



The Climate Risk in the Seacoast: Assessing Vulnerability of Municipal Assets and Resources to Climate Change (C-RiSe) project provides maps and assessments of flood impacts to infrastructure and natural resources in the coastal Great Bay region associated with projected increases in storm surge, sea level, and precipitation.

TOWN OF MADBURY

Map 12: Climate Ready Culverts
Sea-Level Rise + Storm Surge 1.7', 4.0', 6.3'

CRiSe Culvert/Crossing ID

Grid Key:

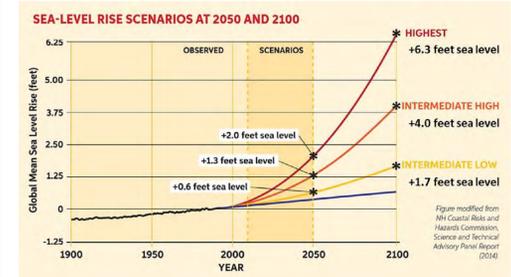
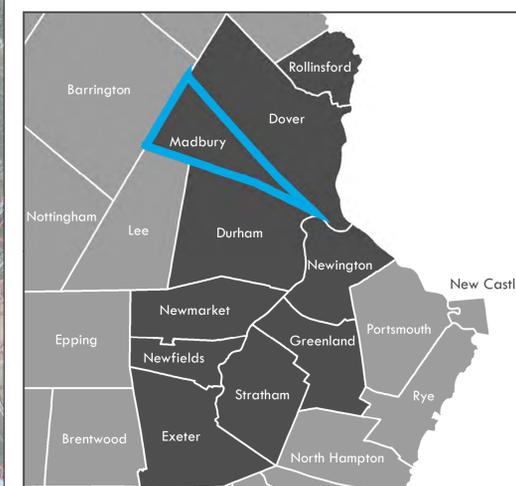
10 -YR Rating	25-YR Rating	10-YR: Rating for the water's surface elevation at the inlet for the 10-yr flood flow
50-YR Rating	100-YR Rating	25-YR: Rating for the water's surface elevation at the inlet for the 25-yr flood flow
		50-YR: Rating for the water's surface elevation at the inlet for the 50-yr flood flow
		100-YR: Rating for the water's surface elevation at the inlet for the 100-yr flood flow

Hydraulic Ranking Key:

- Pass: Headwater stage is below the lowest top of top of culvert at the site
- Transitional: Headwater stage is between the lowest top of culvert and the top of the road
- Fail: Headwater stage overtops the road

Aquatic Organism Passage (AOP) Key

- No AOP
- No AOP - Adult Salmonids
- Reduced AOP
- Full AOP



Sea-Level Rise Scenarios
Please note that the sea-level rise scenarios used in this assessment were derived from the Wake, 2011 report (refer to table of values below from this report). These scenarios were selected prior to the release of the Science and Technical Advisory Panel Report to the N.H. Coastal Risks & Hazards Commission, in August, 2014 [1]. While slightly different than the scenarios cited in that report, they yield coverage estimates that are within the mapping margin of error.

[1] Wake CJ, Kirshen P, Huber M, Knott K, and Stompono M (2014) Sea-level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire: Analysis of Past and Projected Future Trends, prepared by the Science and Technical Advisory Panel (STAP) for the New Hampshire Coastal Risks and Hazards Commission.

	2050		2100	
	Lower	Higher	Lower	Higher
Current Elevation of MHHW ^a	4.4	4.4	4.4	4.4
100-Year Flood Height	6.8	6.8	6.8	6.8
Subsidence	0.0	0.0	0.0	0.0
Elastic SLR	1.0	1.7	2.5	6.3
Total Stillwater Elevation^c	12.2	12.9	13.7	17.5

a - NAVD: North American Vertical Datum of 1988
b - MHHW: Mean Higher High Water at Fort Point, NH
c - Total Stillwater Elevation may not equal total of components due to rounding.

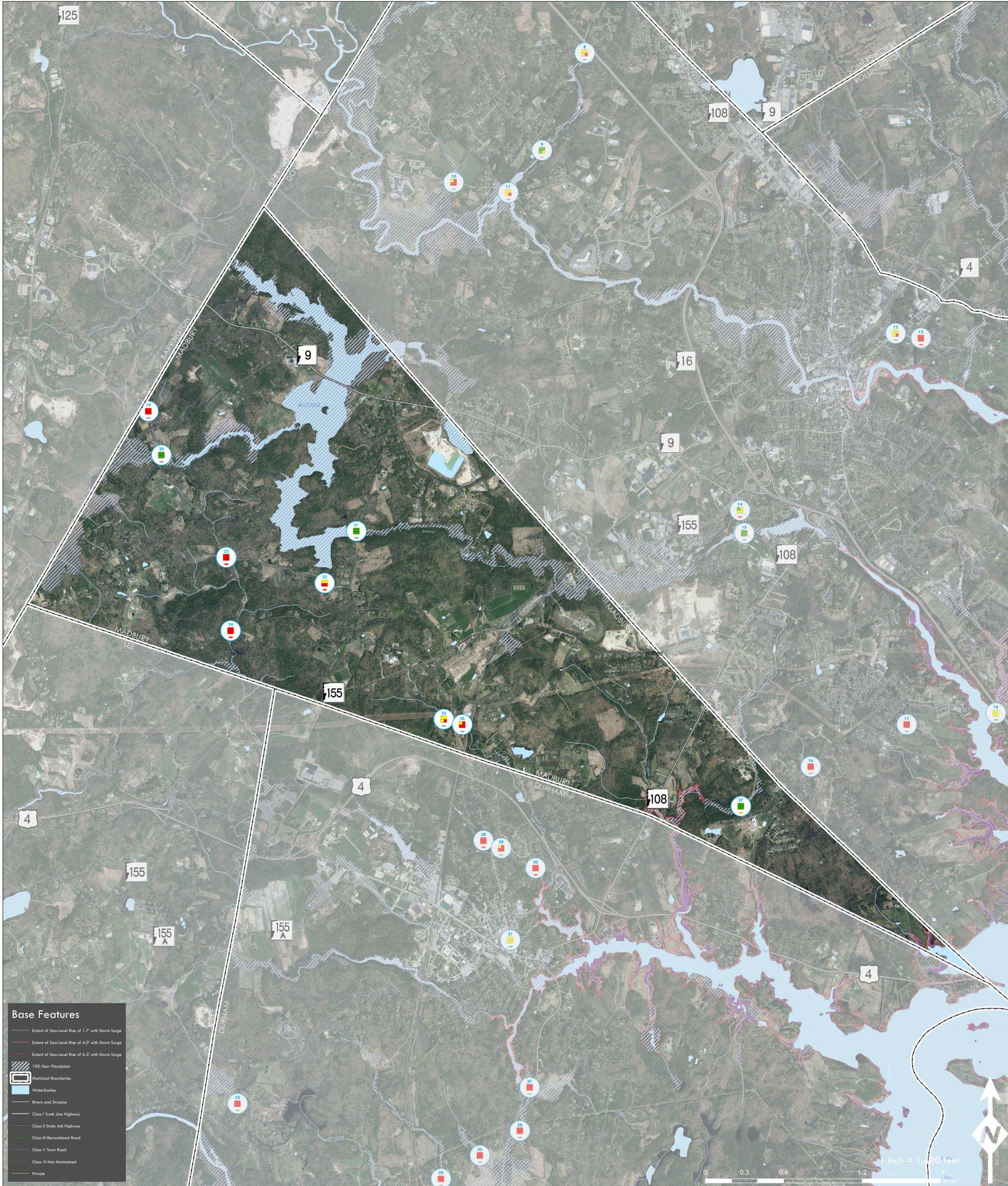
Table 13. Estimates (in feet) of future 100-year flood Stillwater elevations at Fort Point under lower and higher emission scenarios (relative to NAVD88) based on the statistical analysis presented in this report.

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Path: M:\Region\Project_Special_Merit\Mapping\Culverts_4_6.mxd

Data Sources:
Data sets were retrieved from the NH GRANIT database, December, 2015. Digital data in NH GRANIT represent the efforts of the contributing agencies to record information from the cited source materials. Earth Systems Research Center (ESRC), under contract to the Office of Energy & Planning (OEP), and in consultation with cooperating agencies, maintains a continuing program to identify and correct errors in these data. Neither OEP nor ESRC make any claim as to the validity or reliability or to any implied uses of these data.

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Base Features

- Extent of Sea-Level Rise of 1.7' with Storm Surge
- Extent of Sea-Level Rise of 4.0' with Storm Surge
- Extent of Sea-Level Rise of 6.3' with Storm Surge
- 100-Year Floodplain
- Municipal Boundaries
- Waterbodies
- Rivers and Streams
- Class I Trunk Line Highway
- Class II State Aid Highway
- Class III Recreational Road
- Class V Town Road
- Class VII Not Maintained
- Private

Culvert Crossing ID & Location	*Precipitation Flood Flow				***Aquatic Organism Passage (AOP) Rating
	10-YR	25-YR	50-YR	100-YR	
	**Hydraulic Rating				
#19: Nute Road over Unnamed Tributary	Fail	Fail	Fail	Fail	Reduced AOP
#20: Nute Road over Bellamy River	Pass	Pass	Pass	Pass	Reduced AOP
#21: Mill Hill Road over Bellamy River	Pass	Pass	Pass	Pass	Reduced AOP
#22: Hayes Road over Oyster River	Fail	Fail	Fail	Fail	Reduced AOP
#23: Hayes Road	Transitional	Transitional	Fail	Fail	No AOP
#24: Cherry Lane over Oyster River	Fail	Fail	Fail	Fail	No AOP
#25: Sarah Paul Hill over Beards Creek	Transitional	Transitional	Transitional	Fail	No AOP
#26: Madbury Rd over Littlehole Creek	Transitional	Fail	Fail	Fail	Reduced AOP
#27: Freshet Road over Johnson Creek	Pass	Pass	Pass	Pass	No AOP - Adult Salmonid