

Tides, Taxes, & New Tactics

Planning for Adaptation and Impacts of Sea Level Rise and Storm Surge through GIS-Driven Vulnerability Assessments and Community Dialogues

Project Kickoff Meeting

Wednesday, January 15th, 2020

Wells Reserve at Laudholm



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Meeting Agenda

- ▶ Project Overview
- ▶ Economic Assessment
- ▶ Timeline & milestones
- ▶ Advisory Committee
- ▶ Questions and Discussion
- ▶ GIS Consultant Selection
- ▶ Wrap-up & Next Steps



Project Goal

- ▶ Engage and provide the towns of York, Kennebunk, and Wells with locally specific information about economic and social vulnerabilities associated with sea level rise and coastal flood events in order to co-develop strategic, effective, locally relevant adaptation and resiliency planning strategies and policies that address those vulnerabilities and are tailored to town conditions, needs, and interests

Project Overview

Budget

- ▶ \$46,187 (CCG)
 - ▶ \$10,470 (DACF/MCP)
 - ▶ \$27,140 (match: cash and in-kind)
-
- ▶ Total (non-match): **\$56,675** (state)

Partners

- ▶ Kennebunk, Wells, & York
- ▶ SMPDC
- ▶ rbouvier consulting
- ▶ Wells Reserve
- ▶ Maine Sea Grant / Cooperative Extension
- ▶ Island Institute
- ▶ GIS consultant

Project Overview

Advisory Committee

- Sustained working group
- Regional coordination

GIS Vulnerability Assessments

- Knowledge transfer
- Compilation & consistent formatting of data
- Inventory of vulnerable assets
- Transferable methodology & written protocol

Development of Adaptation Strategies

- Regulatory & non-regulatory
- Legal review
- Funding strategies
- Model language
- Coordination with related initiatives
- Implementation

Community Engagement Workshops

- Led by Wells Reserve
- One in each town
- Enhance awareness & knowledge
- Input & buy-in for adaptation strategies
- Inform action

Regional Plan and Municipal-Specific Actions

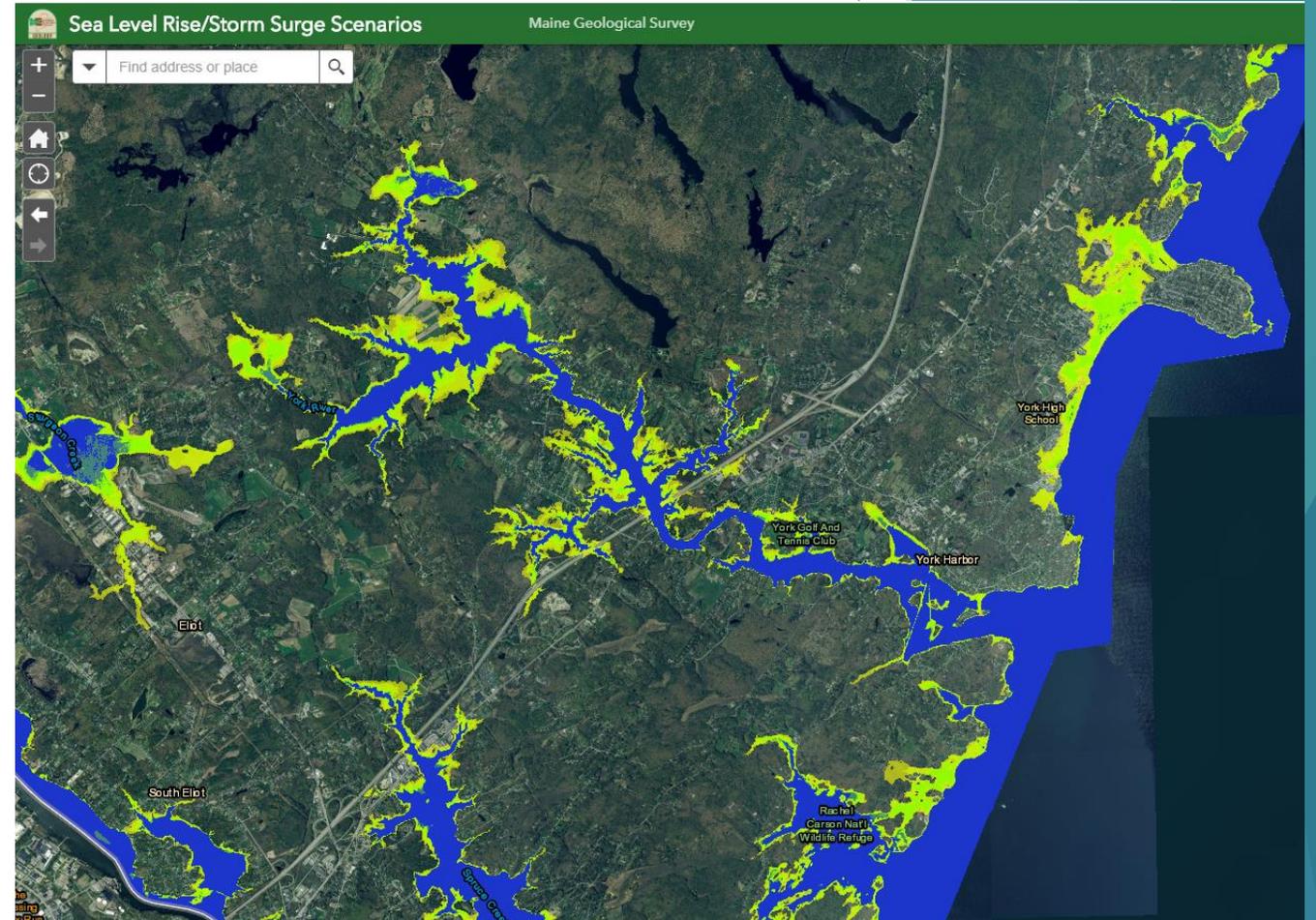
- Based on Town-specific needs
- Summary of regional & town vulnerabilities
- Roadmap for action
- Linked with related initiatives
- Basis for potential future funding

Present Results

- 2 Planning Board & 2 Select Board meetings
- Work products summarizing approach & findings

Methodology

- ▶ Flooding scenarios of interest
 - ▶ Revised sea level rise projections
 - ▶ Storm surge
- ▶ Decision-centered modeling
 - ▶ Shaped by region and Town-specific needs
- ▶ Informed by recent similar project
- ▶ Social, economic, and infrastructure considerations



ShoreUp Maine 2019



Cost of Sea Level Rise - Vinalhaven

With 1.6 feet of sea level rise, more than **two-fifths of residential properties** and more than **two-thirds of Vinalhaven's commercial properties** will experience flooding.

Water will breach more than **30 homes** and almost **20 commercial buildings**.

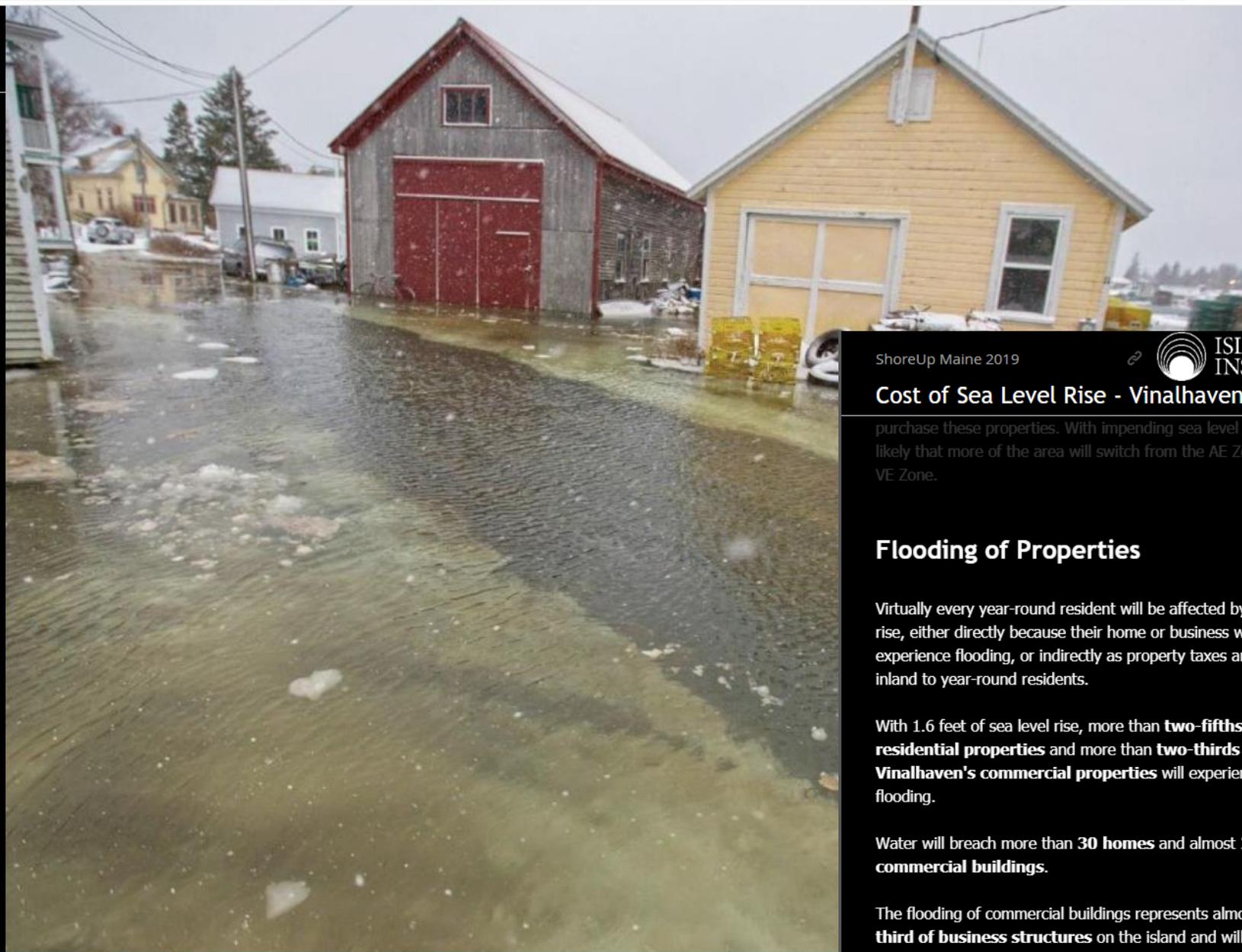
The flooding of commercial buildings represents almost **one-third of business structures** on the island and will put more than **100 workers** and **\$3.5 million of annual wages** at risk.

Property Tax Burden

While it is hard to estimate exactly how assessed values will change for parcels that experience flooding, sea level rise will cause Vinalhaven's tax base to shrink, shift inland, and become more dependent on year-round residents.

Sea level rise of 1.6 feet will put almost \$35 million in assessed value at risk, more than 6% of the island's total tax base.

Vinalhaven's mill rate, currently 6th lowest in Knox County and in the bottom fifth statewide, will rise accordingly. If the flooded properties lose 25% of their value, the island's tax base will shrink by 1.5%, Vinalhaven's mill rate will rise by 20 cents per thousand dollars of assessed value, and property taxes for the median priced home (\$294,000) will rise by \$60 annually. If the properties lose 75% of their value, the tax base will shrink by 4.8%, the mill rate will rise by 62 cents per thousand, and taxes for the median-priced home will increase by \$180 annually.



ShoreUp Maine 2019



Cost of Sea Level Rise - Vinalhaven

purchase these properties. With impending sea level rise it is likely that more of the area will switch from the AE Zone to the VE Zone.

Flooding of Properties

Virtually every year-round resident will be affected by sea level rise, either directly because their home or business will experience flooding, or indirectly as property taxes are shifted inland to year-round residents.

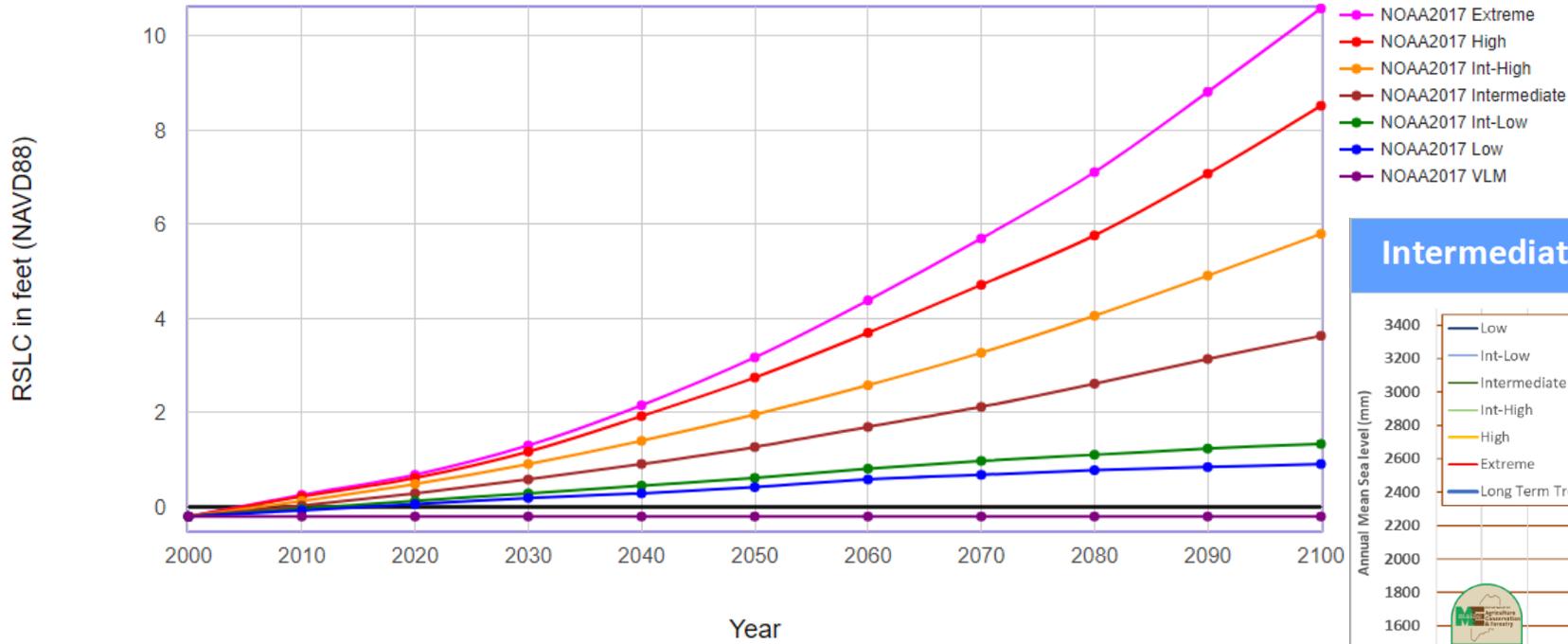
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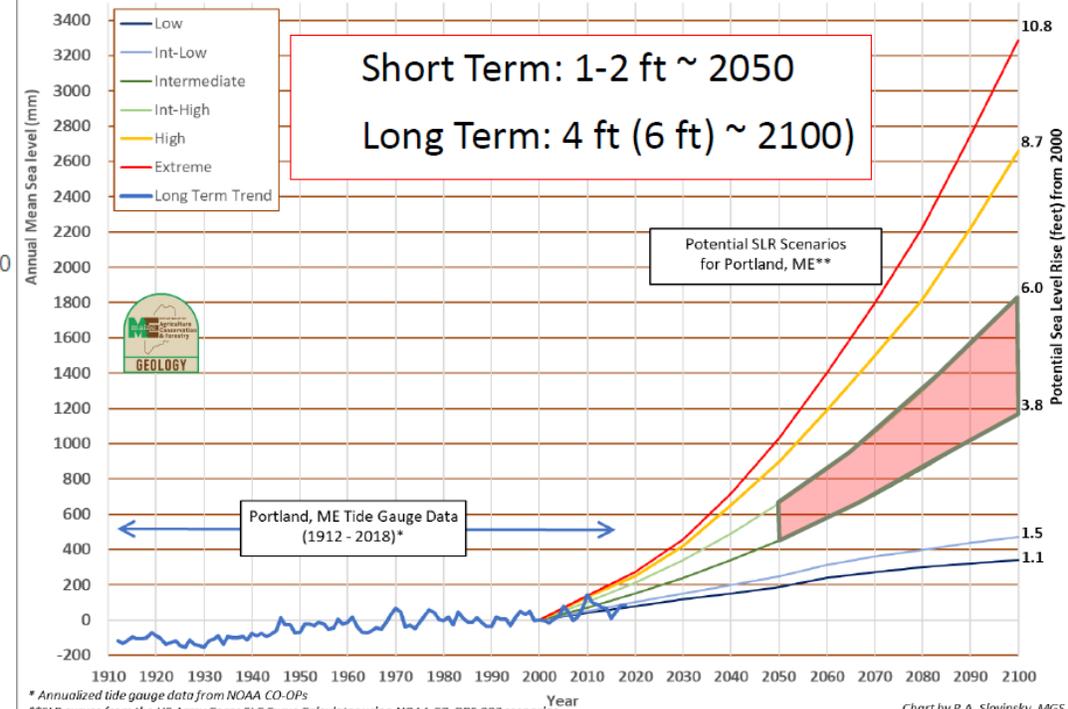
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Sea Level Rise in Maine

NOAA et al. 2017 Relative Sea Level Change Scenarios for : PORTLAND



Intermediate to intermediate high scenarios (2050 and 2100)



Environmental Economic Assessment

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Five steps to an economic vulnerability analysis



Organize



Evaluate Projected Climate Change Impacts and Hazards



Identify Community Assets and their Vulnerability



Analyze Overall Economic Implications for the Community



Explore Options to Enhance Resilience and Pursue Opportunities

From EPA, 2016. "Planning Framework for a Climate Resilient Economy."
www.epa.gov/smartgrowth.

Identifying Community Assets and Their Vulnerability



Perform an inventory of local economic assets



Determine Vulnerability (exposure X effect on operations X ability to adapt to or protect from the threat)



Analyze the region's economic and industry-specific vulnerability

Analyze Overall Economic Implications for the Region



What would loss of an asset mean for businesses, workers, residents, and tourists?



How might specific businesses be affected?



How are those industries connected?



Where do workers live versus work?



Are businesses “climate sensitive” in demand or supply?



How are adjacent communities likely to be affected?



How are vulnerable populations likely to be affected?

Economic asset categories

Transportation

Agricultural operations

Utilities and emergency response

Natural and cultural assets

Industrial operations

Commercial operations

Historic areas and assets

Specific business sectors

Explore Options to Enhance Resilience and Pursue Opportunities

Public Sector Actions

- ▶ Encourage public-private partnerships
- ▶ Support networking and resource sharing among businesses
- ▶ Consider incentives to promote development in more desirable locations
- ▶ Create a post-disaster development plan
- ▶ Promote “buy local” strategies
- ▶ Enhance resilience of utilities and infrastructure

Private Sector Actions

- ▶ Create or update continuity-of-business plan
- ▶ Identify and take advantage of resilience related market opportunities
- ▶ Make structural improvements where it makes sense
- ▶ Build human resources capacity to respond to disasters