Trestle Trail
Fact Sheet

1. **Deed** – Section of abandoned railway (from Upper Water St. out to Wayne Chetwynd's) was deeded over to the Town on May 10, 1984.

2. **Walking trail** was established utilizing the abandoned rail bed and bridges.

3. The **Town's Municipal Climate Change Action Plan** that was completed in 2013 identifies the Trestle Trail as being very vulnerable to sea level rise and erosion.

4. **Motion** of Council to Contract an Engineer to conduct a condition assessment on the Trestle - May 27, 2013

5. **ABLE Engineering** conducted a structural assessment in July 2013. This was a full inspection complete with photographs and report of the deterioration. (Above and below water level) Their conclusion in 2013 was "In their current condition, the bridges are adequate for pedestrian traffic only. However, to maintain that status, the missing pile situation must be monitored for further deterioration, especially after any storms, surges or ice events". **(Assessment Cost $6,000)**

6. **Motion** to commence surface repairs November 18, 2013 – On Shore Construction replaced rotted decking on the bridges. **(Cost** $2,200)

7. **Ongoing monitoring** was conducted by staff. Unpreventable erosion and further deterioration continued.

8. **April 2017** – Council made the decision to deem the trestle trail unsafe and posted signs based on wording suggested by the Town's Insurance Company **"CLOSED DUE TO UNSAFE CONDITIONS".**

9. **Additional pictures** were taken in April 2017 of the condition. Pictures were posted on the Town's Website complete with an explanation for taking the necessary action.

10. **Notices** were also posted around Town and on the Town's Facebook site.

11. **Region of Queens Trestle issue** – Town staff researched to see how other Municipal Units dealt with their deteriorated bridge. The Region of Queens chose to erect large wooden blockades to prevent anyone from entering and being injured.

12. **Barrington train bridge project** – Town staff researched to see how much it would cost to have a similar bridge replaced in Southwest Nova Scotia. Based on the cost for the Barrington River Bridge, in 2017 it was estimated to cost somewhere in the vicinity of $1.6 million to replace the two bridges here in Lockeport.

13. **Engineer Report** (Municipality of the District of Lunenburg) June 6, 2017 – The District of Lunenburg provided the Town of Lockeport with the services of their Engineer Department to conduct a visual assessment of the access issues with the Town. **(Cost $0)**

    The fact that the Town only has one actual link to the mainland is not acceptable. In the event of the main causeway being cut off due to either an act of nature or an accident, a second access is vital.

The following are the recommendations in **priority** order with corresponding actions taken by Council:

Recommendation #1

Perform an assessment using LiDAR data to determine the optimum elevation required for the protection of the causeway and Old Bridge Road (Calf Island Road). This could be done for the railway trail as well.

Action taken:

LiDAR is detailed topographic mapping and determination of flood risk zones- to better understand flood and erosion risk from coastal hazards such as sea level rise, storm surge and wave run-up. This was completed in 2013 so we already had that data on hand.

Recommendation #2

Complete an engineering design for ensuring the causeway and the Town can withstand rising sea levels; obtain cost estimates to do the same; and, develop a plan to implement recommendations from the engineering study.

Action Taken:

As explained in their tender, ABLE Engineering used this data to develop a recommendation of approach that is reasonable, and in tune with the physical and financial constraints of the Town. Their team is very familiar with the area, and has the ability to recommend an approach the Town can afford, and still meet our requirements. **(Engineer Cost $42,000 – received grant for $21,000 – just as a point of interest) A FUTURE PUBLIC ENGAGEMENT SESSION WILL BE CONDUCTED REGARDING THIS PROJECT**

Recommendation #3

Using the results of LiDAR analysis and how it relates to sea level rise, an engineering design to construct a bridge and to upgrade the existing road on Old Bridge Road (Calf Island Road) should be completed. Request estimated costs with engineering design.

Action Taken:

Harlow Construction raised the elevation of Calf Island Road in 2018 by two feet in the center and tapering off on each end, to prevent flooding. In addition to the fact that there are two residences located on Calf Island, the water lines that service Clearwater, Allendale Electronics, R. Baker Fisheries, the two schools, Surf Lodge Nursing Home, etc. run below Calf Island Road and continue across the back harbour. **(Project Cost $15,000 – just as a point of interest)**

The cost of re-establishing a bridge across from Calf Island Road to Bridge Street, at the north end of the island portion of Town, has yet to be determined.

Recommendation #4

Conduct an assessment of the locations of the undermining of the railway trail approaches and the rate of deterioration of the bridge components. Request a cost estimate for repairing the approaches and for replacing the components of the bridges and the expected life span of the repaired bridges. Also, request a cost for full replacement of the bridges.

Action Taken:

HATCH Engineering was contracted in 2018 to conduct an inspection and evaluation of the two timber trestle bridges and the earth embankment causeway system that connects the mainland to the Town. The purpose of this inspection was to assess the current condition of the bridges and comment on the structural capacity for pedestrian traffic, providing cost estimates. They also provided cost estimates for replacement of the timber trestles to allow vehicle traffic to pass the trail in an emergency. **(Assessment cost $3,337 – received a grant for $1,700)**

Hatch Conclusion and Recommendations:

Upon completion of the visual inspection and assessment of the timber bridges and causeways, Hatch has determined that the overall condition of the structure is poor. However, the timber trestle bridges were originally designed to carry heavy railroad loading, and the structural degradation reduces its load carrying capacity rather than causing a risk of catastrophic failure such as collapse.

While there are significant issues with the pile supports, pile caps and structural members, the structure is currently in adequate condition to accommodate pedestrian traffic without safety risk, as long as the structure does not experience heavy ice loading or further degradation from storm surges.

The approach trails are currently a hazard but can be repaired to accommodate pedestrian traffic.

The structures cannot be opened to any heavier loading than pedestrian traffic in their current condition. It is also not feasible to repair the existing structures for vehicle loading. Much of the key structural damage is related to interior deterioration of the pile support structures which cannot be easily replaced in-situ. *(in their*

original location) Even if structural members of the bridges and pile caps were repaired, there is insufficient substructure to bear the design loads. To retain the crossing, two options were considered with trade-offs between cost and functionality:

Option 1 – Repair Causeway and Approaches to the Trestles

To allow pedestrian traffic, as a minimum, the following shall be completed:

- All trail approaches would have to be repaired to create an even transition from causeway trail to bridges. Where the approaches and trail has washed out, additional riprap *(large stones)* with woven geo-textile backing shall be placed to protect from wave action; and
- The trestle bridges shall be monitored and inspected regularly for further deterioration especially after storm surges and ice events.

(Estimated Cost $153,000)

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To allow emergency vehicle access, the existing timber trestles would require complete replacement:

Option 2 – Removal of the Timber Trestles and Construct New Causeway and Bridge Culverts

To allow pedestrian traffic and emergency vehicles the following shall be completed:

- Removal of both timber trestle bridges

- Complete earthworks to construct two new causeways between the existing. Bridge culverts would be required to control flood water within the salt water lagoon and allow tidal water within the lagoon.

- Placement of riprap along the harbour side of the causeways and in areas which have started to undermine the trail. It may be practical to increase the crest elevation of the new causeway sections to allow for sea level rise.

- Installation of timber guardrail along both sides of the trail.

(Estimated Cost $2.7 million)

Option 1 will be substantially less cost than Option 2. It is difficult to estimate the remaining life of timber bridges where it would be safe for pedestrian traffic. A severe storm surge or ice event could damage the trestles creating unsafe conditions for pedestrians. It is important to monitor and inspect these structures.

14. **Military Support** - The Town of Lockeport was invited to submit a proposed project under the 4 Engineer Support Regiment program. The Town submitted the trestle trail project (Option 1) for consideration. Mayor Harding, Kevin Snow and the Town Clerk/Treasurer met with members of the 4 Engineer Support Regiment so they could get an idea of the condition of the trestle trail that is being considered as a possible project for them to complete. Our project is one on a list of approximately 40 projects in this area that are being considered. Not all projects will be approved but we are hopeful that ours will be. If it is approved, the military will provide the equipment and manpower required **(approximate value $65,000)** and the Town will be responsible for the necessary material. **(approximate cost $88,000)** This opportunity is no longer possible for this year.

15. **Nova Scotia Recreational Trail Expansion Program** – The Town made application under this program and we have received approval for $50,000. (**Cost to the Town would be $103,000**).

16. We are researching additional opportunities for funding for the project. In the event this project proceeds with the military, they will require a space to set up camp for approximately 50 service personnel as well as space for equipment.

17. **Fence/Vandalism** – In April, 2018, Council made the decision to have a fence installed, complete with gates, at each end of the trestle trail. "No Trespassing" signs were attached. This decision was made based on the fact that people continued to use the trail, even though it was not in safe condition. To protect the public, this decision was made at a cost of **$5,400**. The fences were promptly destroyed by vandals.

-18- The tendering process may result in lower costs OR higher costs. The information we are using is from the Engineer Assessment as contracted.

-19- Efforts will continue to be made to find additional funding to offset the cost to taxpayers. Sometimes it is possible to combine funding programs to reduce the cost.

Effect on taxes – Average Residential Assessment in Lockeport is $69,700

Option	Cost to Town	Increase in tax rates based on 10 year borrowing	Average cost per residence per year (approximate)
#1- NS Trails Program (confirmed)	$103,000	4.4 cents	$31.00
#2 – Wait for possible Military Opportunity	$88,000	1.65 cents	$11.50
#3 – Wait for possible Federal Program Approval	$7,210	2.4 cents (One year only)	$16.73 (One year only)
#4 – Do Nothing	Zero Cost	N/A	N/A