

Seacoast Transportation Corridor Vulnerability Assessment

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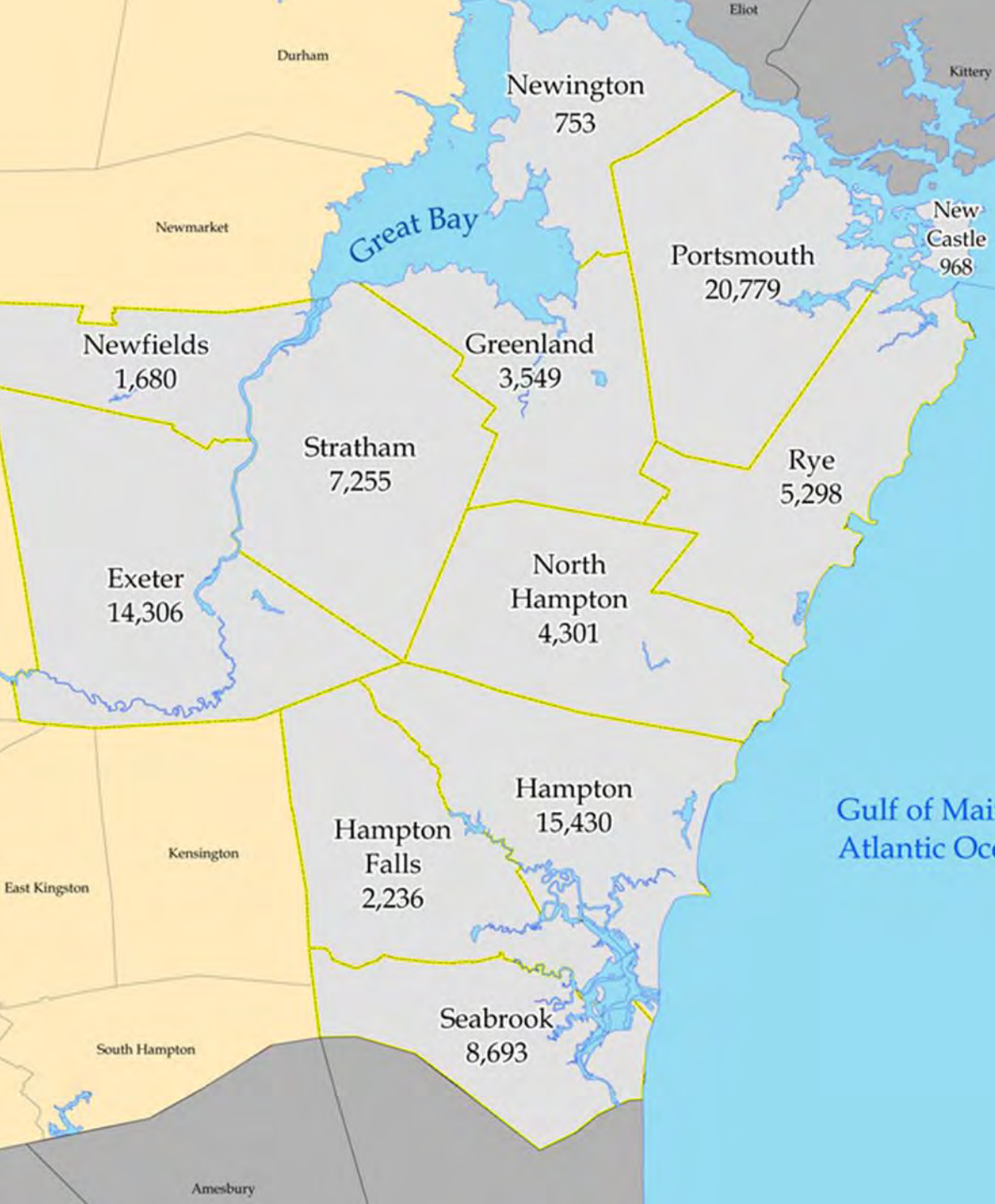
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Project Overview and Findings

2022 Climate Summit

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Seacoast Transportation Corridor Vulnerability Assessment (STCVA)



- Funded as a 2019 NOAA Project of Special Merit
- RPC Federal Transportation Planning Funds
- A partnership between:
 - Rockingham Planning Commission
 - NH DES Coastal Program
 - NH Department of Transportation
 - University of New Hampshire
 - 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 under 1', 1.7', 4', and 6.3' sea-level rise (SLR) 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



Analysis Conducted

Previous Work

Previous studies, such as Tides To Storms and Coastal Risks and Hazards Commission, provide basis in Science and digital elevation models



Network Analysis

Conduct analysis for each sea-level rise scenario using the travel demand model. Identify changes to traffic patterns due to closures.



Site Assessments

Apply NH Coastal Flood Risk Guidance and Investigate site-specific conditions at priority and case study locations.



Site Identification

Overlay the roadway network from the Regional Travel Demand Model on the elevation models to identify impacted links and estimate the changes to travel patterns.

Site Prioritization

Catalogue and prioritize impacted roadway segments for vulnerability assessment utilizing operational, health and safety, and socio-economic factors. Select two locations for case studies.



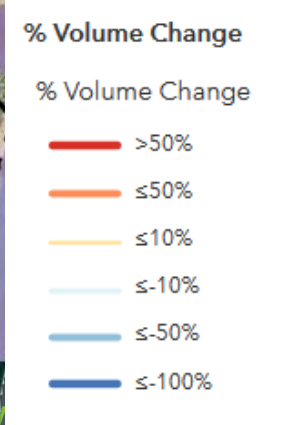
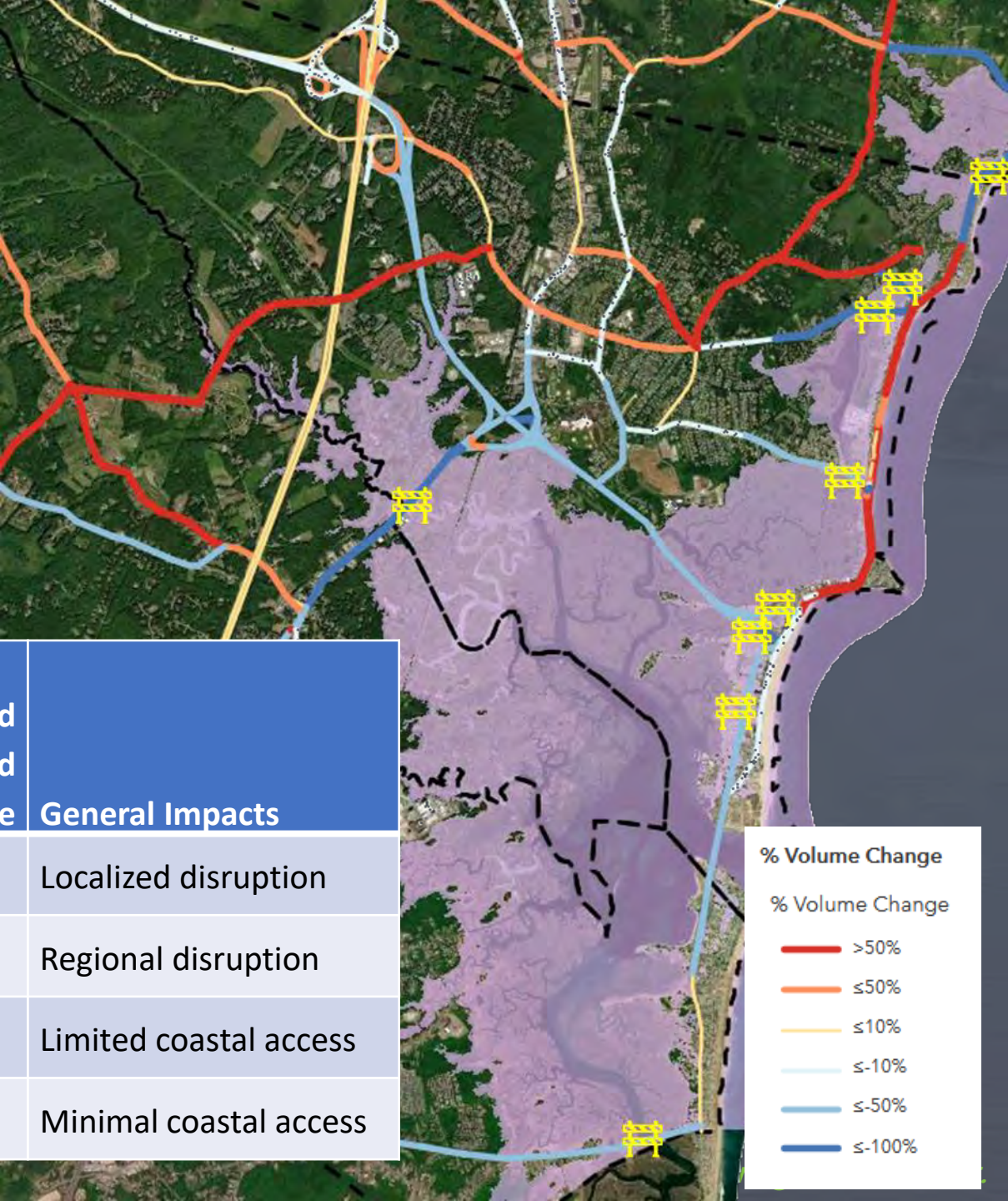
Adaptation Options

Identify climate adaptation and resilience strategies for priority locations based on site assessments.

Findings

- Transportation System continues to work relatively well until 2+ SLR
- By 4', the network faces significant challenges to operate effectively and provide access to the NH seacoast
- New Castle, Seabrook and Hampton Beaches potentially isolated and inaccessible

| Scenario | Closed Roadway Segments | Uninterrupted North-South Routes Available (3 total) | Uninterrupted East-west Routes Available (22 total) | Estimated disrupted daily volume | General Impacts |
|----------|-------------------------|------------------------------------------------------|-----------------------------------------------------|----------------------------------|------------------------|
| 1 foot | 3 | 3 | 20 | 10,000 | Localized disruption |
| 1.7 feet | 5 | 3 | 18 | 20,000 | Regional disruption |
| 4 feet | 25 | 1 | 7 | 108,000 | Limited coastal access |
| 6.3 feet | 52 | 1 | 2 | Unknown | Minimal coastal access |



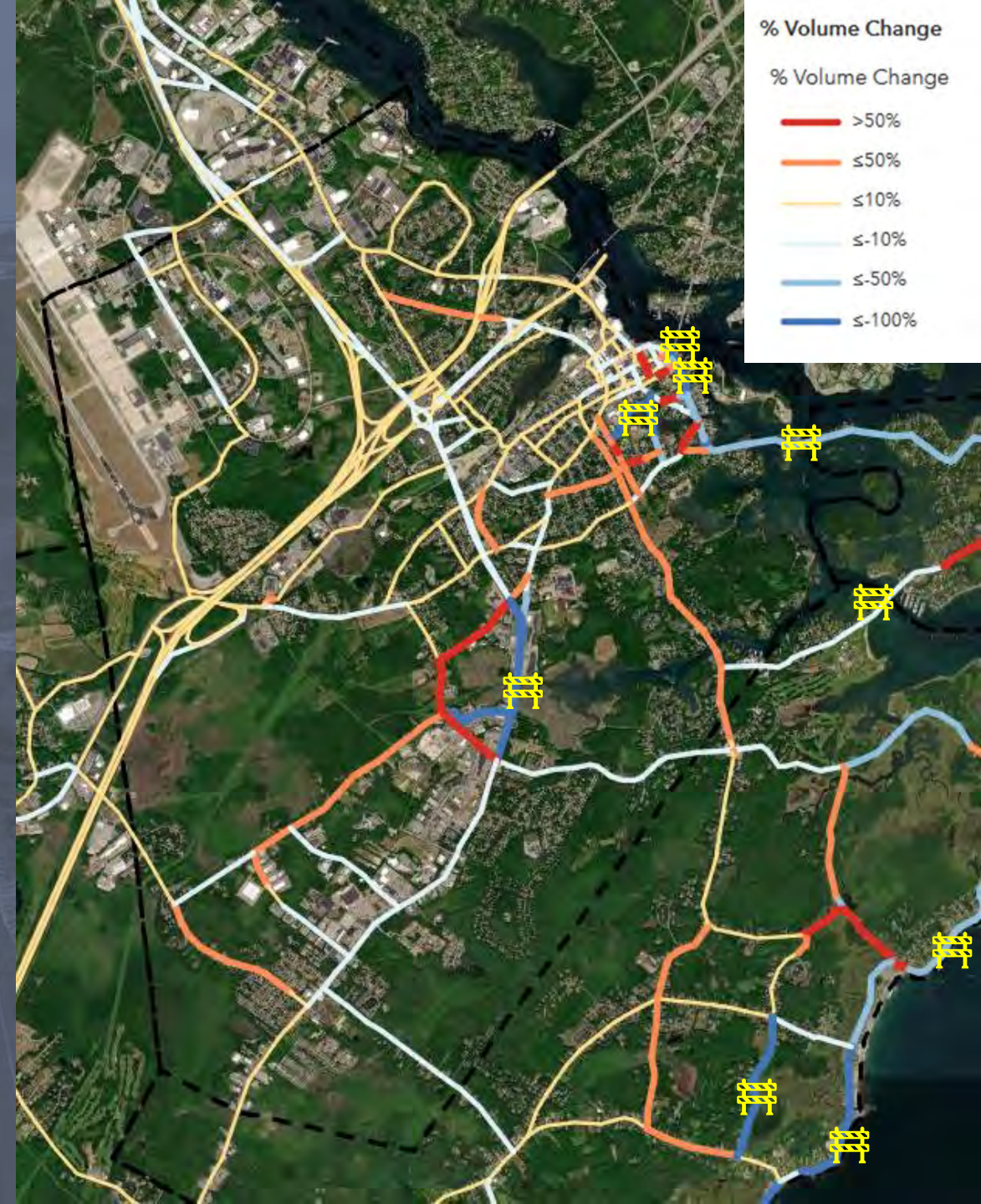


Considerations

- Timeframes included are for planning purposes only and not predictions
- Not all the impacts can be addressed with transportation projects.
- Transportation network issues transcend community boundaries
- Measures that work in the short-term may not be long-term solutions
- What appear to be good options initially may not be feasible or cost-effective once engineering begins

Beyond the STCVA

- Integrating findings & transportation projects into RPC Long Range Transportation Plan & State Ten Year Plan
- Refining Travel Demand model to improve network analysis
- Working with NHDOT on their Coastal Flood Risk Tolerance Framework
- Researching pavement resilience to Sea Level Rise (UNH funded by NOAA)
- Looking for additional grant opportunities to develop site-specific alternatives, conduct additional analysis, and integrate findings of State Hydrodynamic model.





For More Information

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