



*Preparing New Jersey For Climate
Change: Hurricane Sandy and
Transformation*

National Adaptation Forum

Wednesday April 3, 2013

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on behalf of the New Jersey Climate Adaptation Alliance*

Sandy By The numbers

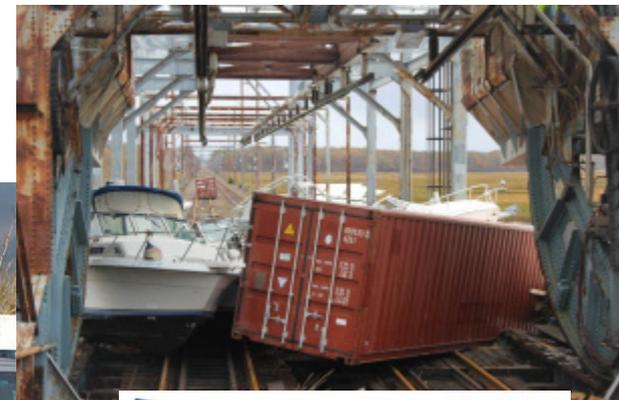
- Storm surge measured 8.5 feet above normal Sandy Hook
- Sustained winds between 50-70 mph; peak gust 88 mph
- 34 deaths (drowning, hypothermia, falling trees, CO poisoning, power-loss to oxygen, etc.)
- 3rd most expensive storm in US history
- \$25 bn est insured US losses (Insurance Info Institute)
- Office of the Governor, estimates NJ damage at \$36.8 bn
- 116,000 citizens evacuated/displaced from their homes
- 346,000 homes damaged or destroyed
- 6 schools destroyed; 185,000 businesses impacted



Power outages statewide 7,000,000 people without power



Transit Transportation Fuel



Insurance Institute for Business & Home Safety

HURRICANE SANDY RESOURCES

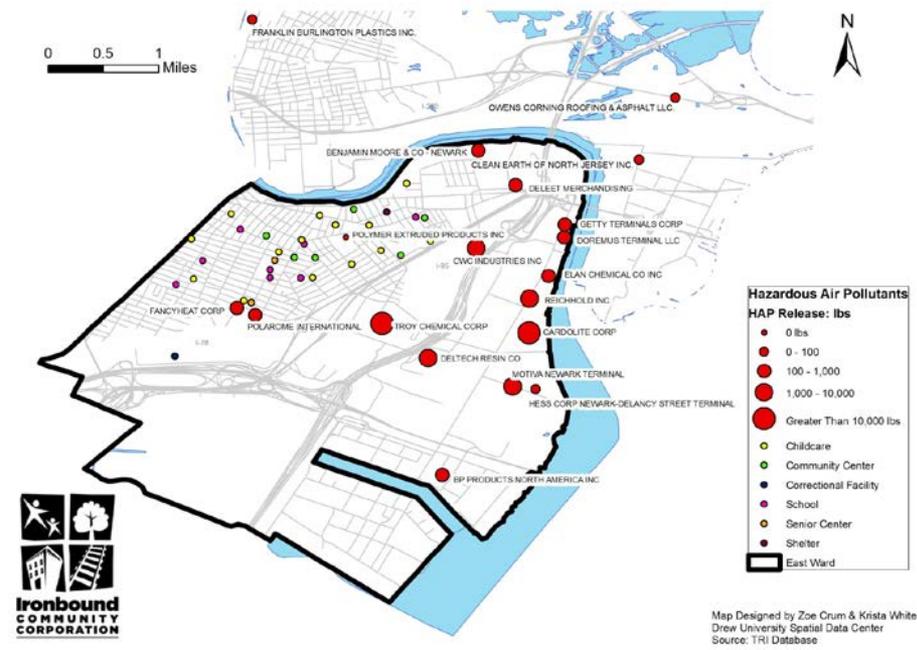
Prepare Generators



URBAN AREA CHALLENGES



Facilities Emitting Hazardous Air Pollutants East Ward, Newark NJ and Nearby South Kearny



Debris and Solid Waste Statewide



STORMWATER MANAGEMENT CONCERNS

BACKFLOW



WATER QUALITY



NJ Climate Adaptation Alliance

climatechange.rutgers.edu/njadapt.html

The screenshot shows a Firefox browser window displaying the website for the NJ Climate Adaptation Alliance. The URL in the address bar is climatechange.rutgers.edu/njadapt.html. The page header includes the Rutgers logo and 'School of Environmental and Biological Sciences'. Below this is a blue navigation bar with the text 'NJ Climate Adaptation Alliance' and a search box. A left-hand menu contains sections for 'Menu', 'Information', 'Stay In Touch!', and 'Our Partners'. The main content area features a large image of a yellow building on stilts overlooking the ocean. Below the image is the heading 'Preparing NJ for Climate Change' and a paragraph of introductory text. A 'Quick Links' box on the right contains links to 'Conference Agenda', 'Inaugural Conference Proceedings', and 'NJ Climate Brochure'. A list of bullet points follows, detailing the Alliance's goals and activities. At the bottom of the page, there is a footer with contact information and a copyright notice.

Overview

- Network of policymakers: public and private sector practitioners, academics, NGOs and business **leaders to build climate change preparedness capacity in NJ.**
- Formed in response to consensus recommendation by participants during November 2011 Conference “Preparing NJ for Climate Change” (<http://climatechange.rutgers.edu/njadapt.html>)
- Facilitated by Rutgers University
- A Network of Networks: strong partnerships work within existing delivery systems
- **Pred-dated Sandy**
- Strategic Workplan

Advisory Committee

Honorary Co-Chairs: Governors Thomas Kean and James J. Florio

Chair: Anne E. Hoskins, Sr. Vice President PSEG Services Corporation

Louis Berger Group

NJ Audubon

Conservation Resources, Inc.

Hatch Mott MacDonald

American Littoral Society

Isles, Inc.

Leckner Consulting, Inc.

The Nature Conservancy of NJ

Middlesex Water Company

NJ State Chamber of Commerce

NJ Natural Gas

Hopewell Township Engineering Dept.

Sustainability Institute at TCNJ

NJ Center for Public Health Preparedness

Ferrerio Engineering

Regional Plan Association

Association of Environmental Authorities

Princeton Regional Health Department

Ironbound Community Corporation

NJ Future

Norz Hill Farm & Market

Swiss Reinsurance America

Edgewood Properties

Terhune Orchards

NorthJersey Transportation Planning Authority

Thomas Edison State College

Bayshore Recycling

PlanSmartNJ

Base Climate Data and NJ Sector Vulnerability

Impacts:

- Precipitation
- Temperature
- Drought
- Storm Surge
- Sea Level Rise
- Heat Waves

Sectors:

Built Infrastructure

- Energy
- Transportation (roads, railways, ports, freight)
- Telecommunications
- Parks & Preserved Lands

Water Resources

- Drinking water quantity
- Water quality
- Inland flooding
- Infrastructure (drinking water, wastewater, stormwater)
- Ecosystem Impacts

Public Health and Society

- Emergency Preparedness
- Heat Emergencies
- Vector Borne Disease
- Allergies
- Cardiovascular conditions

Agriculture

- Food Supply
- NJ commodities

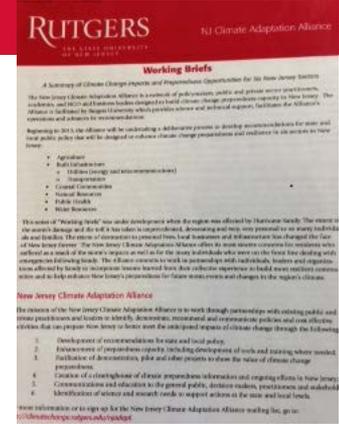
Coastal

- Ecosystem services
- Tourism
- Residential and commercial structures

The Natural Environment

- Coastal & freshwater wetlands
- Back bays
- Forests
- Habitats, native species (flora, fauna)

Trends and Projections Sector Based Working Briefs



Risk and Vulnerability analysis by sector

- Key impacts
- Consequences
- Likelihood/magnitude/duration
- Timing
- Statutory/Legal Structure
- Relevant leading adaptation practices
- Application for NJ (costs, co-benefits, jurisdictional level)
- Initial recommendations for state, local, private sector action
- Identify science and research needs
- Identify resource needs



Public Policy Process



Public Health



- Focus Groups
 - Surge capacity
 - Vulnerable populations
 - Communications Infrastructure key sans power
 - Update requirements re: climate change

- Survey NJACCHO

- Engaging other PH networks
(hospitals, residential facilities,
physicians, social workers)

Outreach , Education and Marquee Projects

In the pipeline (for e.g.)

- Conservation and farmland preservation community
- Chamber of Commerce
- Water Resource Organizations and Environmental Authorities
- League of Municipalities
- Statewide Post Sandy Poll
- NJ Adapt Mapping Tools

MANTOLOKING DUNES AND SETBACKS

9/17/12



11/5/12



Courtesy M. Mauriello

A ZONE FOUNDATION MITIGATION WOODBIDGE (BFE=9' - FF=12')



IRENE



SANDY

South Cape May Meadows Preserve

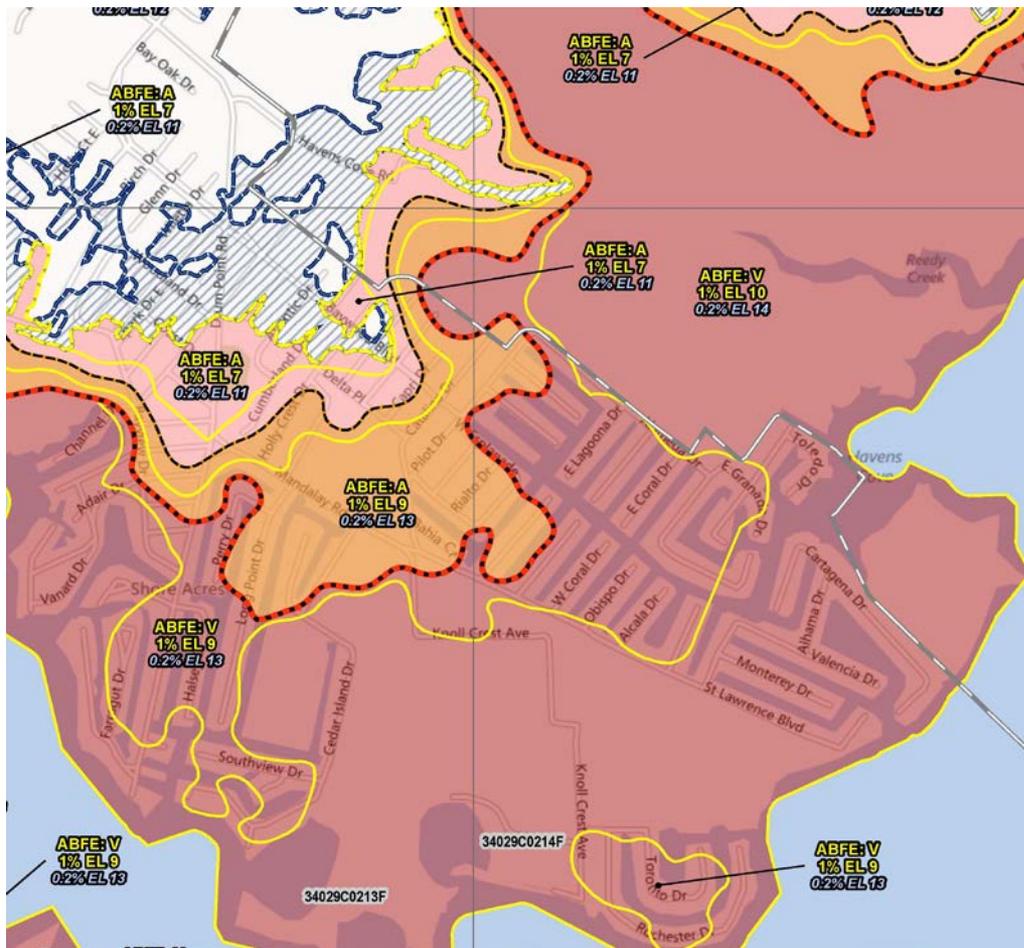


Courtesy: Patricia Doerr, TNC

TIMING and STRATEGIES



New Advisory Base Flood Elevation Maps



-Updates decades old maps to current conditions for coastal surface water elevation of a flood having a 1% annual chance of being equaled or exceeded in any given year

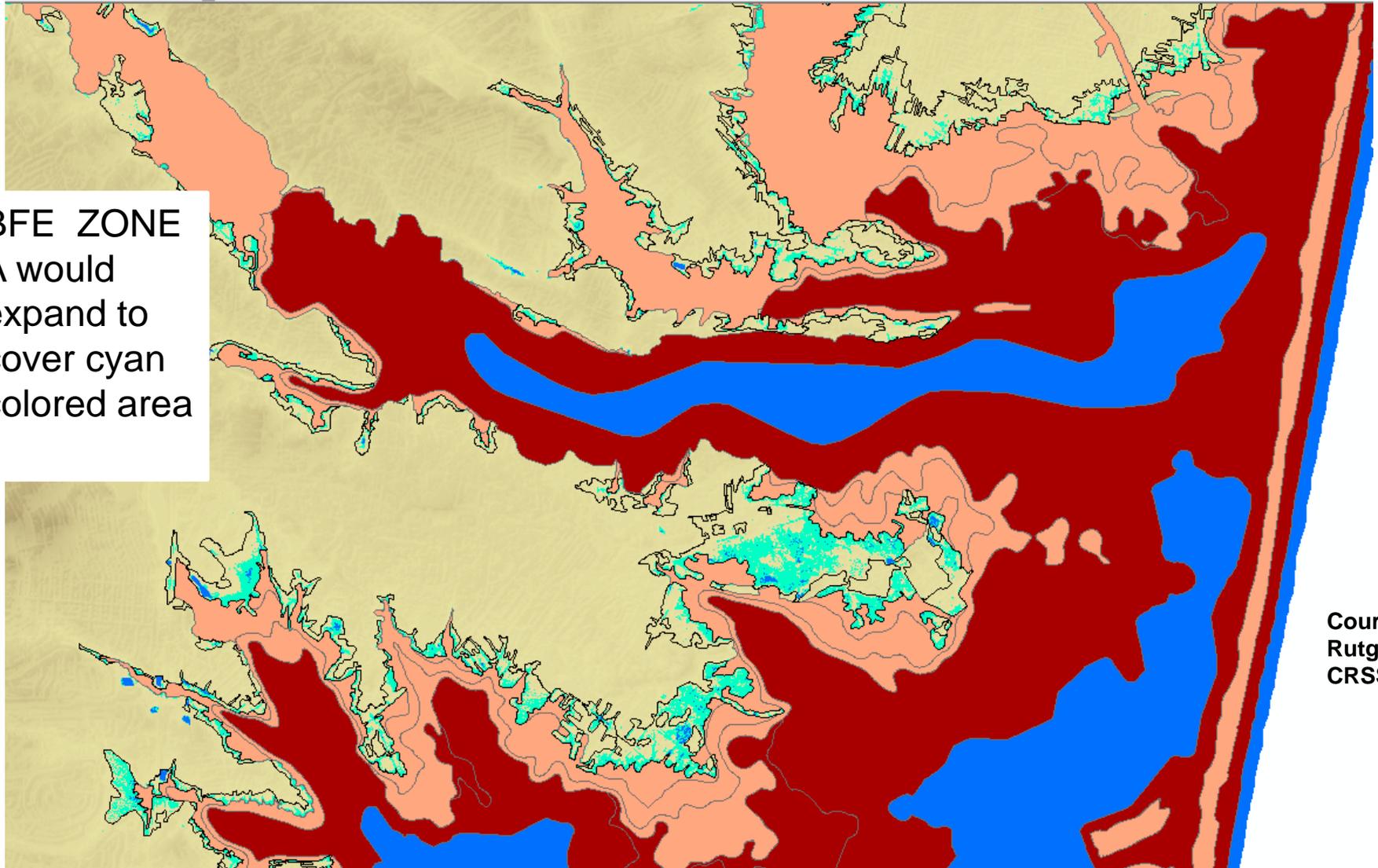
-Not yet tied to insurance rates

-NJ requires new and reconstructed buildings be elevated in accordance with ABFEs (+ 1ft freeboard)

-SLR not incorporated
16 inches by 2050
38 inches by 2100

(Best estimates, Kopp and Miller 2012)

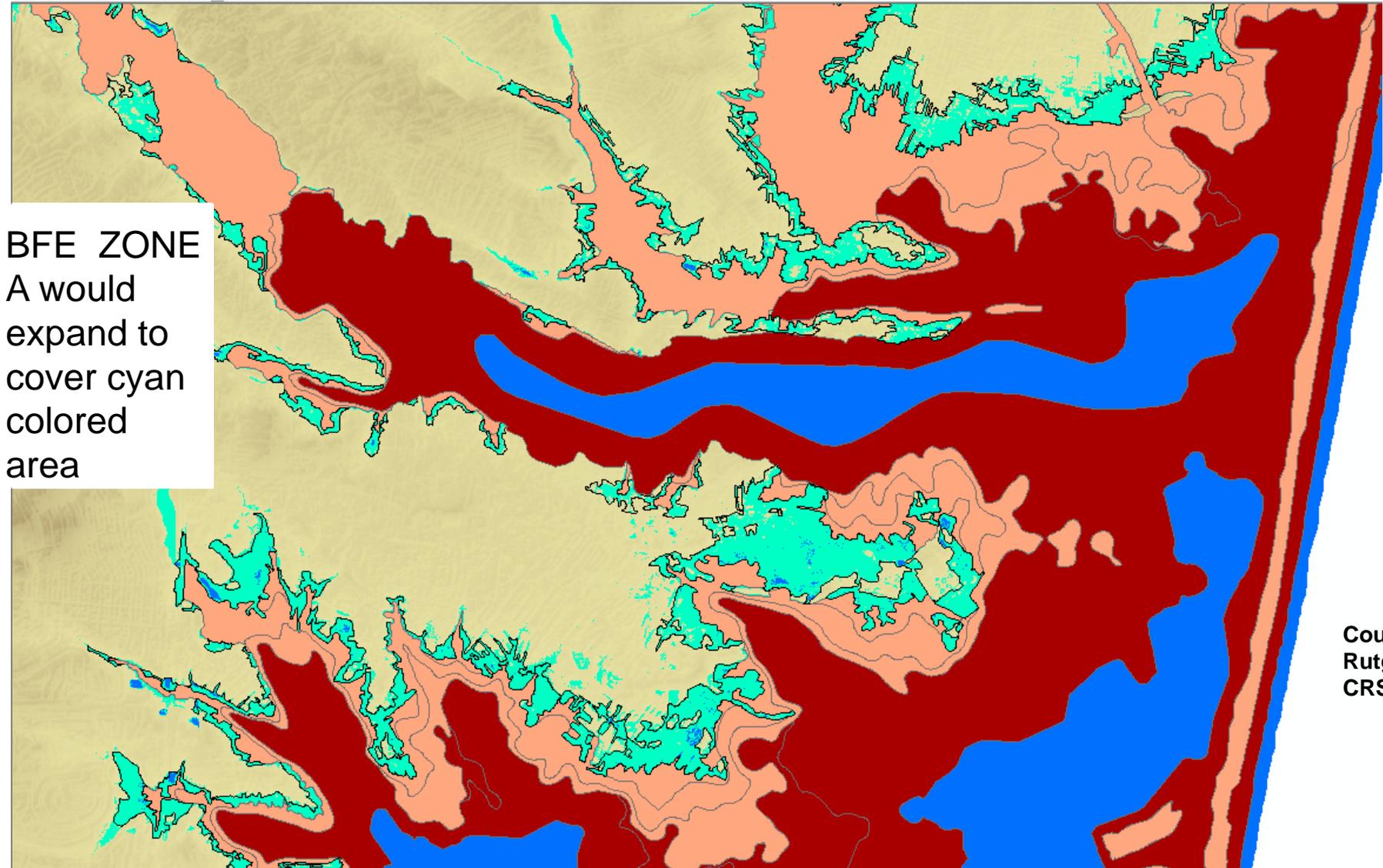
Simulation of Sea Level Rise at 2050 (1.3 feet)



BFE ZONE A would expand to cover cyan colored area

Courtesy Rutgers CRSSA

Simulation of Sea Level Rise at 2100 (3 feet)



BFE ZONE A would expand to cover cyan colored area

Courtesy Rutgers CRSSA

Planning & Market Mechanisms Together

- Hazard Mitigation Plans
 - Ties Federal \$ for state/local mitigation per Stafford/Disaster Mitigation Act
 - State and County multi-jurisdictional multi-hazard mitigation plans
 - FEMA/RU Outreach & Education 2-County Pilot improve multijurisdictional planning thru wider stakeholder net; cultural shift that resiliency planning is responsibility of local officials, homeowners, not just FEMA.
- 
- Biggert-Waters Flood Insurance Reform 2012
 - Rate structure reform for second homes, severe repetitive loss and phase in actuarial rates for structures newly mapped into special flood hazard areas
- 
- Community Rating System
 - Discounts (up to 45%) on flood insurance as incentive for community-based flood protection
 - 61/550 NFIP Municipalities in NJ currently participate in CRS
 - NJ rates Haz Mitigation Grant projects higher if in CRS community

We gratefully acknowledge our Project Partners



The Gallagher Family Fund



The New Jersey Climate Adaptation Alliance Advisory Committee