



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.

WATER RESOURCES: TOWN OF GREENLAND

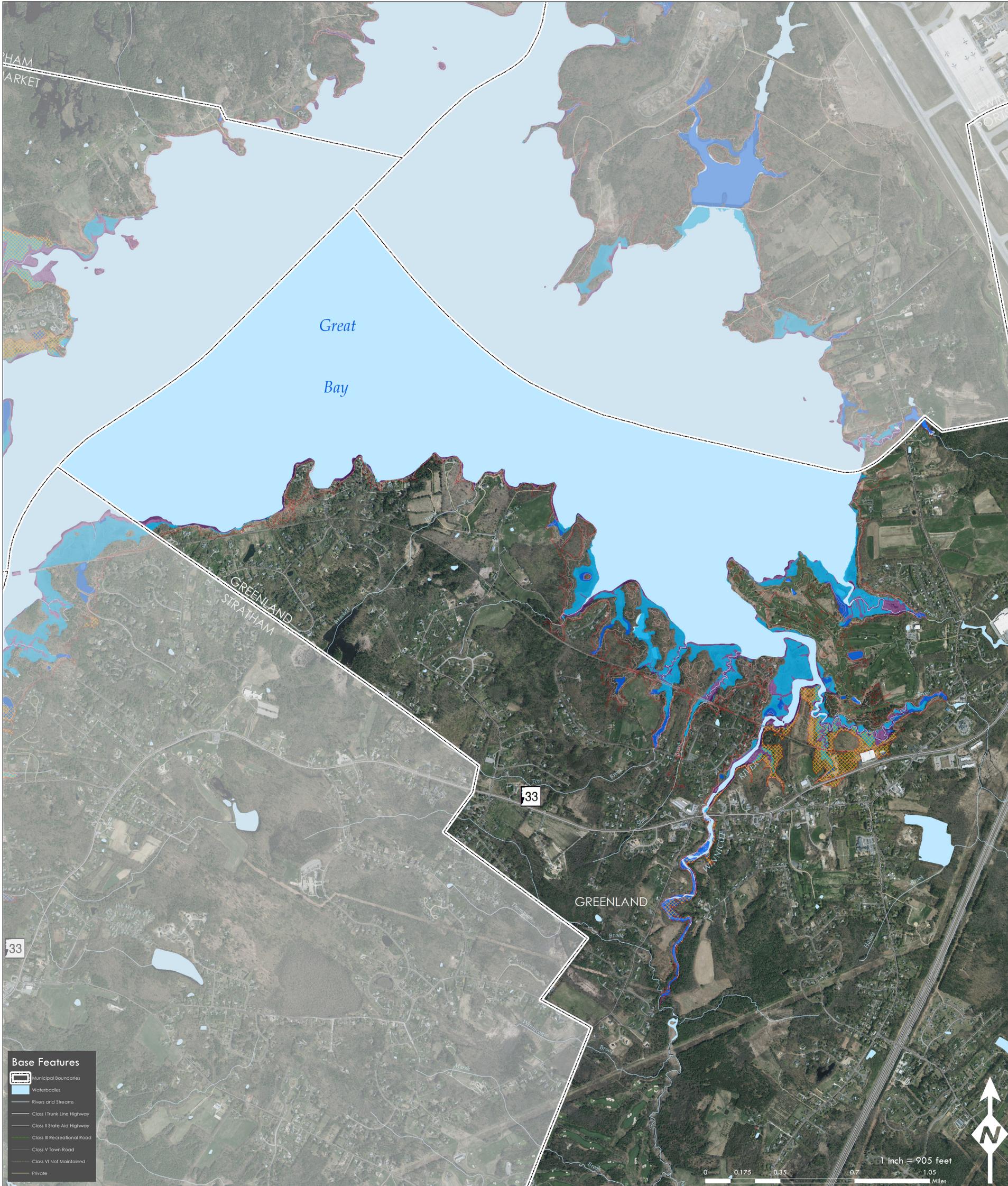
Extend of Projected Tidal Flooding
Sea-Level Rise + Storm Surge 1.7', 4.0', 6.3'

SLR Legend

- 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
- Approximate Mean High High Water Level

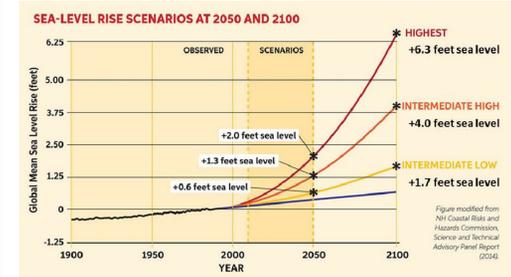
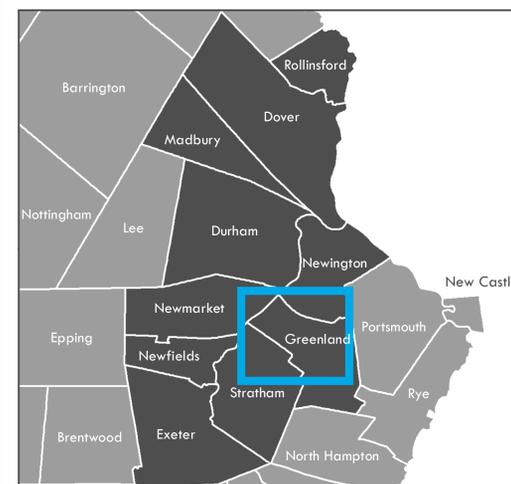
Impact Legend

- Freshwater Wetlands
- Estuarine and Marine Wetlands
- Stratified Drift Aquifers
- Wellhead Protection Areas



Base Features

- 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 VI Not Maintained
- Private



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 Stimpson, 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
Elastic 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 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 NAVD83) based on the statistical analysis presented in this report.

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 Path: M:\Region\Project_Special_Merit\Mapping\Final_Maps_By_Community\Greenland\Greenland_WaterRes_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.

The C-RiSe project is funded by the National Oceanic and Atmospheric Administration under the Coastal Zone Management Act (CZMA) Enhancement Program. Project of Special Merit for FY 2015, authorized under Section 309 of the CZMA (16 U.S.C. § 1458b).

Water Resource Impacts: Town of Greenland				
Resource Type	Name/Type	Sea Level Scenarios		
		1.7 feet	4.0 feet	6.3 feet
Wellhead Protection Areas	Portsmouth Water Works: 60 Freshet Rd	20.90	34.31	54.15
Estuarine and Marine Wetlands	Estuarine and Marine Deepwater	0.86	0.89	0.95
	Estuarine and Marine Wetland	123.49	124.32	125.00
	Freshwater Emergent Wetland	1.86	5.64	7.37
Freshwater Wetlands	Freshwater Forested/Shrub Wetland	9.42	12.88	20.89
	Freshwater Pond	2.01	3.71	4.24
	Lake	0.00	0.00	0.00
	Riverine	0.68	1.18	1.26
Aquifers	Stratified Drift	0.01	0.29	1.22

Water Resource Totals (acres)			
Resource Type	Sea Level Scenarios		
	1.7 feet	4.0 feet	6.3 feet
Wellhead Protection Areas	20.90	34.31	54.15
Estuarine and Marine Wetlands	124.35	125.21	125.95
Freshwater Wetlands	13.97	23.41	33.76
Stratified Drift Aquifers	0.01	0.29	1.22
Total(s) Combined	159.23	183.22	215.08