

Resilient Tidal Crossings: An Assessment and Prioritization to Address New Hampshire's Tidal Crossing Infrastructure for Coastal Resilience (2018)

Summary:

Four tidal crossings in Dover were included in the 118 crossings assessed across New Hampshire's coastal zone. Scoring criteria included infrastructure condition, inundation risk, tidal restriction, fish passage and salt marsh migration. These criteria were applied to prioritize each crossing with a focus on enhancing coastal resilience for both human and natural communities.

All four of the tidal crossings in Dover were assigned high priority scores for replacement. Two received the lowest rating of 5 (highest priority for replacement), while the other two received a next to lowest rating of 4 for Ecological Score (high replacement priority).

Key points:

- The tidal culvert at Fresh Creek and Atlantic Ave was assigned an overall combined score of 5. The Atlantic Ave structure is perched above high tide, which creates a complete tidal restriction and prevents aquatic organism passage, including for anadromous fish.
- Tidal wetlands along Varney Brook are bisected by three tidal crossings. The tidal wetland in between Route 16 and Dover Point Road is degraded due to extensive colonization by invasive species, which is exacerbated by the two tidal restrictions located downstream.
- The twin 6-ft round culverts at Route 16 and Varney Brook were slip-lined, reducing the hydraulic opening size of the culverts. In addition, one of the culverts is being used to route a municipal sewer line from the nearby pump house; further reducing hydraulic capacity.

Suggested Uses:

Use this resource for:

- Culvert management and long-term transportation planning
- Habitat restoration project planning (culverts provide important wildlife passage between habitats, and correct sizing benefits both wildlife and protects people from unnecessary flooding).
- Flood hazard and emergency access planning.

Other Relevant Resources:

- Fresh Creek Tidal Restriction Restoration Potential Assessment (UNH, 2010)
- High resolution tidal wetland maps (available on NH Coastal Viewer)

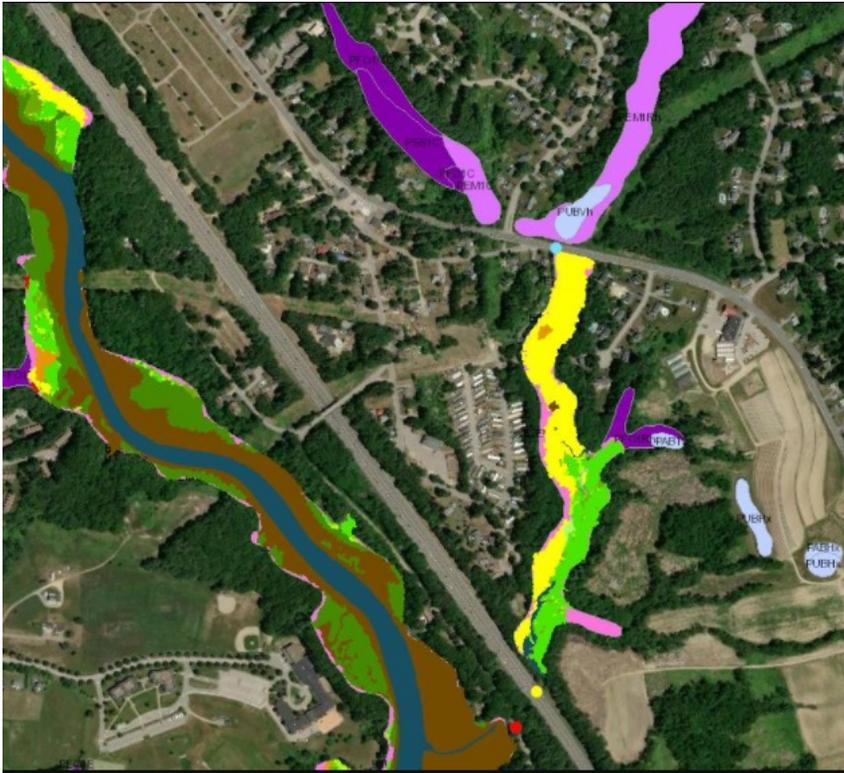
Keywords:

- Tidal wetlands
- Coastal resilience
- Transportation
- Fish passage
- Infrastructure condition
- Inundation risk
- Coastal natural resource management

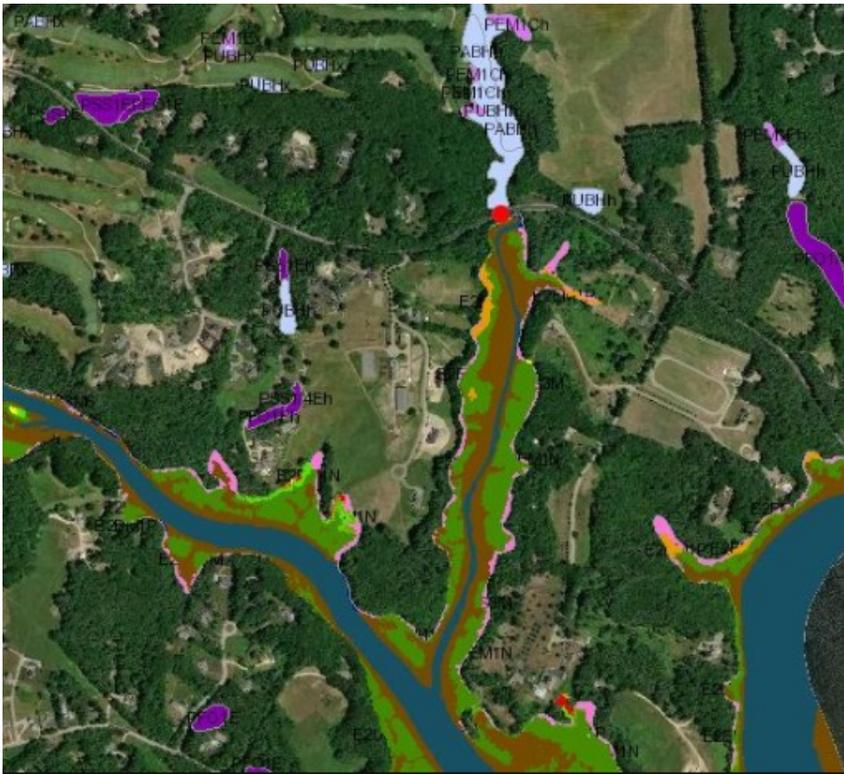


[Find this and other resources on Dover's Climate Resources Webpage](#)

Example Maps



A map of Varney Brook showing tidal crossings at Spur Road, Route 16 and Dover Point Road as well as results of the high resolution tidal wetlands. Note freshwater wetlands in purple, tidal wetlands in green, and the invasive common reed (*phragmites*) in yellow.



A map of Fresh Creek showing tidal crossing at Atlantic Ave, which creates a complete tidal restriction. Note freshwater wetlands in purple/blues upstream of Atlantic Ave and tidal wetlands in green/brown downstream of Atlantic Ave.

Report Authors: NH Department of Environmental Services
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