

Climate Risk in the Seacoast

Assessing Vulnerability of Municipal Assets and Resources to Climate Change



Strafford Regional Planning Commission

Madbury Meeting

Thursday, February 23, 2017

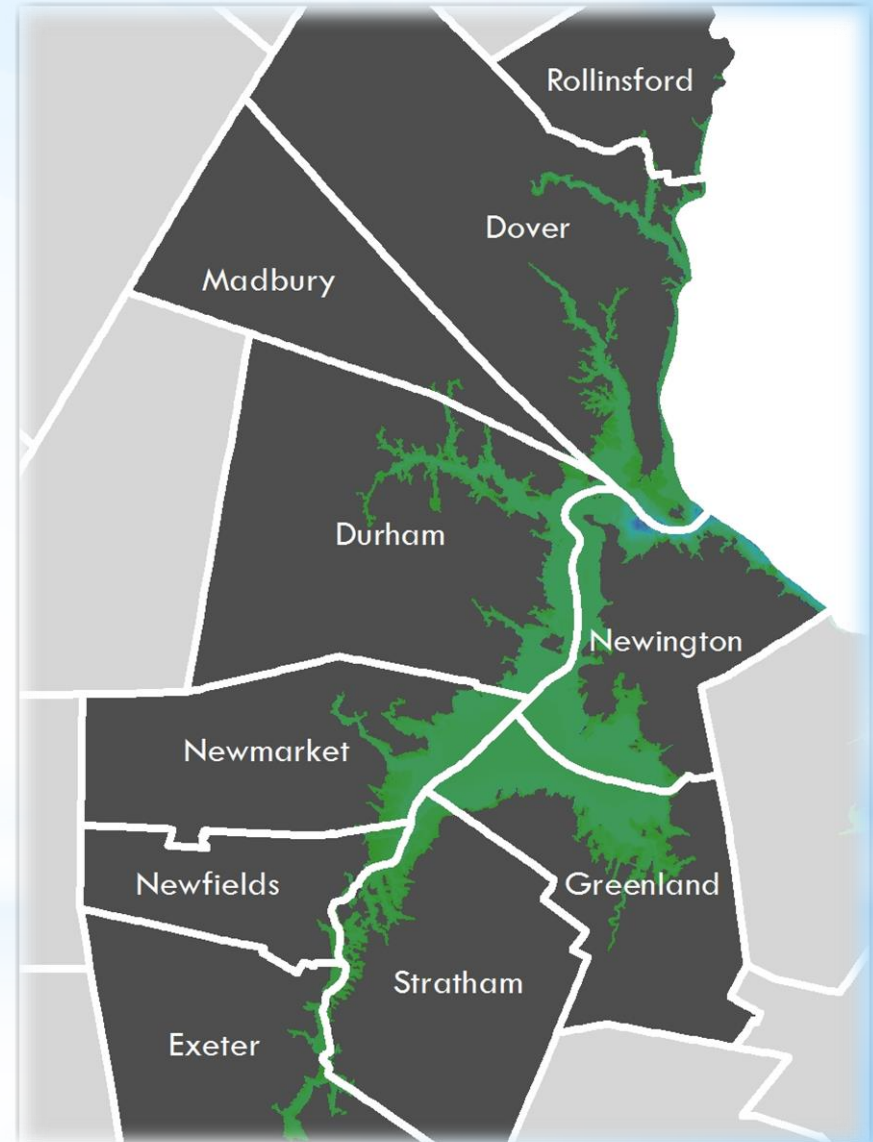
Project Introduction

FY2015 Project of Special Merit

- NOAA funding
- Awarded competitively
- Innovative projects that further enhancement area strategies and focus on national areas of importance

Project Goals

- Evaluate impacts from flooding to infrastructure and natural resources
- Assist municipalities with reviewing data and identify appropriate climate adaptation actions
- Comprehensive and coordinated shoreline management



Project Overview and Timeline

Provide maps and assessments of flooding impacts to infrastructure and natural resources in the coastal Great Bay region from projected increases in storm surge, sea level, and precipitation.

Project Components

- Culvert Analysis for each municipality (10 each)
- Mapping Flood Elevations (sea-level rise and storm surge)
- Vulnerability Assessment (statistical information and report)
- Hazard Mitigation Planning (unofficial amendment or scheduled update)

Timeline

**Project Introduction &
Regional Meetings**
April, 2016

**Create Base Maps &
Culvert Analysis**
March – April, 2016

**Meetings with
Municipal Decision
Makers**
May – October, 2016

**Vulnerability Analysis &
Draft Assessment
Reports**
August – October, 2016

**Informational
Workshops & Final
Assessment Reports**
Dec. – February, 2017

Vulnerability Results (SLR 6.3ft + Storm Surge)

Infrastructure

- No infrastructure impacted

Municipal Critical Facilities

- No municipal critical facilities impacted

Vulnerability Assessment Results

Transportation

- 0.04 miles of roadway (Creek Road – private)

Other Transportation Assets

- No other transportation assets impacted

Vulnerability Assessment Results

Natural Land Resources

- 1.5 acres of conservation lands (Smith tract along the Bellamy)
- 23.8 acres of land identified in the Wildlife Action Plan (Bellamy River and Johnson Creek)
- 26.4 acres of land identified in the Land Conservation Plan (Bellamy River, Johnson Creek, and Bunker Creek)

Natural Water Resources

- 0 acres of wellhead protection areas
- 1.3 acres of tidal wetlands
- 20.5 acres of freshwater wetlands
- 7.7 acres of stratified drift aquifer

Vulnerability Assessment Results

Land Use

- 24.9 acres of upland (land above highest tidal extent) – 0.4% of all uplands in Madbury
- Southeastern part of town along the Bellamy River, and along Johnson Creek

Parcels and Assessed Value

- 19 parcels impacted – aggregated value of \$2.1 million
- 0 structures impacted – aggregated value of \$0

Vulnerability Assessment Results

Climate Ready Culverts – Hydraulic Component

- Of the nine culverts chosen...
- 10-yr storm; three passed, three failed, three were transitional
- 25-yr storm; three passed, four failed, and two were transitional
- 50-yr storm; three passed, five failed, and one was transitional
- 100-yr storm; three passed and six failed

Climate Ready Culverts – AOP Component

- None were able to fully accommodate species
- Three failed
- Five were reduced
- One allowed only adult salmonids

Vulnerability Assessment Results

FEMA Flood Hazard Areas

- Large amounts of flooding due to SLR will be located in areas where there is existing floodplains
- Approximately 65.5% of flood impacts in the highest scenario + storm surge will fall within existing FEMA DFIRMs

Questions and Discussion



Contact:

Kyle Pimental, Principal Regional Planner
Tel. (603) 994-3500
Fax: (603) 994-3504
Email: kpimental@strafford.org

Strafford Regional Planning Commission
150 Wakefield Street, Suite 12
Rochester, NH 03867
www.strafford.org

