Colchester Causeway Repairs 2018-2020

Introduction

On May 3, 2018, Colchester Causeway contained 133,850 cubic yards of fill, surface and slope material. **The Causeway lost 12,450 cubic yards (or 9.3%) of fill, surface and slope material in the May 4-5 storm.**

Past History

The Rutland Railroad opened a rail line in 1901 after building the Causeway the prior year. By 1962, Vermont's interstates, 89, 91, 93, 189 and 289 were completed. Following both a decline in use and multiple strikes, the Rutland Railway ceased to operate. In 1963, the State of Vermont acquired the Railroad's assets. The Town acquired the Causeway, south of the "cut" or opening between the section connecting to South Hero and the section connecting to Colchester, in 1966.





Northbound 8/10/62 from Signal 130.4

From 1966 until the 1990's the Causeway was primarily used for walking and fishing. In the 1990's cycling became a more prominent use, increasing significantly in ridership and regional renown after 2004 when the Winooski River Bike Bridge was completed and Local Motion moved their ferry form the Winooski River to the "cut" to bridge the gaps between the north and south segments of the Causeway.

May 3, 2018 Condition

Unless there is a very high water situation or relatively high water with wind/waves, the Causeway is generally safe from damage. It needs little if any annual heavy maintenance (truckloads of rock).

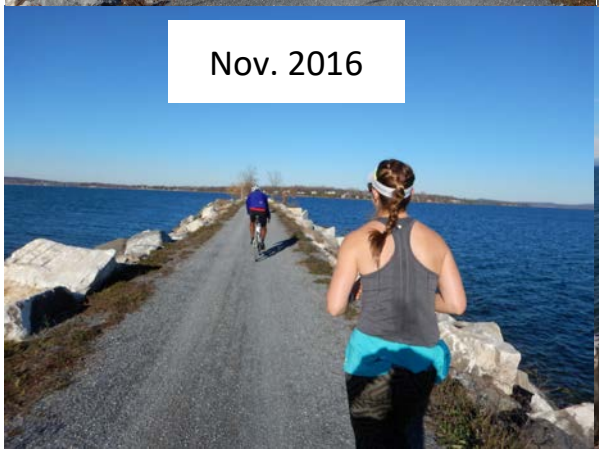


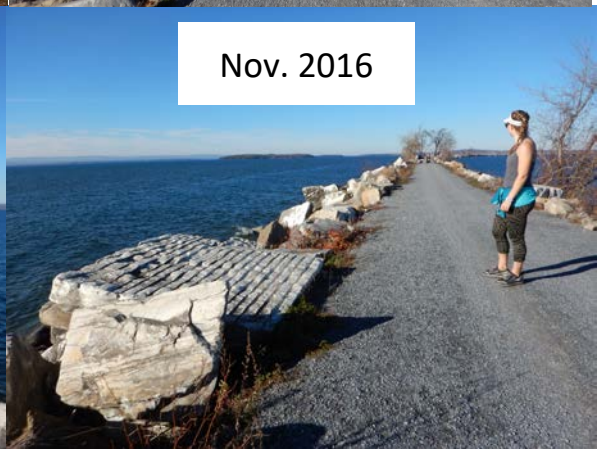
May 3, 2018 Condition (cont.)

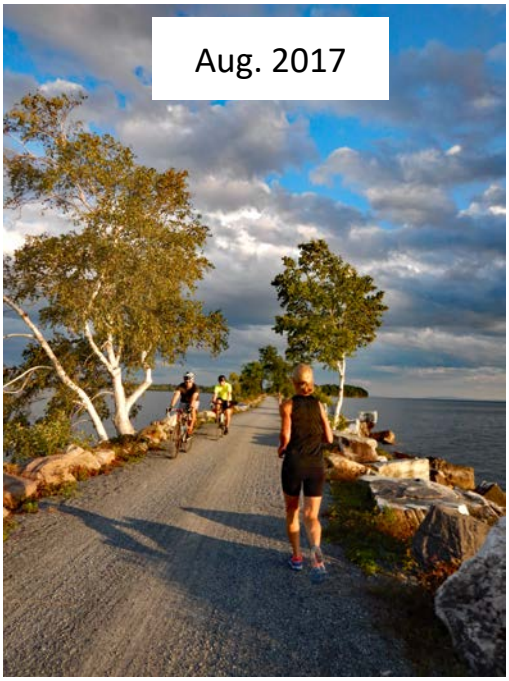














May 4-5, 2018 Storm

The National Weather Service issued a tornado watch for Vermont, including Chittenden County on May 4, 2018. **The May 4-5 storm was significant for the Causeway in that both extremely high lake levels and sustained wind levels occurred. Lake Champlain was 99.82 feet above sea level on May 4, 2018** and at 99.91 feet on May 5, 2019, according to the US Geological Survey.

There were "**surface wind speeds of 60 to 80 mph**" and "downburst wind signature near Airport Park in Colchester, VT," also, “collapsing thunderstorm near Airport Park in Colchester, Vermont…winds of 60 to 70 knots...damaging wind gusts over Colchester Point, "according to the National Weather Service.

The National Weather Service advisories say that waves of 4 feet to 7 feet occur on Lake Champlain at winds of 25-35 knots (29 to 40 mph). Given the lake level was 100’ the day of the storm, the Causeway path surface is 103’, and the wind speed was up to double the NWS advisory, **the Causeway was overtopped by waves much more than 4’.**

The storm continued from late afternoon on May 4th until the morning of May 5th. The Causeway was pummeled for hours by wind and waves.

May 4-5, 2018 Storm (cont.)





Airport Park is 1.05 miles from the Causeway. Above is a picture taken near Airport Park in Colchester and another looking towards Colchester from Essex (just to the East of Colchester) on May 4, 2018.

https://twitter.com/NWSBurlington/status/992482613016387585/photo/1

https://www.weather.gov/btv/Summary-of-the-Severe-High-Wind-and-Hydro-Event-on-May-4-2018

https://waterdata.usgs.gov/nwis/dv?cb_00010=on&cb_00011=on&cb_00095=on&cb_62614=on&format=html&site_no=04294500&referred_module=sw&period=&begin_date=2018-05-03&end_date=2018-05-06

https://forecast.weather.gov/product.php?site=BTV&issuedby=BTV&product=REC&format=CI&version=12&glossary=0

Damage Assessment

On May 5th, Parks and Recreation Director Glen Cuttitta surveyed the trail. Town Manager Aaron Frank and Glen determined that it was not safe for the public to use, and closed the path to the public. Later we opened the path from Mills Point Road to the bridge on the path. The Town was supported by Krebbs and Lansing Consulting Engineers in a subsequent formal damage assessment, FEMA claim, construction plans and contractor oversight.

Colchester Causeway Repairs

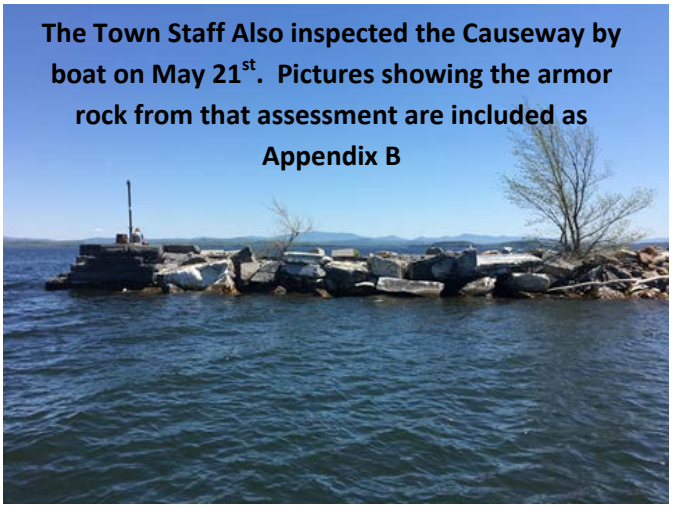
2018-2020



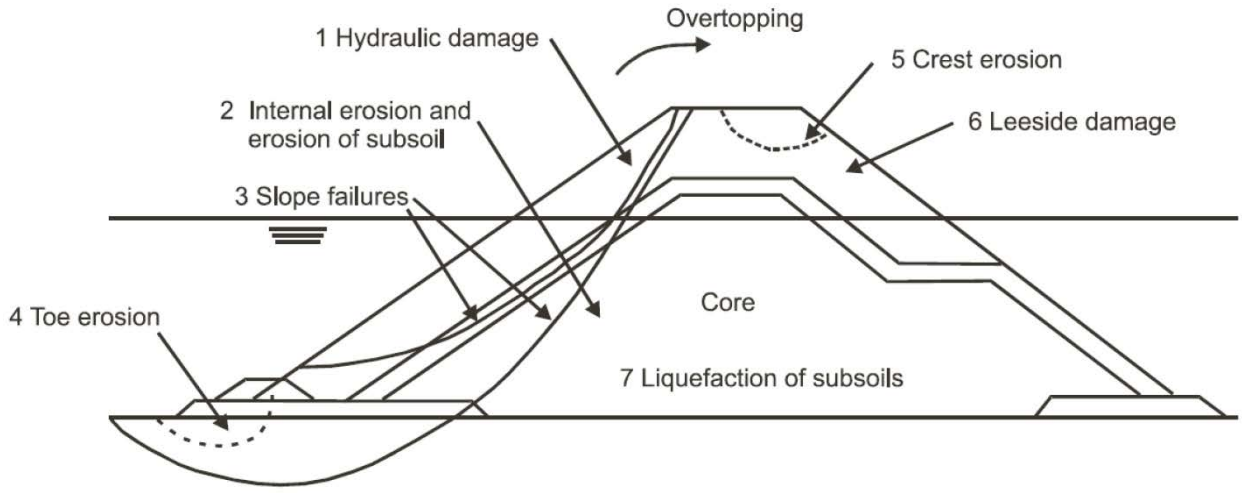








Below is a diagram of how the Causeway was damaged by the high water, wind and waves.



State Emergency Repair

The State of Vermont, through Governor Scott and Transportation Secretary Flynn, recognized that while the Causeway is an asset to the Town of Colchester, it is also important to the region and State, both as a recreation opportunity for residents but also tourism. The tourism component is an important economic aspect of the Causeway being open during peak season. Local Motion runs the bike ferry during the busy summer period, which adds to the use of the Causeway, the State recreation opportunities, the tourism draw, and the economic benefit. The Governor and Transportation Secretary offered to step in and complete emergency work replacing about 2,550 cubic yards, of the total lost volume of 12,450 cubic yards, allowing the Causeway to re-open by July 4th, 2018.

Conclusion

On May 3, 2018, Colchester Causeway contained 133,850 cubic yards of fill, surface and slope material. The Causeway lost 12,450 cubic yards (or 9.3%) of fill, surface and slope material in the May 4-5 storm.

After the emergency repair by the State, the Causeway was is currently in need of about 9,900 cubic yards (7.4% of total) material to bring it back to its May 3, 2018 pre-storm condition. That work was considered completed by contractor JP Sicard following a final inspection on July 29, 2020. Repair work, including the emergency repair, totaled about $1.8M of which most was state and federal funding leaving the Town's share at about $30,000.

