



**National Oceanic and Atmospheric
Administration Fisheries' Community
Resiliency Workshop**

**Donna D. Holaday, Mayor
City of Newburyport
June 27, 2017**



The City of Newburyport



Small, coastal city in Essex County, 35 miles northeast of Boston bordered by the Merrimac River and Atlantic Ocean at Plum Island. Population 18,000. Historic seaport with a vibrant downtown and tourism industry, expansive parks, a business & industrial park

Sustainability Initiative Highlights

2004- **solar array** - Our First Major Energy Project

Newburyport Middle and Upper Elementary schools- 500 kW

Solar Array- the largest municipal project at this time



Solar Arrays atop the Nock Middle School in Newburyport, Mass.
Photo courtesy: Jim Walker, Ameresco

Sustainability Initiative Highlights

- 2005- **Seacoast Energy & Environmental Design Coalition** emerged (SEED)
- 2007- City established the **Energy Advisory Committee** to study, evaluate, and makes recommendations regarding energy conservation, energy efficiency, and/or conversion to greener energy sources



Sustainability Initiative Highlights

- 2008- Wind Energy Ordinance



March Richey Woodworking: 80,000 sq ft site, 600 kw system with biomass heating

Sustainability Initiative Highlights

- 2009- Single stream recycling



www.flickr.com/formerwmdriver



- Separated out disposal costs from lump sum contract
- The city has weathered the down turn of the recycling market through its contract negotiations
- Recycling holding around 36%
- 2016 initiated a pilot organics collection
- Hazard waste collections, mattress recycling & bikes



Sustainability Initiative Highlights

Place-Based Education

- Path for learners to become **active citizens and stewards of the environment**
- Approach emphasizes hands-on, **real world learning experiences** that challenge students to learn and solve problems
- Increases **academic achievement** & helps students develop stronger ties to their community
- Enhances student's appreciation for the natural world, and creates a heightened **commitment for serving as contributing citizens**



Sustainability Initiative Highlights

2010- Newburyport Designated a Green Community



\$759,000: total grant funding



Energy Activities

- Promoted residential **energy efficiency programs**



- Solar school traffic lighting Solar and trash compactors in many public areas.

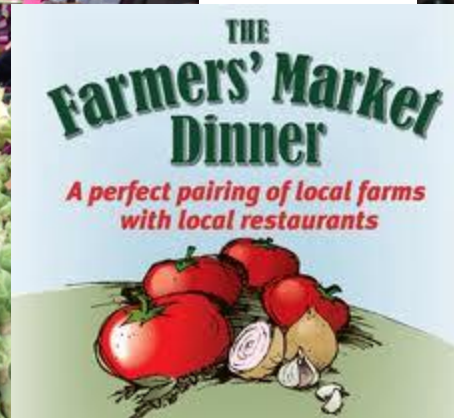


True North Solar & Net Metering Contract



Net Metering contract with Salisbury, Newburyport & Triton School District- 10% fixed discount for Newburyport with \$40,000/year savings

THE NEWBURYPORT FARMERS' MARKET



43 vendors & year-round market

Clean-Ups



500 lbs.
collected on
Plum Island!



Citizens for Sustainable Bagging



Student led initiative
Ordinance passed to ban
single-use plastic bags



Coastal Resiliency



Resiliency



Storm Surge was formed in 2013 by a group of concerned citizens-
to encourage and support our communities to prepare for the **impacts of sea
level rise, extreme weather events and other effects of long-term climate
change**



Sustainability Roadmap

Mass. Clean Energy Center & Meister Group selected Newburyport for pilot:

- Create a community vision
- Identify energy inventory and interests
- Prioritizes key aspects to guide research to develop a robust clean energy inventory
- Develop a sustainability roadmap



Flood Resilience for Riverine and Coastal Communities

BUILDING
BLOCKS FOR SUSTAINABLE
COMMUNITIES

Newburyport, Massachusetts
Next Steps Memorandum

October 14, 2015



Partnership for Sustainable Communities Grants

Prioritization of community resources



Task forces reviewed and prioritized community assets of highest concern



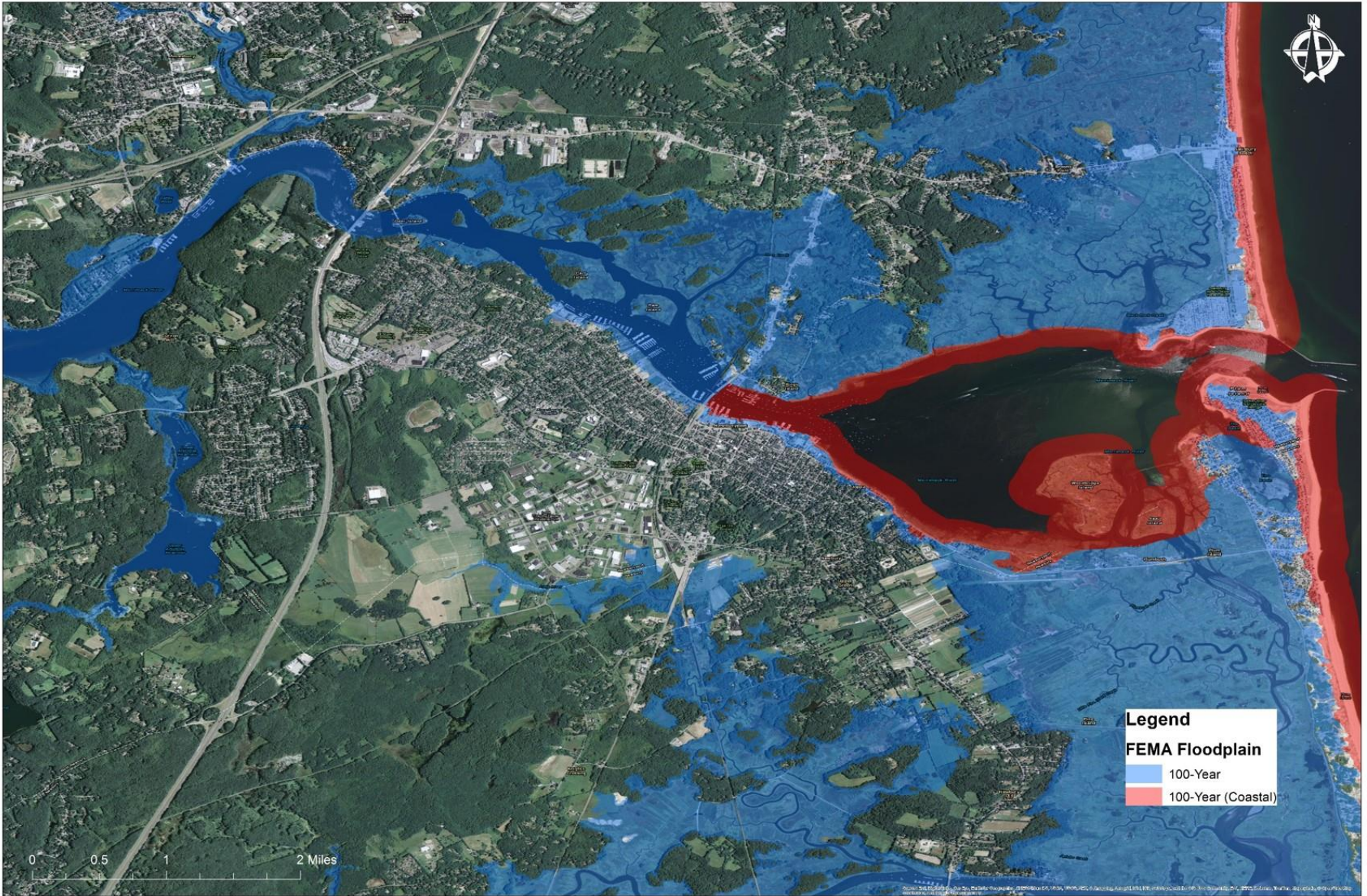
Fall 2015
Consultation
services
provided by
federal
Agencies: DOT,
HUD and EPA

COASTAL FLOODING & CONCERNS



Plum Island: heavily populated, eleven-mile barrier beach surrounded by the Great Marsh, Massachusetts's most extensive estuary system. Coastal erosion occurring in and around Plum Island.

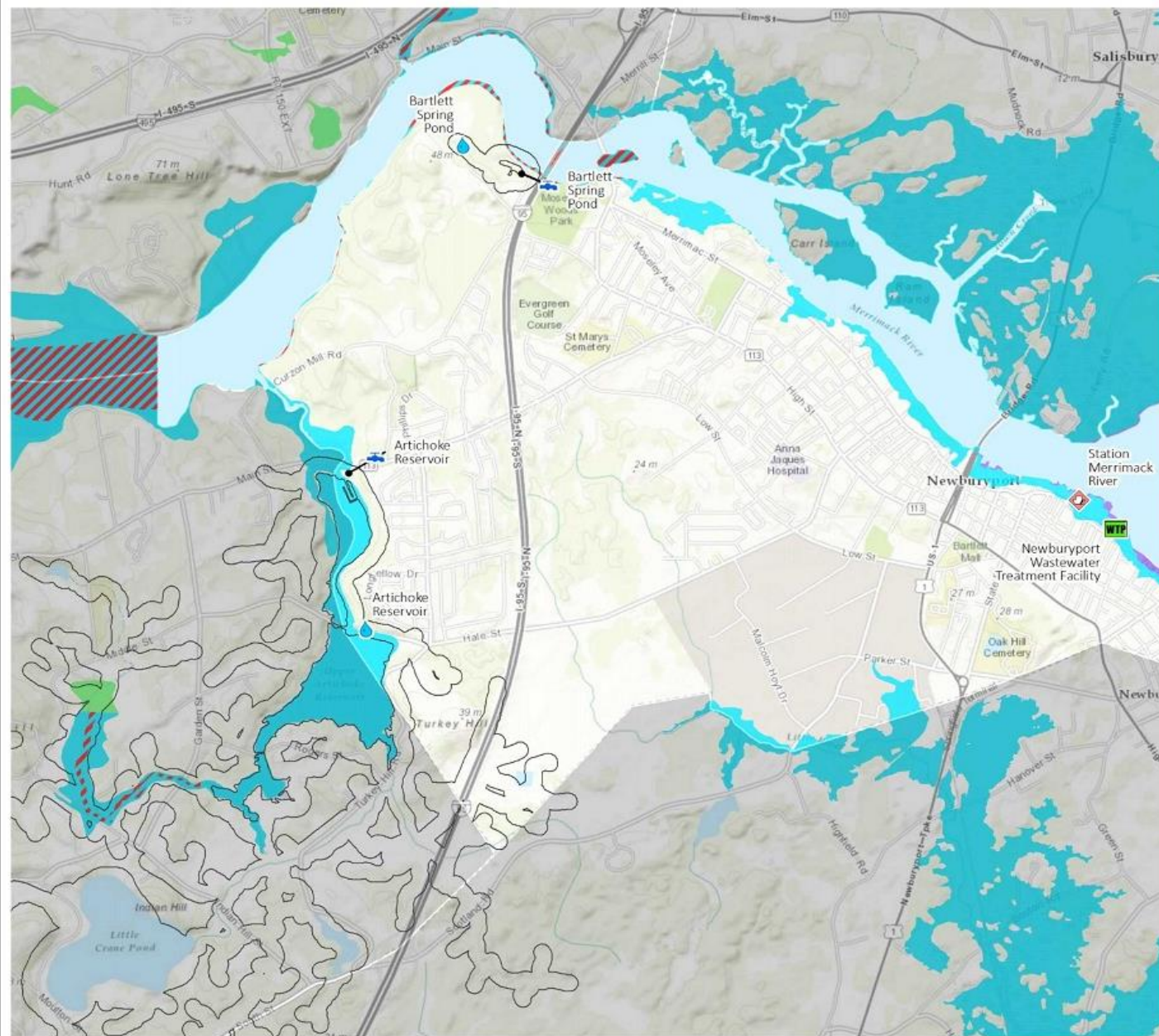
Concerns: coastal, riverine, and stormwater flooding- the historic downtown and the industrial park.



FLOOD HAZARD MAP FOR NEWBURYPORT (CREDIT: TETRA TECH)

Critical Facilities within FEMA Flood Hazard Areas in Newburyport

DRAFT



LEGEND

Critical Facilities

- Public Water Supply Source - Surface Water
- U.S. Coast Guard Base
- Wastewater Treatment Plant
- Water Supply Protection Area
- Facility Outline

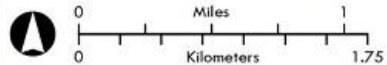
FEMA Flood Zones*

- A: 1% Annual Chance of Flooding, No BFE**
- AE: 1% Annual Chance of Flooding, with BFE**
- AE: Regulatory Floodway
- VE: Coastal Flood Zone with Velocity Hazard, with BFE**

*Mapped Using Current Sea Level

**BFE = Base Flood Elevation

For planning purposes only. Flood hazard area data courtesy of Federal Emergency Management Agency (FEMA). These data represent the effective flood zones published as of 7/21/2014. Please see report for facility data sources and processing steps. Map last updated 8/27/2015.

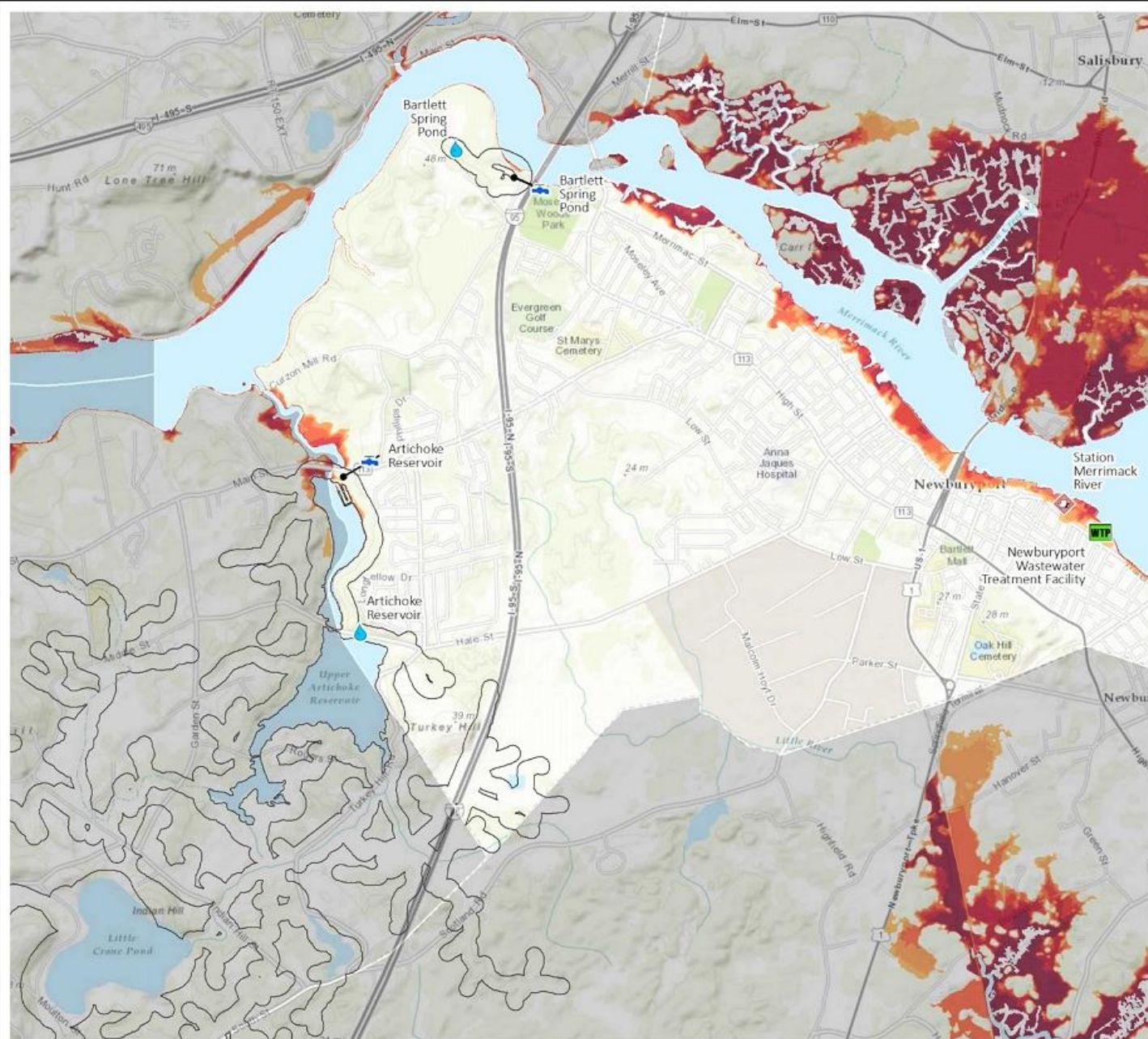


Basemap Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Map coordinate system: North American Datum of 1983, Massachusetts State Plane Coordinate System, Mainland Zone (FIPS zone 2001), meters

Sea Level Rise Inundation of Critical Facilities in Newburyport

DRAFT



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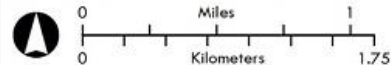
Critical Facilities

- Public Water Supply Source - Surface Water
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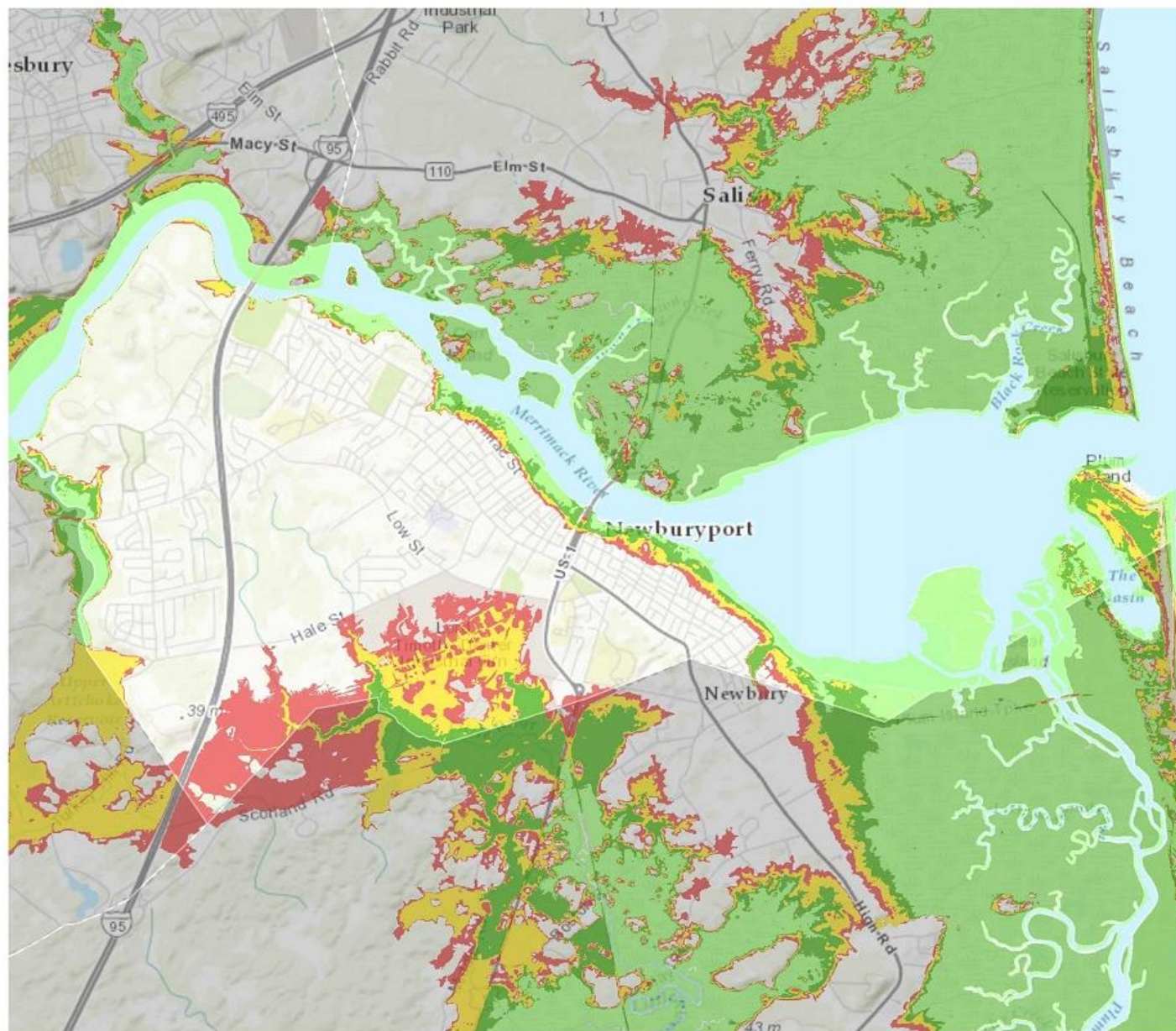
Potential Extent of Mean Higher High Water (MHHW) with Sea Level Rise

- MHHW + 1 ft Sea Level Rise
- MHHW + 2 ft Sea Level Rise
- MHHW + 3 ft Sea Level Rise
- MHHW + 4 ft Sea Level Rise
- MHHW + 5 ft Sea Level Rise
- MHHW + 6 ft Sea Level Rise

For planning purposes only. Sea level rise data courtesy of National Oceanic and Atmospheric Administration Coastal Services Center, January 2013. Please see report for facility data sources and processing steps. Map last updated 8/27/2015.



Basemap Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
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LEGEND

Hurricane Surge Scenarios*

- Category 1
- Category 2
- Category 3
- Category 4

*Mapped Using Current Sea Level

For planning purposes only. Hurricane surge data courtesy of U.S. Army Corps of Engineers, October 2013. Please see report for processing steps. Map last updated 8/31/2015.



Basemap Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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Union of Concern Scientists & World Resource Institute

Rising Tide National Summit



Bipartisan group of mayors from coastal communities across the US meet in Oct. 2015 in Hampton, NH

“We need to work together; local communities, regional communities, and at a state and federal level to help all of our communities move forward and be prepared for the next event.”
Mayor Donna Holaday

Support Local Climate Resilience: Lessons from the Rising Tides Summit

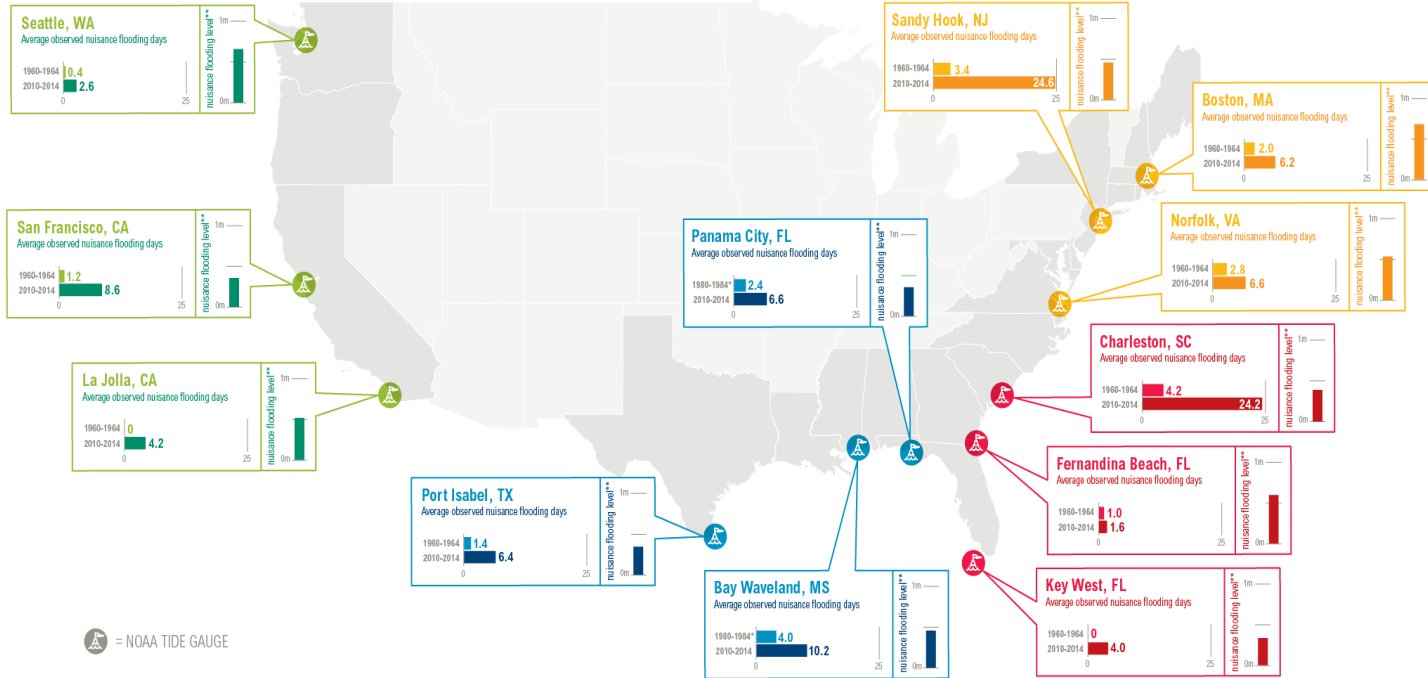
<http://www.wri.org/publication/federal-climate-resilience>

RIISING TIDES IN THE UNITED STATES

Coastal flooding and sea level rise threaten millions of Americans. The Rising Tides Summit brings together a bipartisan group of local leaders and federal officials to tackle this important issue.

FOR MORE INFORMATION:
Forbes Tompkins
ftompkins@wri.org

risingtides2015.com
#risingtides2015



The impacts of coastal flooding and sea level rise are already being felt by coastal communities across the United States. Coastal shoreline counties are home to more than 123 million Americans and account for nearly half the U.S. GDP. Homes, property and critical infrastructure within these communities face a growing threat from coastal flooding as sea levels continue to rise.

According to a 2014 NOAA report, the frequency of days with "nuisance flooding," or flooding that causes road closures, overwhelmed storm drains and other public inconveniences, has increased dramatically in many U.S. coastal cities since the mid-1960s. This trend provides an indicator that coastal communities are being more and more impacted by rising seas in the absence of sufficient action.

A bipartisan group of more than 35 elected officials representing all three coasts will meet in Hampton, N.H. to discuss the impacts of coastal flooding, share best practices and lessons learned to protect and prepare for rising tides, and engage federal officials from the National Oceanic and Atmospheric Administration, Federal Emergency Management Administration, United States Army Corp of Engineers and Department of Defense around the need for additional support and vertically integrated efforts to address the issue.

WEST COAST

GULF COAST

SOUTHEAST

NORTH ATLANTIC

Located fewer than 3 feet above current sea level

Located fewer than 3 feet above current sea level

Located fewer than 3 feet above current sea level

Located fewer than 3 feet above current sea level



* Earliest 5-year average of hourly tide gauge data available
** The "nuisance flooding level" is the water level above the Mean Higher High Water (MHHW) mark that results in nuisance flooding at a given location. This threshold is determined by NOAA for individual NOAA tide gauges.

Sources: Climate Central, *Surging Seas 2.0* (<http://sealevel.climatecentral.org/>); National Oceanic and Atmospheric Administration, *Sea Level Rise and Nuisance Flood Frequency Changes around the United States* (https://hubsandcurrents.noaa.gov/publications/NOAA_Technical_Report_NOS_COOPS_073.pdf); National Oceanic and Atmospheric Administration, *State of the Coast* (<http://stateofthecoast.noaa.gov/>)

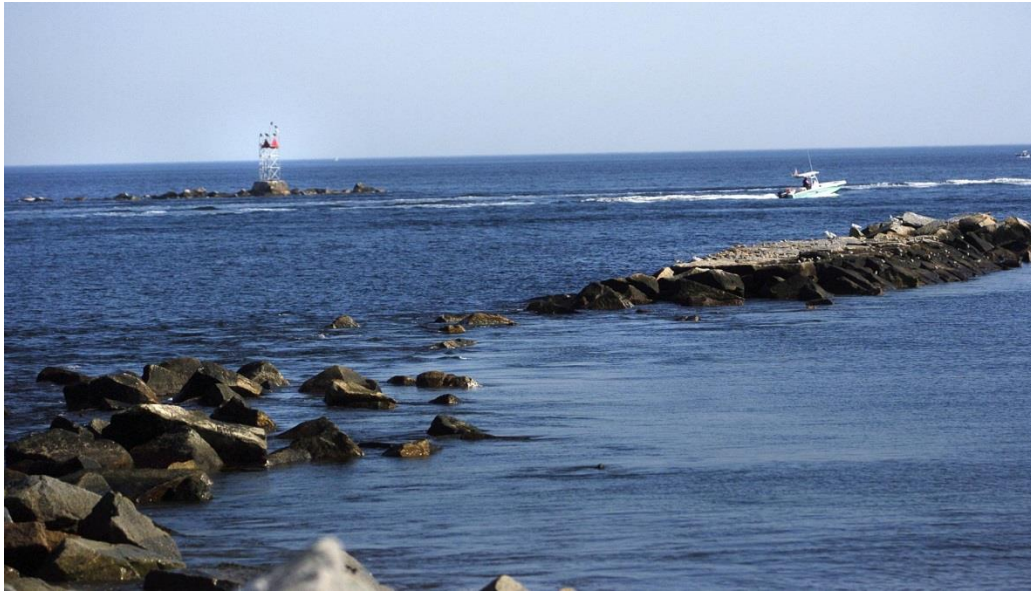
Roadmap to Support Local Climate Resilience: Lessons from the Rising Tides Summit

- Increase Incentives for Pre-Disaster Resilience
- Advance Integration of Resilience into Planning, Design, Management, and Investment
- Improve Interagency and Intergovernmental Coordination and Support
- Prioritize Pre-Disaster Support for Vulnerable Populations and Most At-Risk Communities
- Expand Public-Private Partnerships (PPPs) to Supplement Government Resilience Efforts
- Promote Nature-based and Multi-Benefit Resilience Initiatives
- Enhance Disaster Resilience-focused Metrics and Economic Impact Assessments
- Enrich Usefulness of Resilience-related Data to Increase Public Awareness

Self-Help Efforts to Address Coastal Flooding

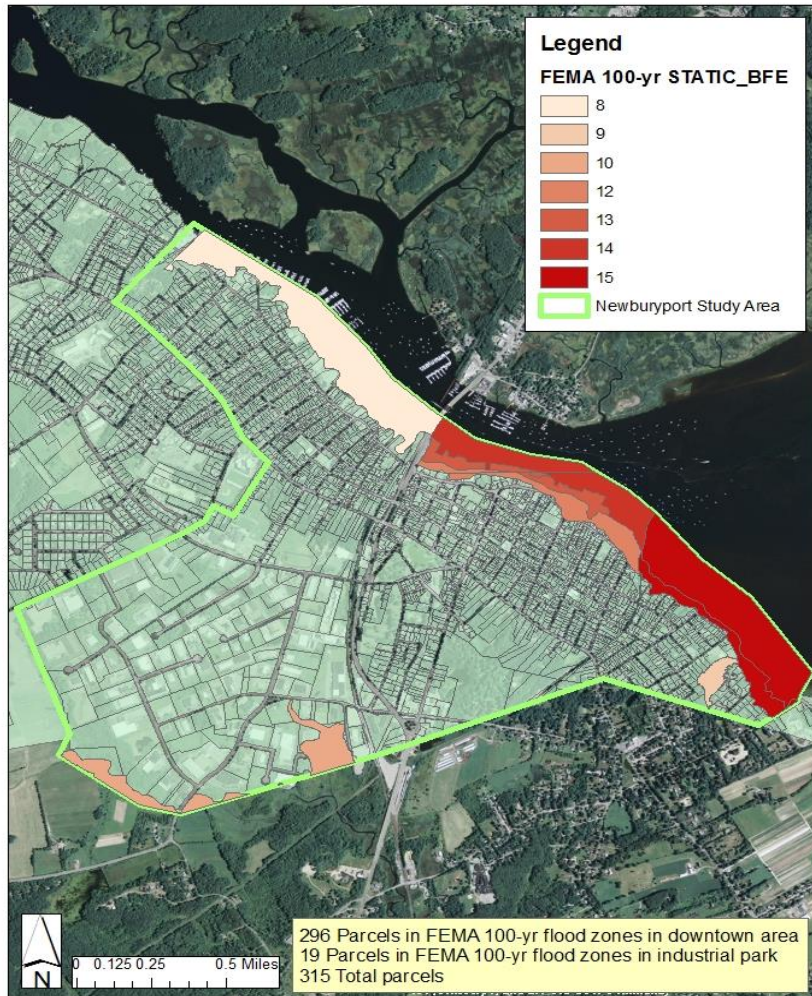


North & South Jetty Repairs



Ad hoc Resiliency Group Formed 2016

Newburyport COAST Study Area



- Working with Great Marsh Resiliency Grant & Federal US & Wildlife 'Sandy' grant
- Identifying high risk vulnerable sites
- Creating a resiliency plan for Newburyport & Plum Island



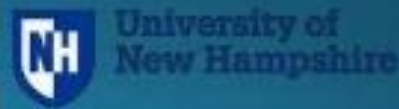
Dune Restoration on Plum Island



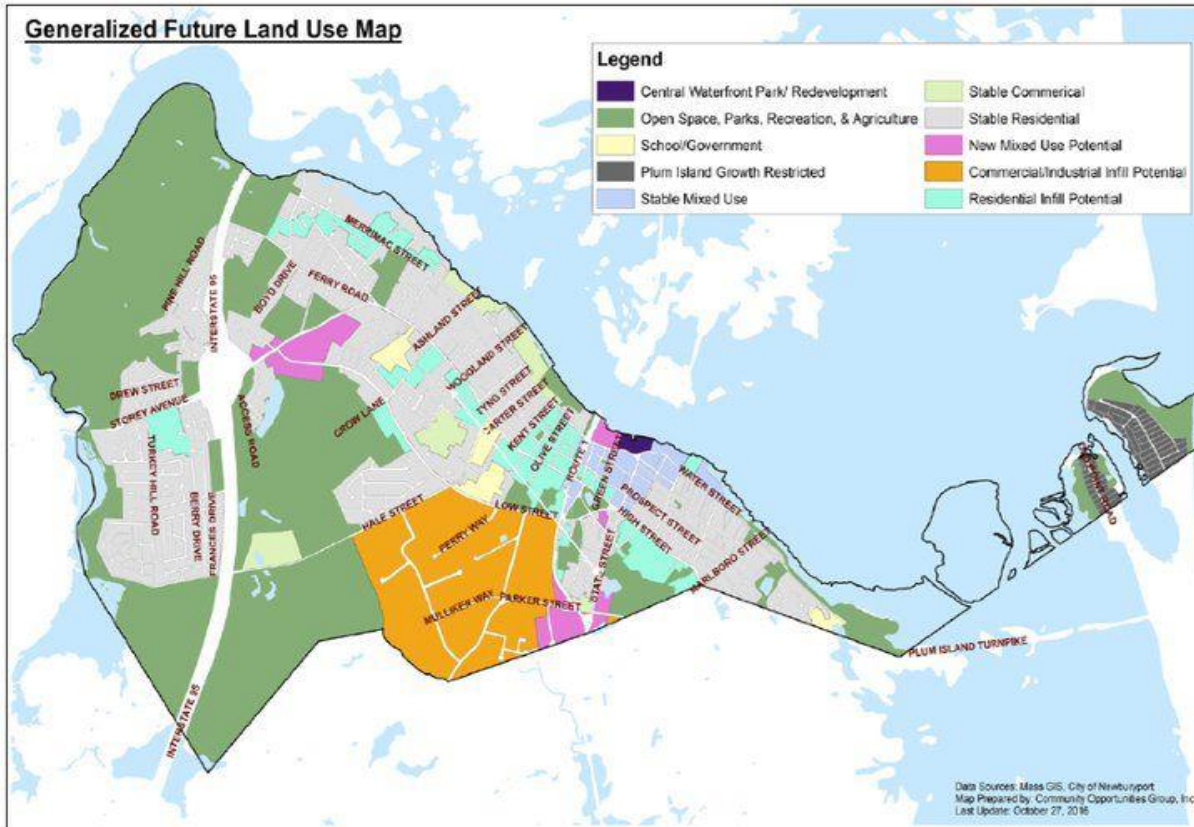
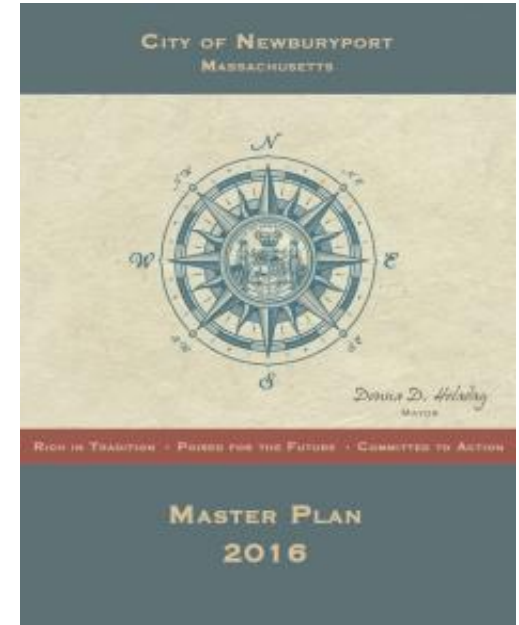
Great Marsh Adaptation Planning

Implications for Quality of Life in our Communities

Salisbury
Newburyport
Newbury



Consistency in All Planning Tools



Merrimack Valley Region Multi-Hazard Mitigation Plan Update

Participating Communities

- Town of Andover
- Town of Boxford
- Town of Georgetown
- Town of Groveland
- City of Haverhill
- City of Lawrence
- Town of Merrimac
- City of Methuen
- Town of Newbury
- City of Newburyport
- Town of North Andover
- Town of Rowley
- Town of Salisbury
- Town of West Newbury

With Assistance of
Merrimack Valley Planning Commission
 160 Main Street
 Haverhill, Massachusetts 01830

April 2016

Municipal Vulnerability Preparedness grant program

\$16,000 grant to Newburyport to complete Resiliency Planning with Support from Community Resilience Building Organization



Our City has the opportunity to be certified as an MVP community and eligible for follow-up grant funding and other opportunities



Closing thoughts

- Communities need help, support and partnerships to move efforts forward
- We need to strategize locally & regionally on coastal development
- Continue and enhance programs to educate the public
- Convene public official summits
- Create strong public- private partnerships
- Celebrate and publicized successes