

An aerial photograph of a coastal road and beach, overlaid with a semi-transparent blue filter. The road runs parallel to the shore, with waves breaking on the beach to the right. The sky is overcast and grey.

Seacoast Transportation Corridor Vulnerability Assessment

David Walker
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Transportation Program
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**Transportation Advisory
Committee**

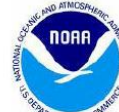
June 24, 2021



Seacoast Transportation Corridor Vulnerability Assessment (STCVA)

- Funded as a 2019 NOAA Project of Special Merit
- A partnership between:
 - Rockingham Planning Commission
 - NH DES Coastal Program
 - NH Department of Transportation
 - University of New Hampshire
 - 10 NH coastal municipalities

This project was funded, in part, by NOAA's Office for Coastal Management under the Coastal Zone Management Act in conjunction with the New Hampshire Department of Environmental Services Coastal Program.





STCVA Goals

- Assess the impacts of projected sea-level rise on the seacoast transportation network (1', 1.7', 4', and 6.3' sea-level rise scenarios).
- Evaluate changes in traffic volume, travel patterns, road capacity, road conditions due to SLR
- Identify & prioritize sites impacted by flooding for further evaluation
- Identify adaptation and resilience strategies for priority sites
- Improve RPC/MPO decision making processes



STCVA Transportation Planning Outcomes

- Enhanced understanding of risks to transportation network from climate change
- Critical links identified and impacts of closures on the transportation network assessed
- Improvement concepts and costs developed for priority locations to better understand scope and scale of building a more resilient system
- Improved resiliency factors for the general project selection process
- Data and analysis available for other planning and project development efforts.
- Policies defined that can facilitate a more resilient transportation system

Identifying & Prioritizing Impacted Roadways

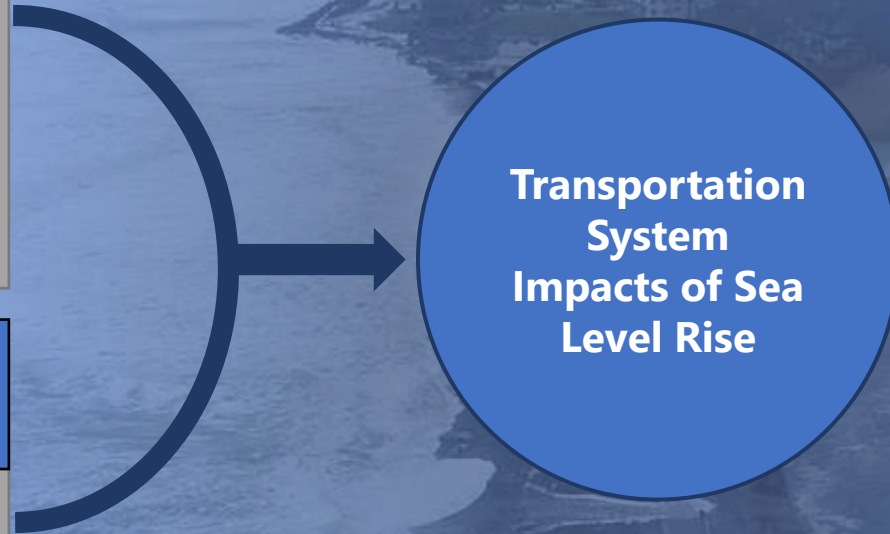
Previous Work on Sea Level Rise Impacts

- Tides to Storms
- Coastal Risks and Hazards Commission
- 2020 NH Science Summary

Regional Travel Demand Model

- Travel Patterns based on residential and employment distribution
- All State Roadways and many local Roads

Transportation System Impacts of Sea Level Rise



Identifying & Prioritizing Impacted Roadways

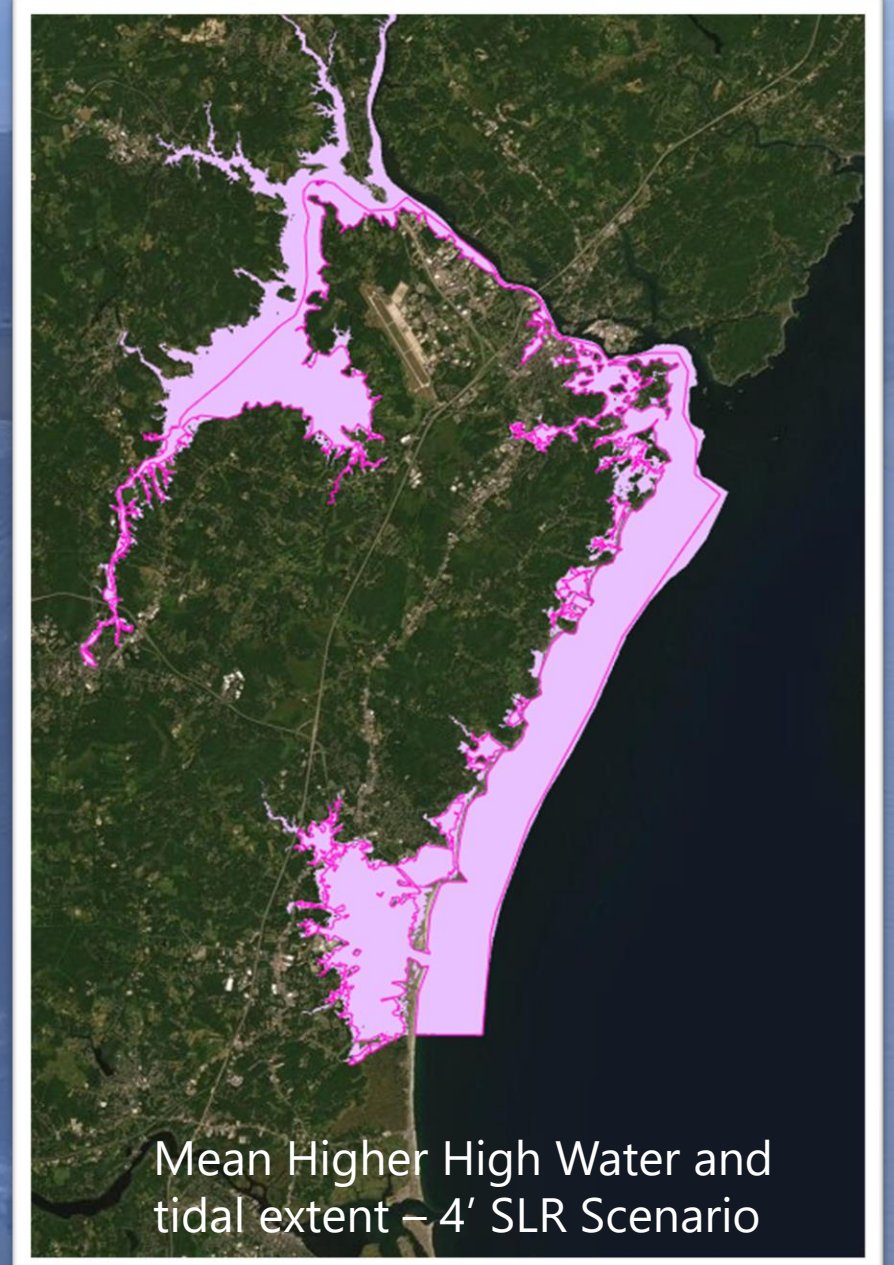
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Transportation System
Impacts of Sea Level Rise



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Transportation System
Impacts of Sea Level Rise



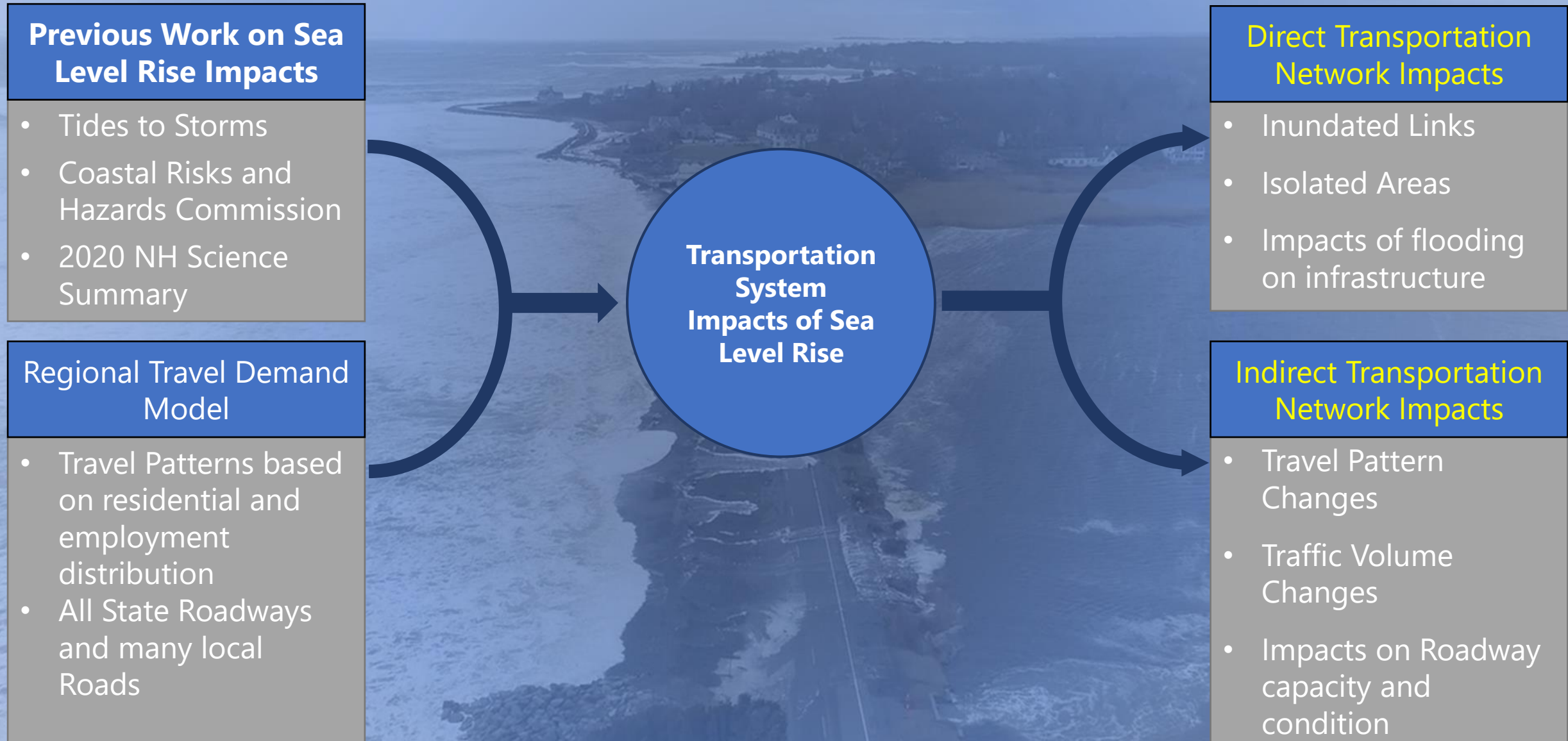
Identify Segments Where Water and Roads intersect



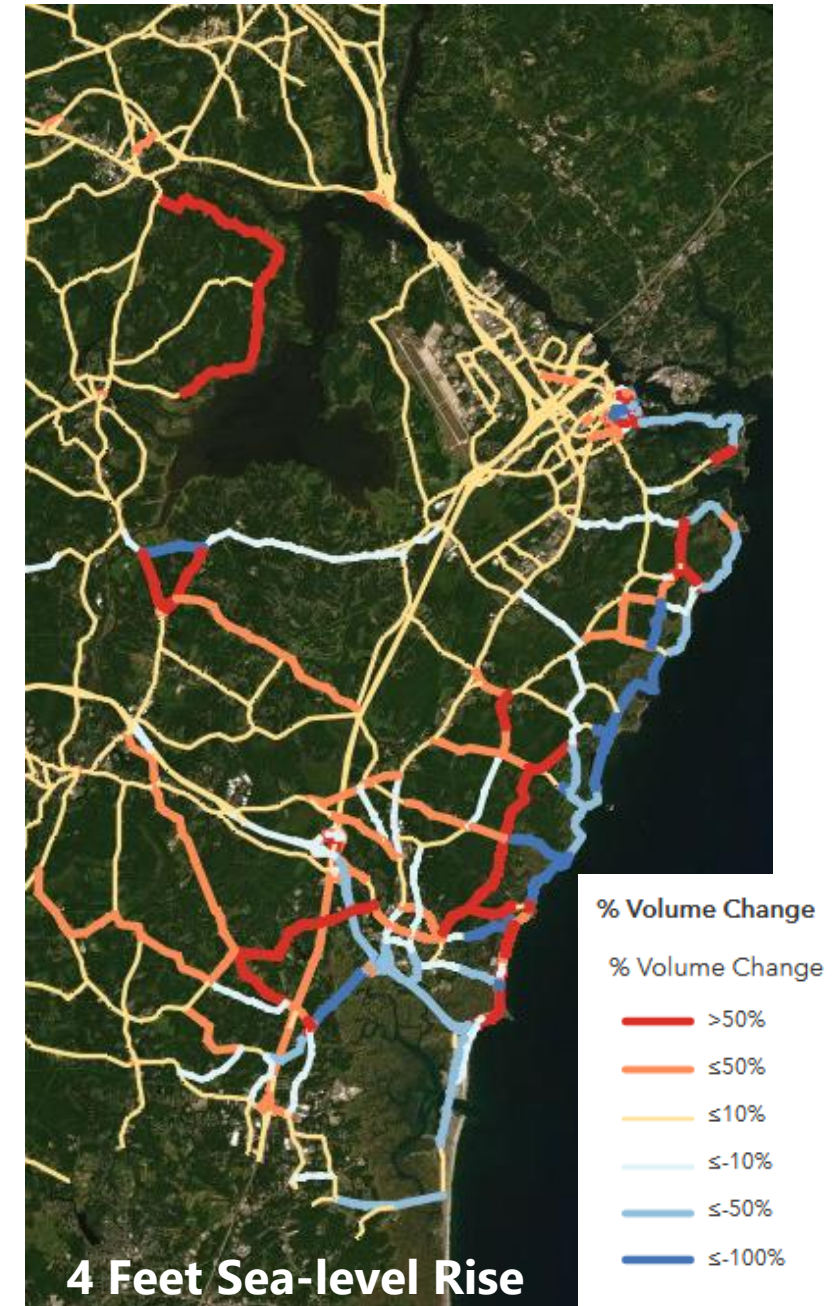
Inundated model links at 4' SLR

Scenario	Impacted Locations	Approx. Miles Impacted
1'	4 model links	0.5
1.7'	13 model links	1.0
4'	125 model links	16.8
6.3'	259 model links	28.0

Identifying & Prioritizing Impacted Roadways



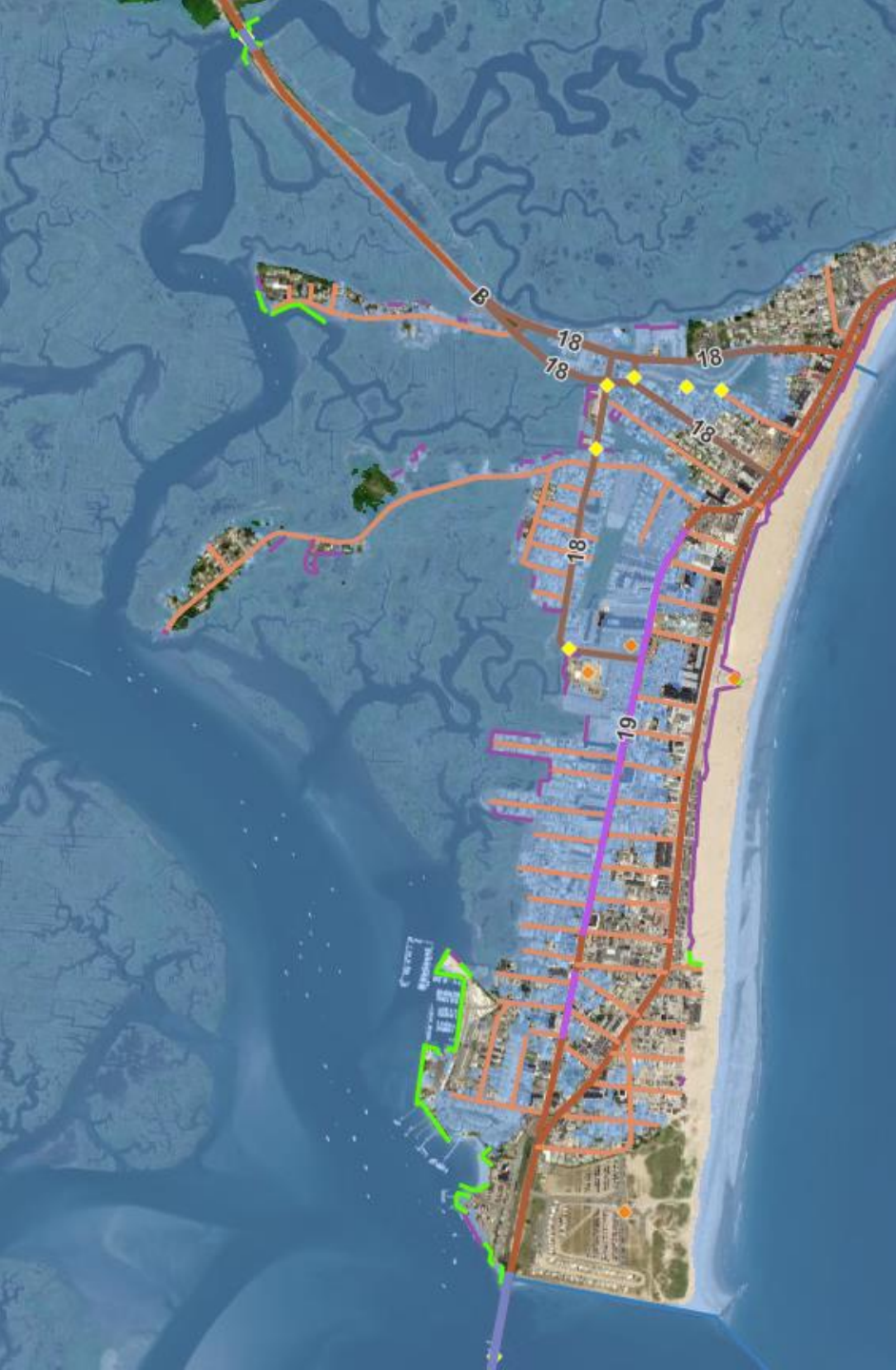
Estimate Traffic Impacts of Road Closures





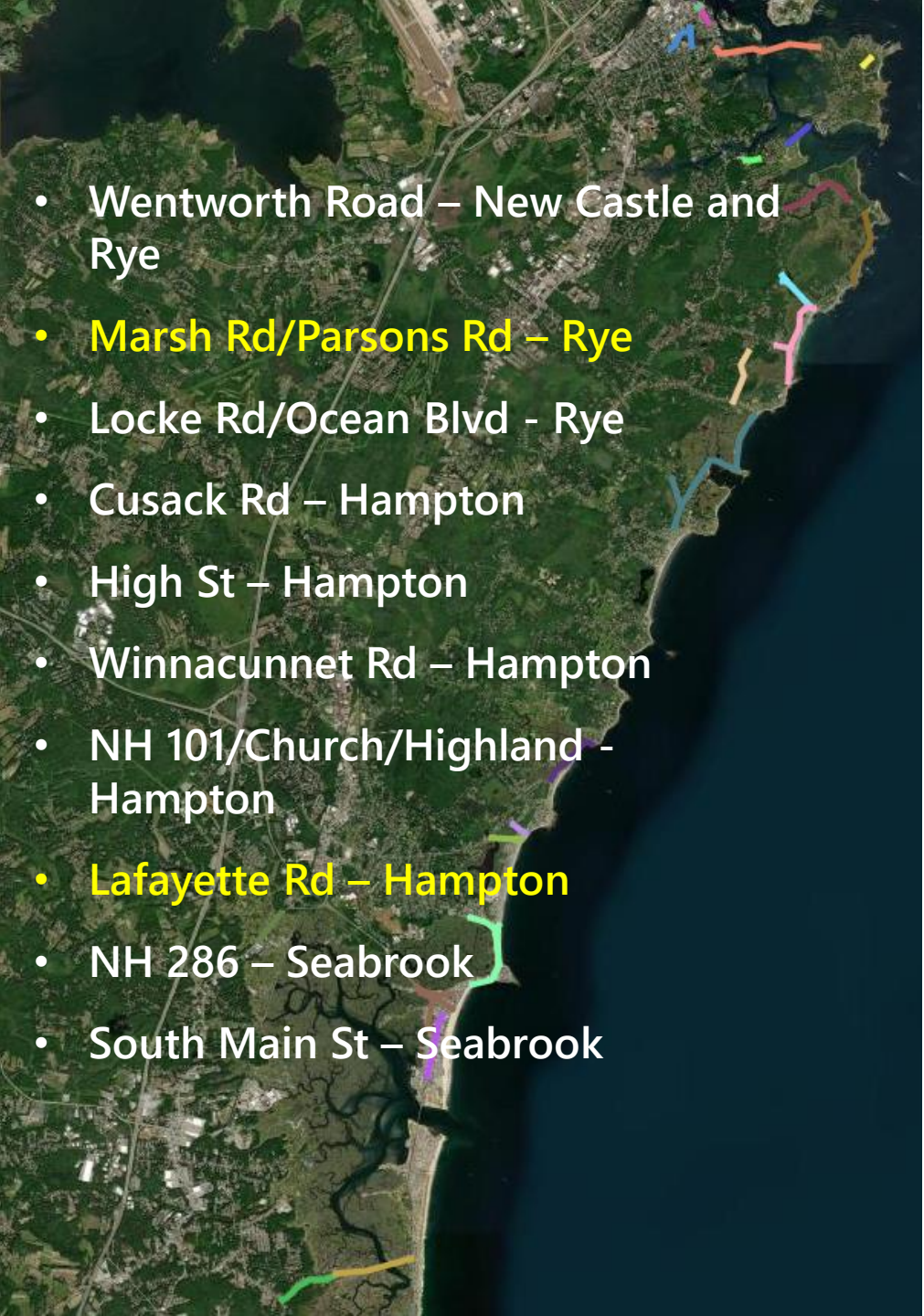
Group Adjacent Impacted Links into Sites

Scenario	Impacted Locations	Sites
1 Foot	4 model links	3
1.7 Feet	13 model links	5
4 Feet	125 model links	24



Score Sites Against Criteria to Determine Criticality

Criterion	Weight	
Functional Classification	20%	Operations
Average Daily Volume (AADT)	20%	
Distance to Emergency Services	15%	Health & Safety
Alternate Route Availability	15%	
Social Vulnerability Index (SVI)	10%	Socioeconomics
Distance to Community Facilities	10%	
Average Land Value per Acre	10%	



- Wentworth Road – New Castle and Rye
- **Marsh Rd/Parsons Rd – Rye**
- Locke Rd/Ocean Blvd - Rye
- Cusack Rd – Hampton
- High St – Hampton
- Winnacunnet Rd – Hampton
- NH 101/Church/Highland - Hampton
- **Lafayette Rd – Hampton**
- NH 286 – Seabrook
- South Main St – Seabrook

Identify Priority Sites for Evaluation

- List of priority sites for further evaluation vetted with NHDOT and other project team members
- Selected 10 sites to:
 - Assess types of impacts and potential adaptation measures
 - Develop conceptual design alternatives
 - Apply New Hampshire Coastal Flood Risk Guidance
- 2 Sites will have more in-depth analysis



Remaining Tasks

- UNH is conducting site analysis this summer
- RPC is working on alternate routing analysis and developing site profiles
- Will meet with the corridor advisory committee late summer
- Community meetings in the fall
- Report and wrap up this winter.

[RPC Project Staff](#)

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For More Information

The screenshot shows the website for the Rockingham Planning Commission. The header includes the RPC logo, contact information (Phone: 603-778-0885, Fax: 603-778-9183), a 'Browse Our Document Library' button, and a search bar. The navigation menu includes Commission, Communities, Regional & Community Planning, Transportation, Environment, and Maps and Data. The breadcrumb trail is: Home >> Regional & Community Planning >> Climate Change >> Seacoast Transportation Corridor Vulnerability Assessment & Plan. The main content area features a sidebar with a list of links under 'Climate Change', including CRISE, High Water Mark Initiative, Setting Sail, Tides to Storms, State and Regional Efforts, and Exeter Stormwater. The main article is titled 'Seacoast Transportation Corridor Vulnerability Assessment & Plan' and includes an 'Issue' section with text about coastal storms and flooding. A photograph shows a road with a 'HIGH WATER' sign and a traffic cone. Below the article is an 'Area of Interest & Risk Summary' section.

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[Browse Our Document Library](#)

Search The Site:

Commission Communities Regional & Community Planning Transportation Environment Maps and Data


Home >> Regional & Community Planning >> Climate Change
>> Seacoast Transportation Corridor Vulnerability Assessment & Plan

Seacoast Transportation Corridor Vulnerability Assessment & Plan



Issue

Coastal storms and flooding already threaten state and local transportation infrastructure in New Hampshire's seacoast. These risks are expected to increase with sea-level rise, causing potential daily inundation of some transportation assets within the next 80 years. Sea-level rise and other climate change impacts will need to be considered as municipalities and NHDOT maintain or replace aging existing transportation assets and design and construct new systems. Effective adaptation to increasing coastal flood risks will depend upon coordination among transportation decision-makers, municipalities, regulators, and other authorities to share information and develop consistent (or complimentary) transparent methods to ensure a safe and functioning NH Seacoast Transportation Corridor (STC).



Area of Interest & Risk Summary

<https://www.therpc.org/STCVA>