1. Introduction

Coastal hazards such as coastal storms and extreme precipitation events can be devastating to human health and safety, public and private structures and facilities, and the economies of coastal communities, and these hazards will only get worse as they are exacerbated by sea-level rise. Tropical Storm Irene in 2011 and Superstorm Sandy in 2012 demonstrated the immense destruction that strong storm systems can cause in both rural and urban settings in the Northeast. As of 2016, New Hampshire's 17 coastal zone municipalities are home to approximately 11 percent of the state population, support more than 100,000 jobs, and account for a 2014 Gross Regional Product of approximately $11 billion.[14, 15] As the coastal population and economy expand, where and how we build will have critical implications for how coastal New Hampshire will withstand projected coastal hazards associated with storm surge, sea-level rise, and extreme precipitation events. The crowding of our coastlines and waterfront has become a hazard unto itself, as we continue to put people and the built landscape directly in harm's way.

Preparing for coastal hazards will save lives, money, and natural resources that are critical to maintaining the quality of life on the seacoast. According to the U.S. Chamber Foundation's Business Civic Leadership Center preliminary estimates, Superstorm Sandy negatively affected between 60,000 and 100,000 small businesses, and as many as 30 percent of those companies were projected to fail as a direct result of the storm.[16] A study completed in 2005 by the Multi-Hazard Mitigation Council of the National Institute of Building Sciences concluded that when it comes to infrastructure, every dollar spent on mitigation saves society an average of four dollars.[17] Climate impacts could drown the majority of New Hampshire's salt marshes by 2100[18] but recent studies conducted locally indicate that proactive planning for the eventual landward migration of salt marshes (i.e., protecting undeveloped uplands) will help ensure their persistence in the face of rising sea levels.

In recognition of the need to prepare for existing hazards and the increased risks associated with climate change, the State Legislature established the New Hampshire Coastal Risk and Hazards Commission in 2013 to "recommend legislation, rules and other actions to prepare for projected sea-level rise and other coastal watershed hazards such as storms, increased river flooding and stormwater runoff, and the risks such hazards pose to municipalities and state assets in New Hampshire" (see Appendix A). For nearly two years, the Commission gathered data and summarized the best available peer-reviewed science to understand current and projected risks posed by coastal hazards to New Hampshire's coastal region and to establish planning assumptions such as the range of likely sea-level rise, and changes in storm surge and intensity. The Commission then evaluated potential impacts of these risks and discussed ongoing efforts to understand and plan for impacts. Finally, the Commission discussed existing knowledge and policy gaps and needs and developed recommendations for municipalities, legislators, and state agencies.

This report summarizes the activities carried out by the Commission as well as the key scientific findings and impact analyses that the Commission used to inform the recommendations and actions laid out in Section 6. The report is divided into several key sections: Section 2 describes the background on the Commission's establishment, membership, scope, and process; Section 3 summarizes the best available climate science as presented by the Science and Technical Advisory Panel report (STAP report); Section 4 presents an overview of known coastal vulnerabilities in the areas of Our Economy, Our Built Landscape, Our Natural Resources, and Our Heritage; Sections 5 and 6 present the Commission's recommendations and suggested actions for state agencies, municipalities, and the New Hampshire legislature; and Section 7 outlines existing mechanisms and suggests next steps to ensure continuity and implementation beyond the Commission's sunset on December 1, 2016.