

# Massachusetts Coastal Resilience Grants Supporting Local Adaptation Efforts



MA Water Resources  
Commission Meeting  
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Management



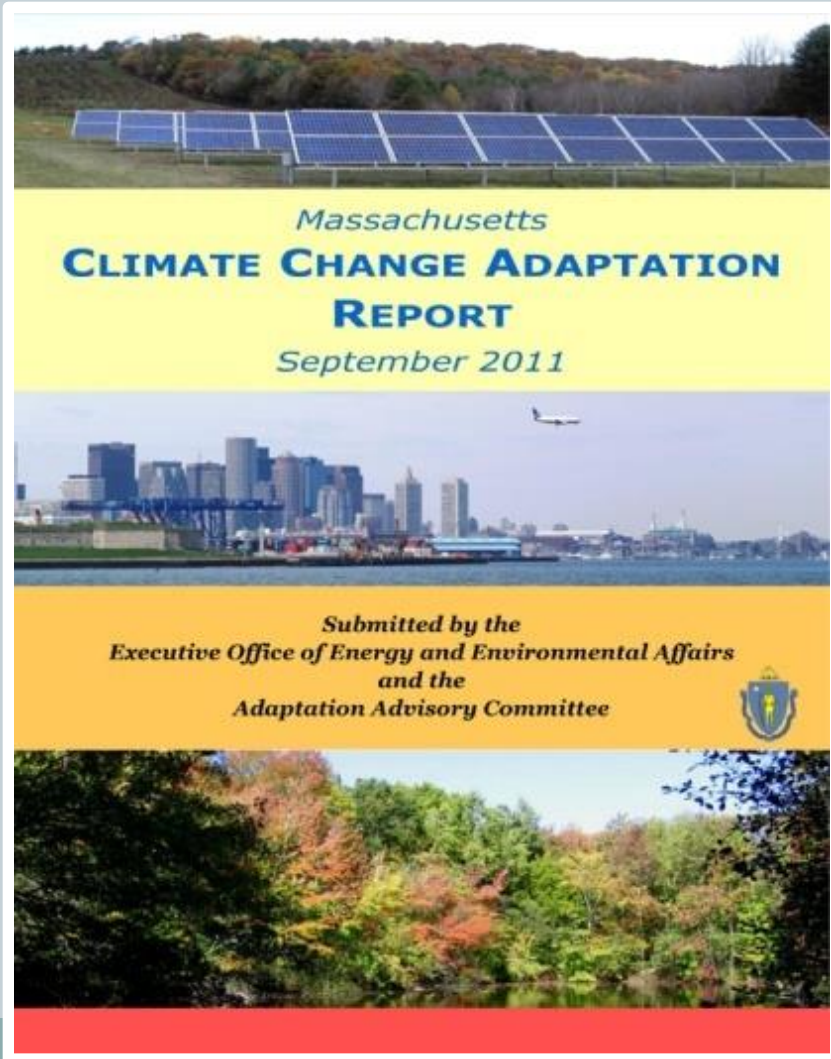
# Coastal Resilience Grant Program



Provides technical and financial assistance to coastal communities to reduce risks associated with coastal storms, flooding, erosion, and sea level rise through innovative and transferable local initiatives.

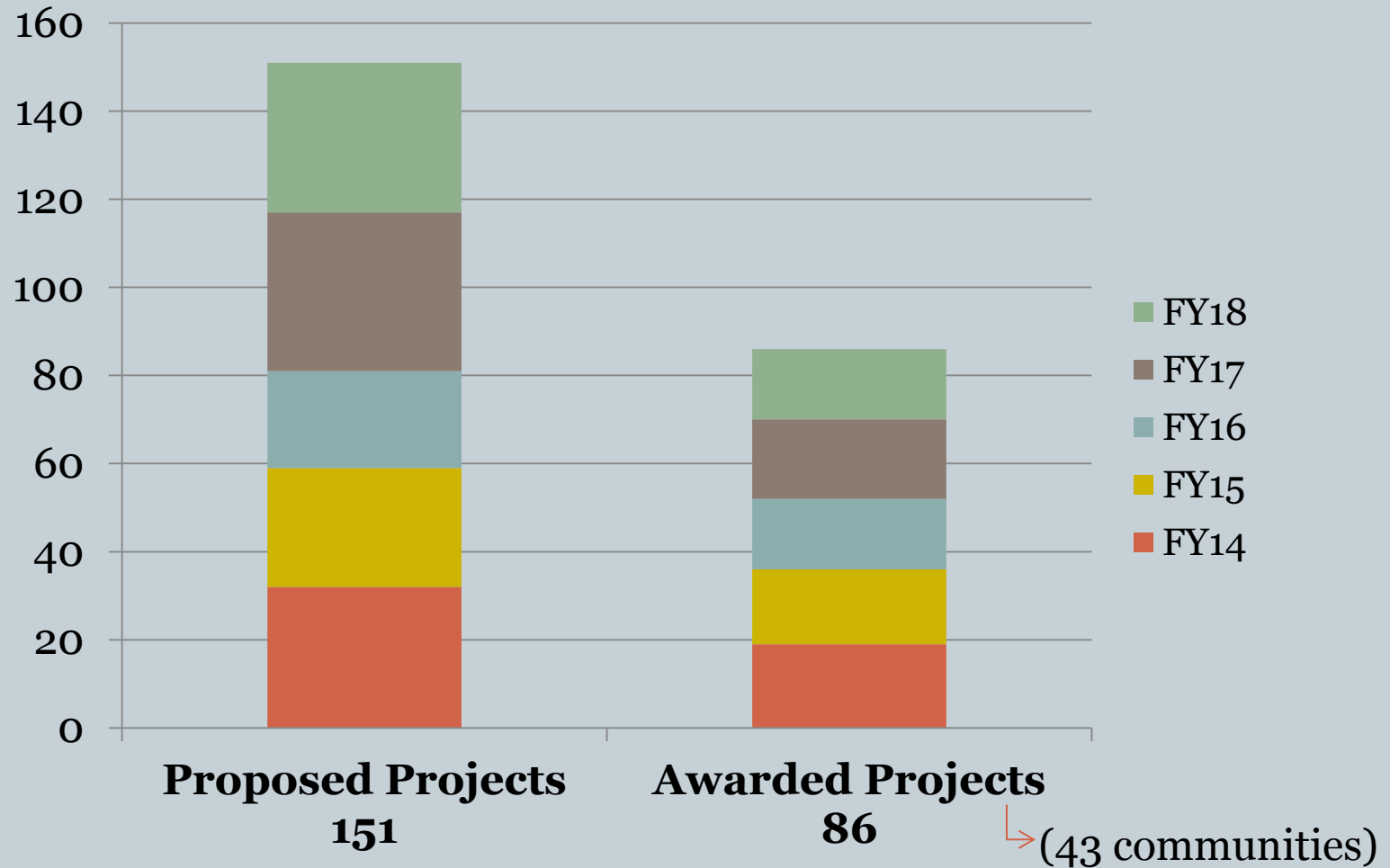


# Support for local adaptation

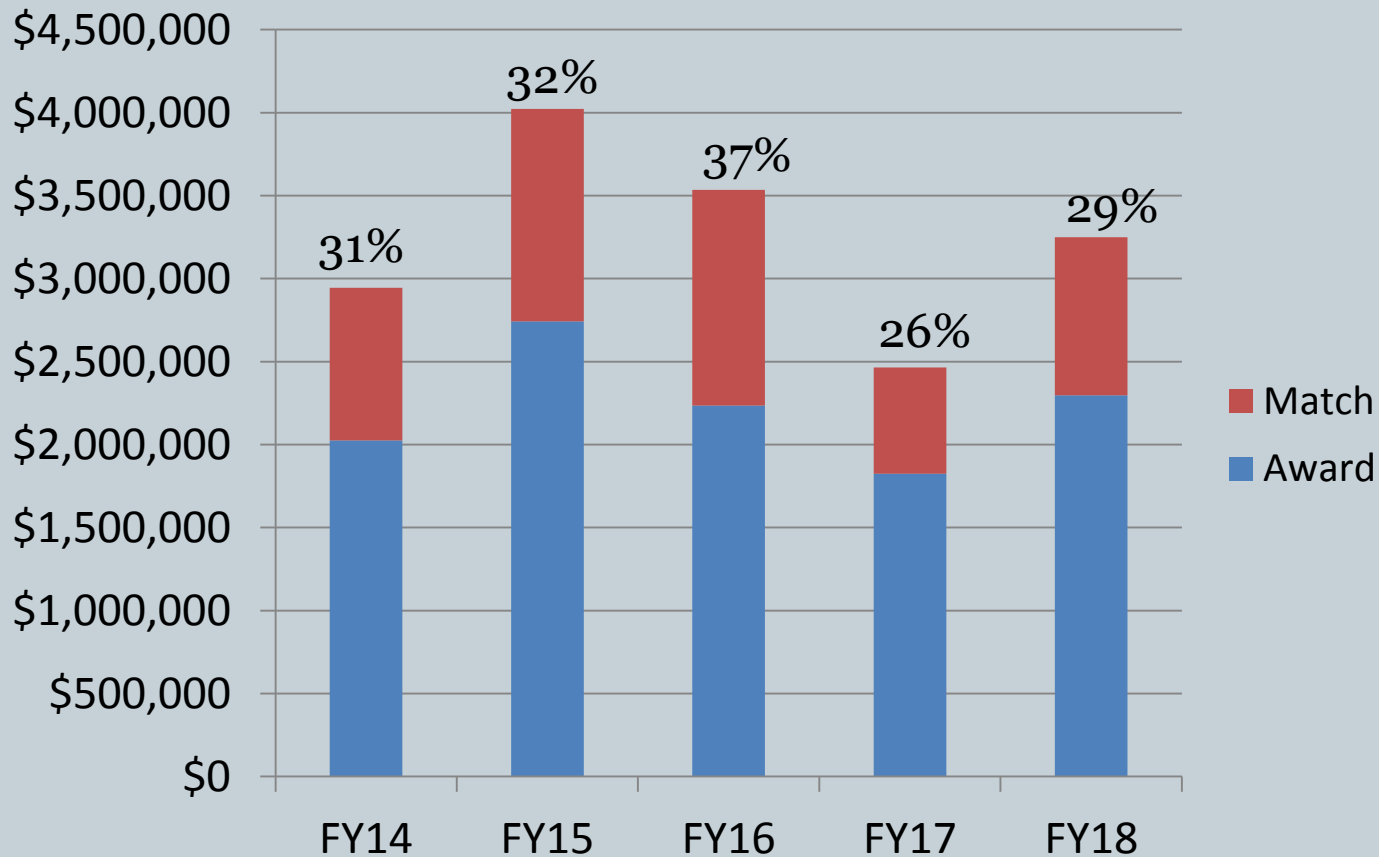


Fiscal Year	State Capital Funding	
	Requested (\$M)	Awarded (\$M)
FY 2014	\$4.8	\$2.0
FY 2015	\$5.2	\$2.7
FY 2016	\$3.0	\$2.2
FY 2017	\$5.1	\$1.8
FY 2018	\$5.6	\$2.3
<b>Total</b>	<b>\$23.7+</b>	<b>\$11+</b>

# Level of interest



# Investing local staff time and resources





# Eligibility



## Applicants:

- 78 coastal cities and towns (#1-5)
- Nonprofits with vulnerable coastal property that is open and accessible to the public (#5)

## Project Types:

1. Vulnerability and Risk Assessment
2. Public Education and Communication
3. Local Bylaws, Adaptation Plans, Other Management Measures
4. Redesigns and Retrofits
5. Natural (green infrastructure) Storm-damage Protection

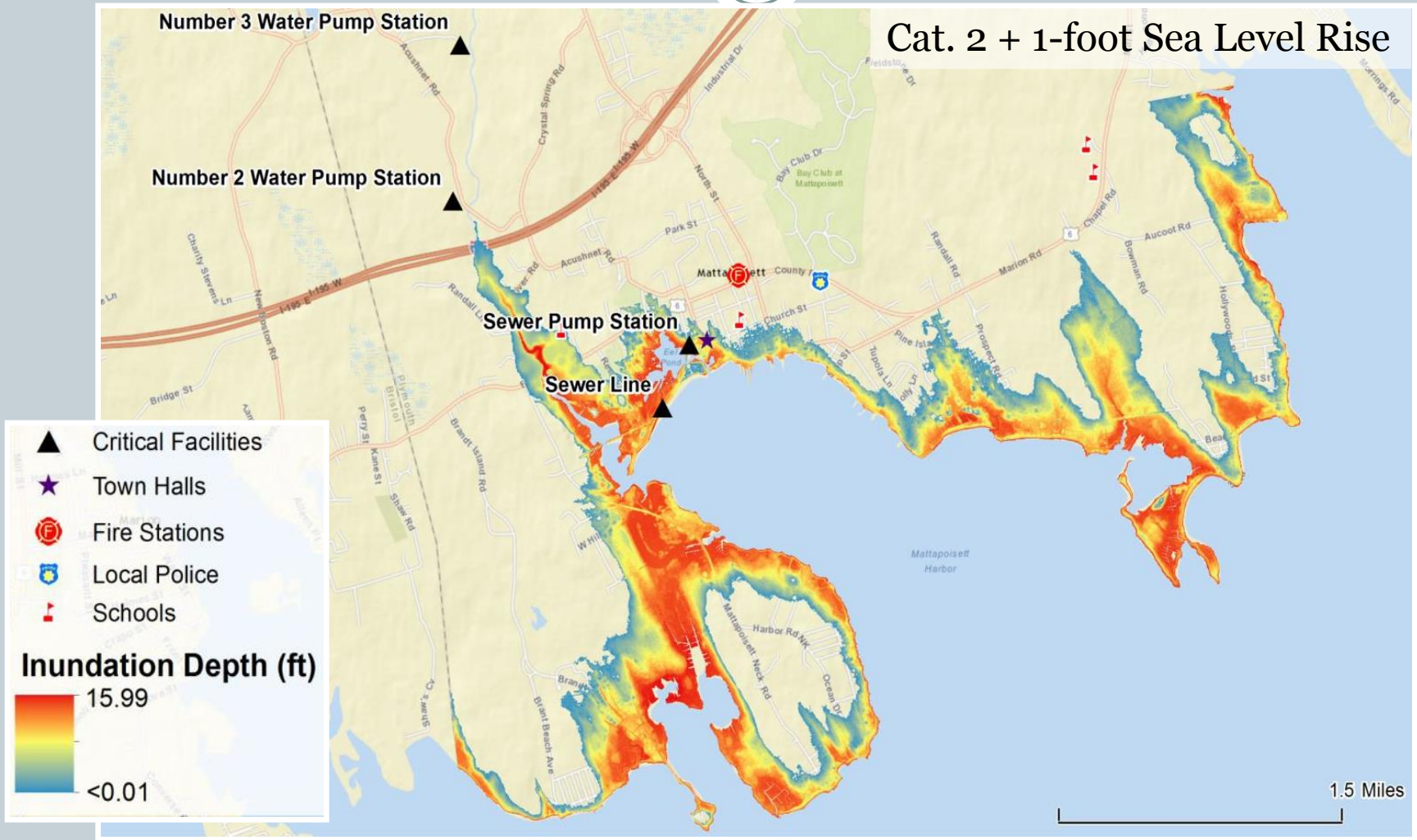
# Water/Wastewater Infrastructure projects



- Gloucester – Floodproofing Redesign and Retrofits at Five Pump Stations (\$97,500), Little River Floodplain and Habitat Restoration (\$400,000)
- Manchester – Sawmill Brook Culvert and Green Infrastructure Analysis: Vulnerability and Required Capacity under Climate Change (\$154,950)
- Marshfield – Assessing Alternatives for Reducing Flooding within Green Harbor River Estuarine System through the Optimization of the Tide Gates Located on Dyke Road (\$71,250)
- Mattapoisett – Protecting Mattapoisett’s Potable Water and Sewer Infrastructure in the Face of Climate Change: Assessing Risk and Identifying Solutions (\$47,791); Addressing Mattapoisett’s Potable Water Infrastructure Vulnerabilities...Pease’s Point Water Main Crossing (\$47,625); final design and permitting (\$67,800)
- New Bedford – Sewer Pump Station Flood Proofing (\$255,000)
- Oak Bluffs – Elevate emergency generator (\$200,000)
- Wareham – Wastewater Infrastructure Vulnerability Assessment and Emergency Response Plan (\$93,750); Permit-level designs for retrofit measures at three critical pump stations (\$150,000); final design and permitting (\$101,100)
- Weymouth – Puritan Road Flood Mitigation and Ecological Resilience: watershed modeling and alternatives analysis (\$75,000), design and permitting (\$51,504), construction (\$397,500)

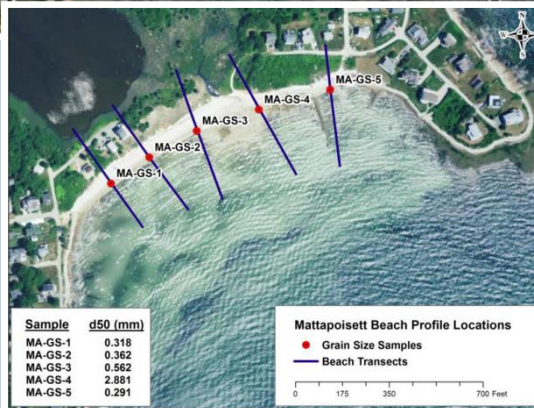
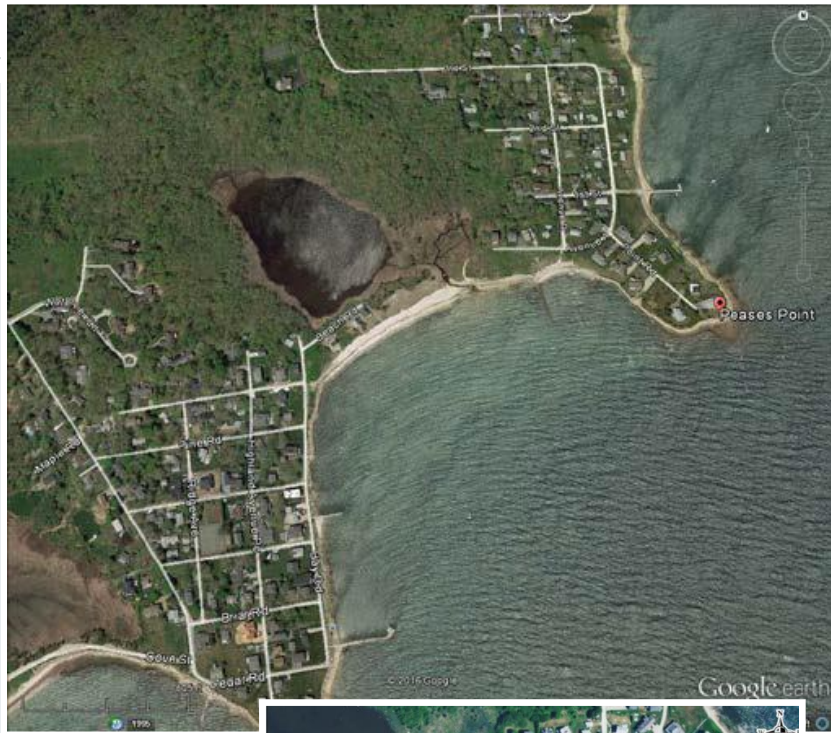
Part of town-wide vulnerability assessment – Winthrop, Quincy, Boston, Chelsea, Beverly, Lynn, Hull, Hingham, Swampscott, Gloucester

# Identify coastal erosion and flooding vulnerabilities and plan for future conditions





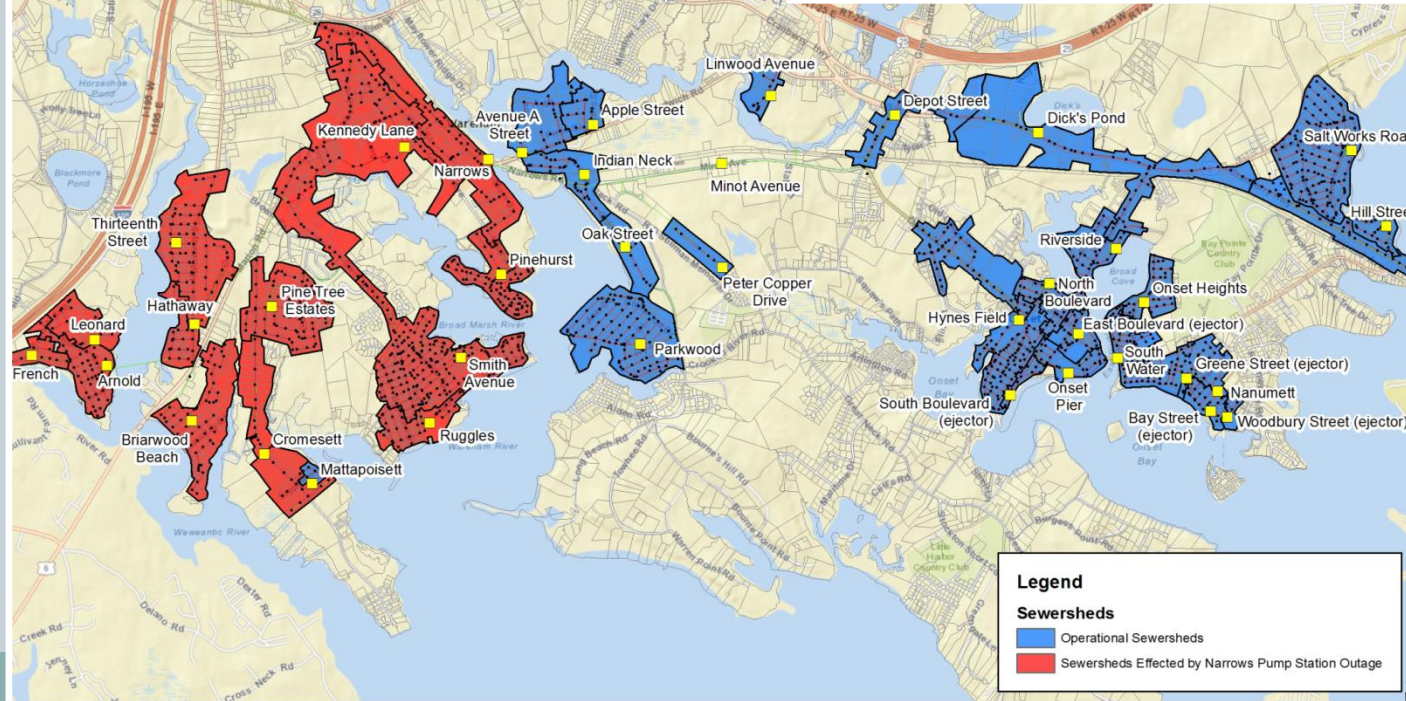
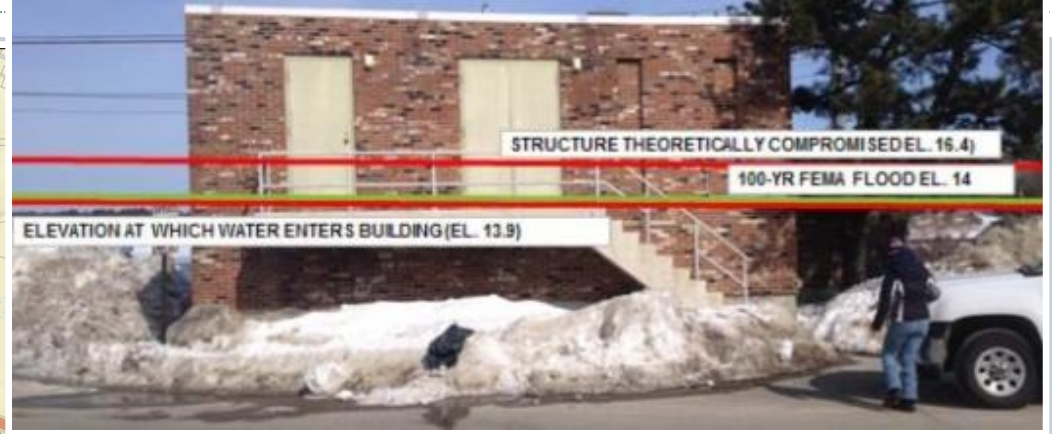
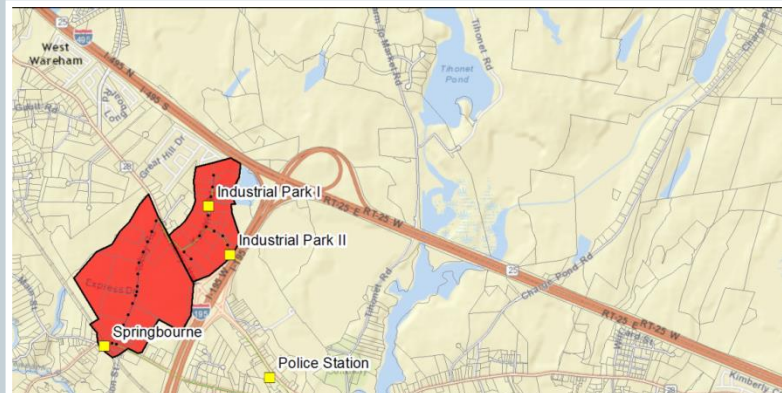
# Protect public health and safety



Water main exposed during June 2013 storm



# Strengthen hazard mitigation approaches to prevent catastrophic flooding impacts



Source: Town of Wareham

# Keep critical facilities online during high water events



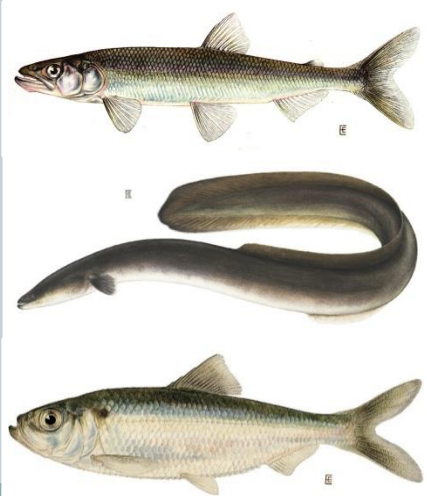
Photo: Marc Drainville



# Re-establish floodplains



**After**



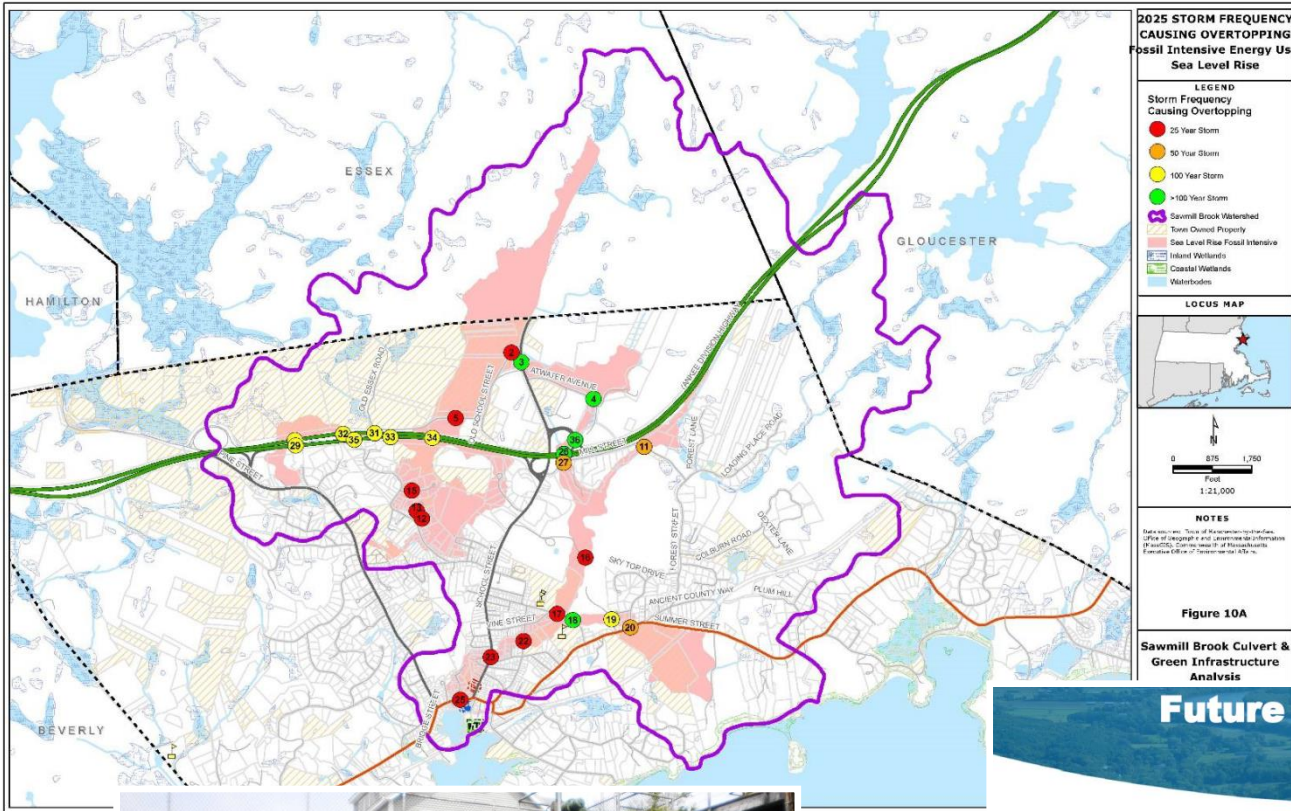


# Enhance tidal exchange



Deteriorating culvert at the end of Puritan Road restricts tidal exchange between Weymouth's Back River and 4+ acre salt marsh



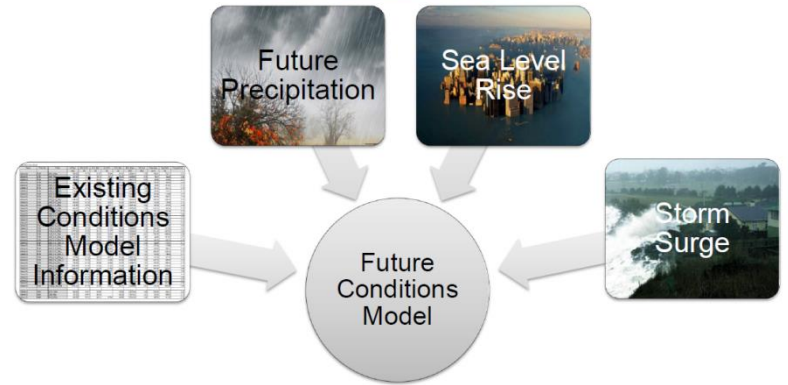


Culverts that will overtop during specific flood events in the year 2025 with a fossil intensive precipitation event and sea level rise

File: 0-1023(VA)Manchester(VA)



### Future Conditions Model Inputs



**2025 2050 2100**

# Coming Soon:



Downscaled climate change projections for temperature, precipitation and sea level rise:

- Temperature and Precipitation for annual and seasonal temporal scales provided at statewide, county, and major basin scales
- Sea Level Rise projections provided for the coastline at established tide gauge locations (Boston Harbor, Buzzards Bay, Nantucket, Newport, RI, Sandwich, Seavey Island, NH, and Woods Hole)