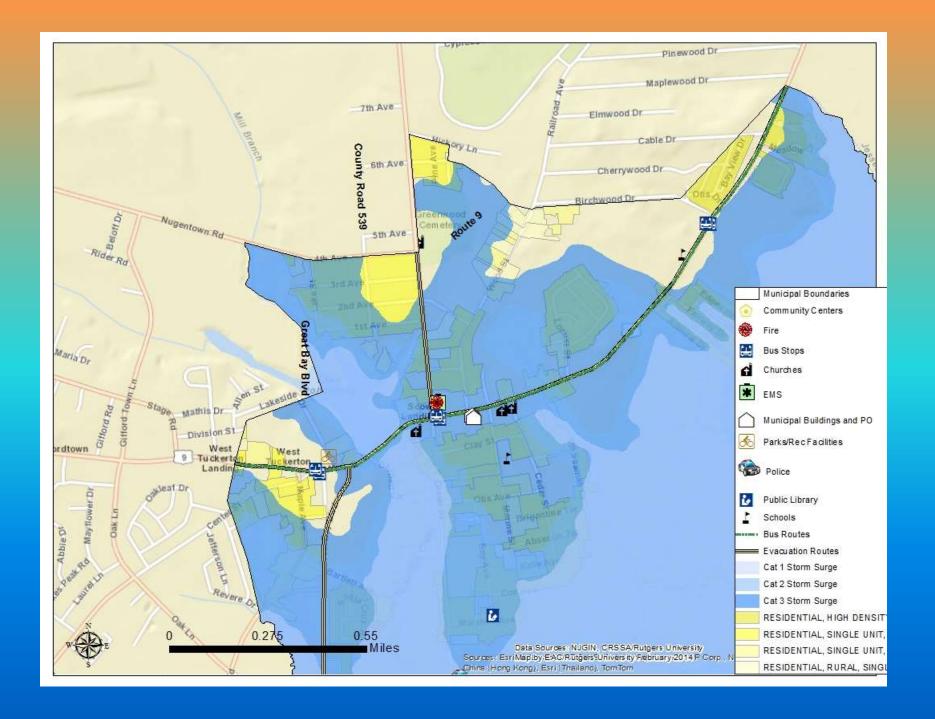- **FEMA Individual Assistance**
- **FEMA Public Assistance**

How to Make Too Many Maps and Overwhelm Everyone:
8 * 18 = 144 (and we're not done yet)

	FEMA Flood Zones	Category 2 Storm Surge	Category 2 Storm Surge	Category 3 Storm Surge	1 Foot Sea Level Rise	3 Feet Sea Level Rise	6 Feet Sea Level Rise	Hot Spots
Known Contaminated Sites	x	x	x	x	x	x	x	x
Infrastructure /Critical Facilities	x	x	x	x	x	x	x	x
Evacuation Routes	x	x	x	x	x	x	x	x
Emergency Response	x	x	x	x	x	x	x	x
Medical Facilities	x	x	x	x	x	x	x	x
Water and wastewater treatment	x	x	x	x	x	x	x	x
Electricity Infrastructure (sub-stations)	x	x	x	x	x	x	x	x
Other Utility infrastructure	x	x	x	x	x	x	x	x
Transit facilities	x	x	x	x	x	x	x	x
Grocery Stores	x	x	x	x	x	x	x	x
Community Centers	x	x	x	x	x	x	x	x
Cooling Centers	x	x	x	x	x	x	x	x
Major Employers Schools	x	x	x	x	x	x	x	x
Land Use	x	x	x	x	x	x	x	x
Residential Areas	x	x	x	x	x	x	x	x
Vulnerable Populations	x	x	x	x	x	x	x	x
Social Vulnerability	x	x	x	x	x	x	x	x
Zoning	x	x	x	x	x	x	x	x

But don't try to put it all on one map

Legend:
- Municipal Boundaries
- Cat 2 Storm Surge
- Cat 3 Storm Surge

Little Egg Harbor Zoning
- General Business
- Highway Business
- Light Industrial
- Marine Commercial
- Multi-Family Residential
- Neighborhood Business
- Pinelands Village
- Planned Residential Development
- Planned Retirement Development
- Preservation Area
- Residential Zone
- Senior Citizen/General Business
- Waterfront Development

Data Sources: NJGIN, CRSSA/Rutgers University
Map by EAC/Rutgers University February 2014
Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC
Kong), Esri (Thailand), TomTom, 2013

0 0.25 0.5 1 1.5 2 Miles

Other Issues

- Missing data, withheld data, etc.

- "Ground-truthing" the data.

- Participatory data development, including PGIS.

- Helpful partnerships.

- Certification Programs.