



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.

CLIMATE READY CULVERTS: TOWN OF GREENLAND

Extent of Projected Tidal Flooding
Sea-Level Rise 1.7', 4.0', 6.3'

CRiSe Culvert/Crossing ID

Grid Key:

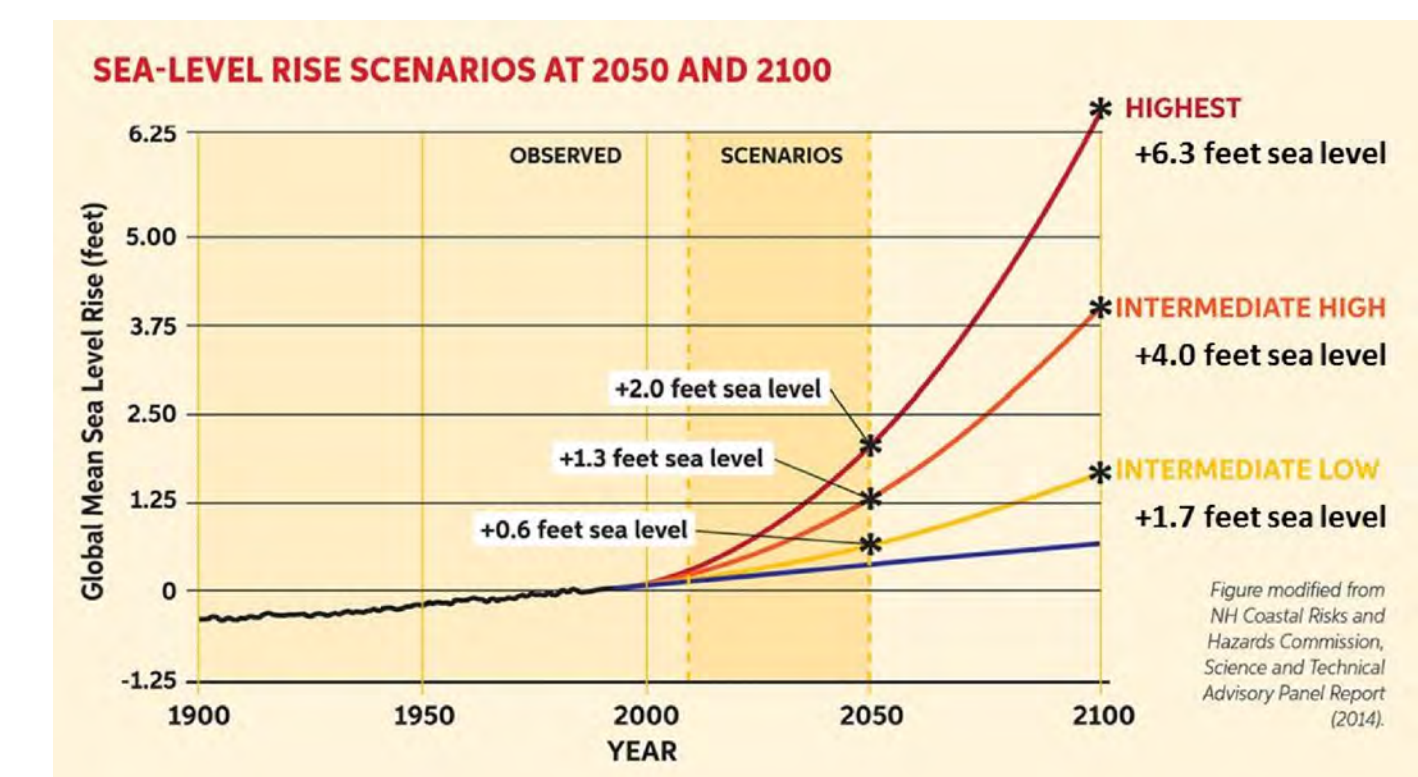
10-YR Rating	25-YR Rating	50-YR Rating	100-YR Rating
10-YR: Rating for the water's surface elevation at the inlet for the 10-yr flood flow	25-YR: Rating for the water's surface elevation at the inlet for the 25-yr flood flow	50-YR: Rating for the water's surface elevation at the inlet for the 50-yr flood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

Hydraulic Ranking Key:

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

Aquatic Organism Passage (AOP) Key

Red circle with slash	No AOP
Yellow circle with slash	No AOP - Adult Salmonids
Grey circle with slash	Reduced AOP
Green circle with slash	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, C.F., Kintner, P., Huber, M., Knott, K., and Stomporo, 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,b}	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
Eustatic SLR	1.0	1.7	2.5	6.3
Total Stillwater Elevation^{c,c}	12.2	12.9	13.7	17.5

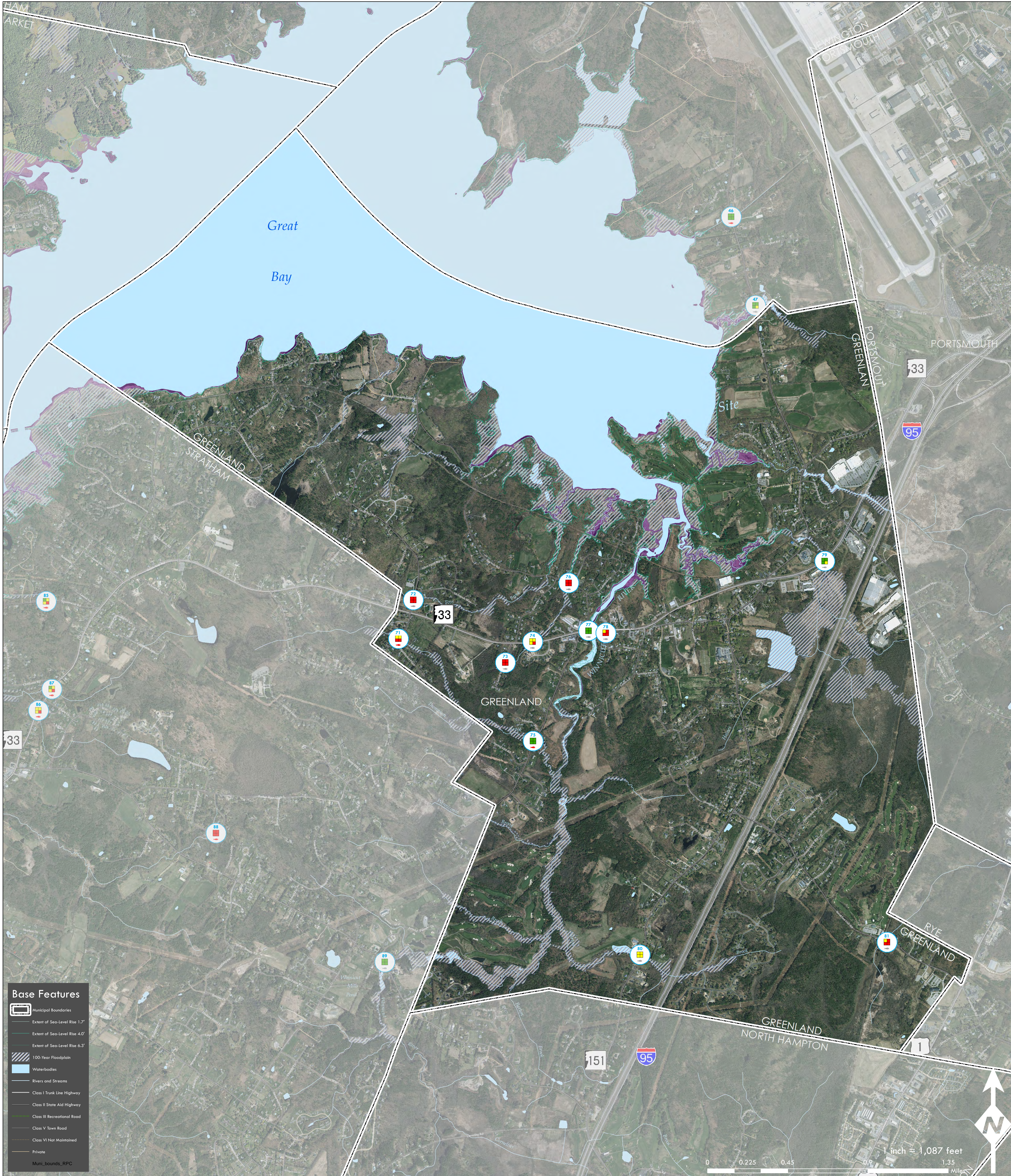
a - NAVD: North American Vertical Datum of 1988
b - MHHW: Mean Higher High Water at Fort Point, NH
c - Total Stillwater Elevations may not equal total of components due to rounding.
Table 13. Estimates (in feet) of future 100-year flood stillwater elevations at Fort Point under lower and higher emission scenarios (relative to NAVD83) based on the statistical analysis presented in this report.
Notes: C.F. Barkman, E. Baker, S. Hyatt, A. Stone, C. Wynn, S. Douglas (2011) Climate Change in the Portsmouth/Great Bay Region: Past, Present, and Future. Carbon Solutions New England Report for the Great Bay New Hampshire Seacoast.

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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

Black outline	Municipal Boundaries
Light blue shading	Extent of Sea-Level Rise 1.7'
Medium blue shading	Extent of Sea-Level Rise 4.0'
Dark blue shading	Extent of Sea-Level Rise 6.3'
Diagonal hatching	100-Year Floodplain
Blue area	Waterbodies
Blue line	Rivers and Streams
Thick grey line	Class I Trunk Line Highway
Thin grey line	Class II State Aid Highway
Thin grey line	Class III Recreational Road
Thin grey line	Class VI Town Road
Thin grey line	Class VI Not Maintained
Thin grey line	Private
Thin grey line	Muni. bounds, RPC



1 inch = 1,087 feet

