

Appendix F

Public Open House #2 Documentation

Display Panels

Open House #2

Boat Harbour Remediation Project



Please sign-in at the registration table upon arrival



Please feel free to approach any team member to discuss the project



Please share your thoughts with us by completing a comment form to ensure your input is captured

www.novascotia.ca/boatharbour



WELCOME!

The purpose of this event is to discuss the preliminary results of the Environmental Impact Assessment (EIA) for the Boat Harbour Remediation Project.

Today we will:

Provide an update on the Boat Harbour Remediation Project

Present information and preliminary EIA findings

Discuss the process for remediation and the proposed sludge disposal cell

Provide an update on the anticipated timelines for completion

Collect your views, ideas and concerns about the project

This Open House is an opportunity for you to...

- Learn more about and give feedback on the environmental impact assessment and proposed solutions
- Review and provide input on proposed impact management measures and future monitoring

A summary report will be available on January 17th, 2020 following incorporation of comments received. The report will be available at:

www.novascotia.ca/boatharbour

Since Open House #1, we have:

1

Collected additional baseline data

2

Developed additional design details on the Preferred Solutions

3

Undertaken the preliminary Impact Assessment and Cumulative Effects Assessment

Today NS Lands is...

4

Presenting the preliminary results of the impact assessment of the Preferred Solutions

Themes of Community Feedback Received to Date

- People are encouraged that remediation will occur
- The closure date of January 2020 should be honoured
- Concerns exist around the long-term plan for the sludge disposal cell
- Concerns exist around the environmental impact on groundwater from dredging up sludge
- Comments that the pipeline should be completely removed
- Suggestions that the sludge material should be shipped to another community



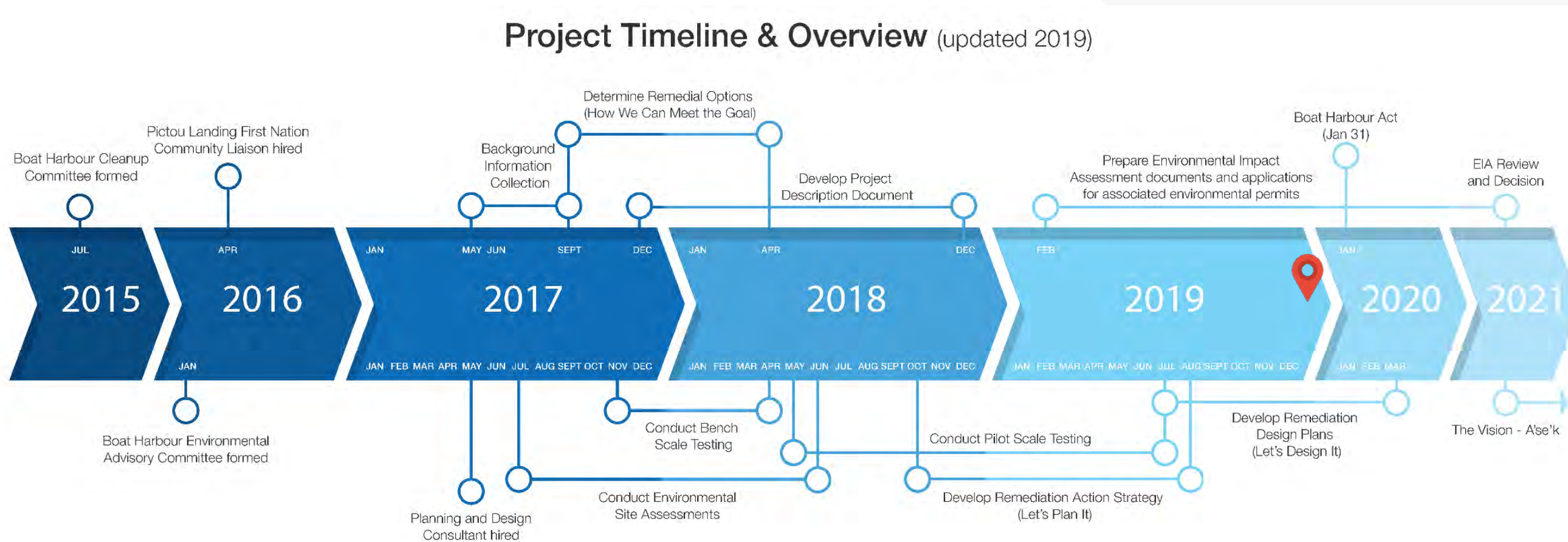
Background

Our Goal

We will remediate Boat Harbour and restore to a tidal estuary. A solution was developed that is:

- Identified and assessed using a collaborative approach
- Founded on proven technologies
- Evaluated with openness and transparency
- Protective of human health and the environment

What's Been Completed?



- Developed a Remedial Objective
- Conducted Bench Scale Testing
- Conducted Pilot Scale Testing
- Completed Baseline Studies
- Consulted with PLFN and Agencies
- Completed Environmental Site Assessments
- Determined Remedial Options
- Developed a Remedial Action Strategy
- Prepared preliminary designs for the proposed solutions
- Completed the impact assessment for the proposed solutions



What needs to be done?

Returning Boat Harbour to tidal requires removing infrastructure and industry contaminants from Boat Harbour. This process includes:

Decommissioning and/or repurposing the existing infrastructure

Removing and managing contamination

Removing the causeway and building a new bridge

Removing the existing dam

It is expected that cleanup will take 4-7 years



Complete/
Nearing
Completion



In
Progress



Pending

Scientific and Technical Planning



Develop remedial objectives, with the vision to return Boat Harbour to a tidal estuary



Conduct studies to determine the extent of contamination and evaluate environmental baseline conditions



Conduct studies to ensure that human health and the environment are protected



Develop and assess remediation solutions in order to propose methods for the cleanup

Regulatory Phase



Regulatory review and consultation



Conduct Environmental Impact Assessment



Indigenous /Public Consultation and Engagement

Clean Up Phase



Permits and Approvals and Contractor Selection



Remediation Implementation



Environmental management and monitoring

Project Components & Activities

Areas for Remediation

Wetland Remediation

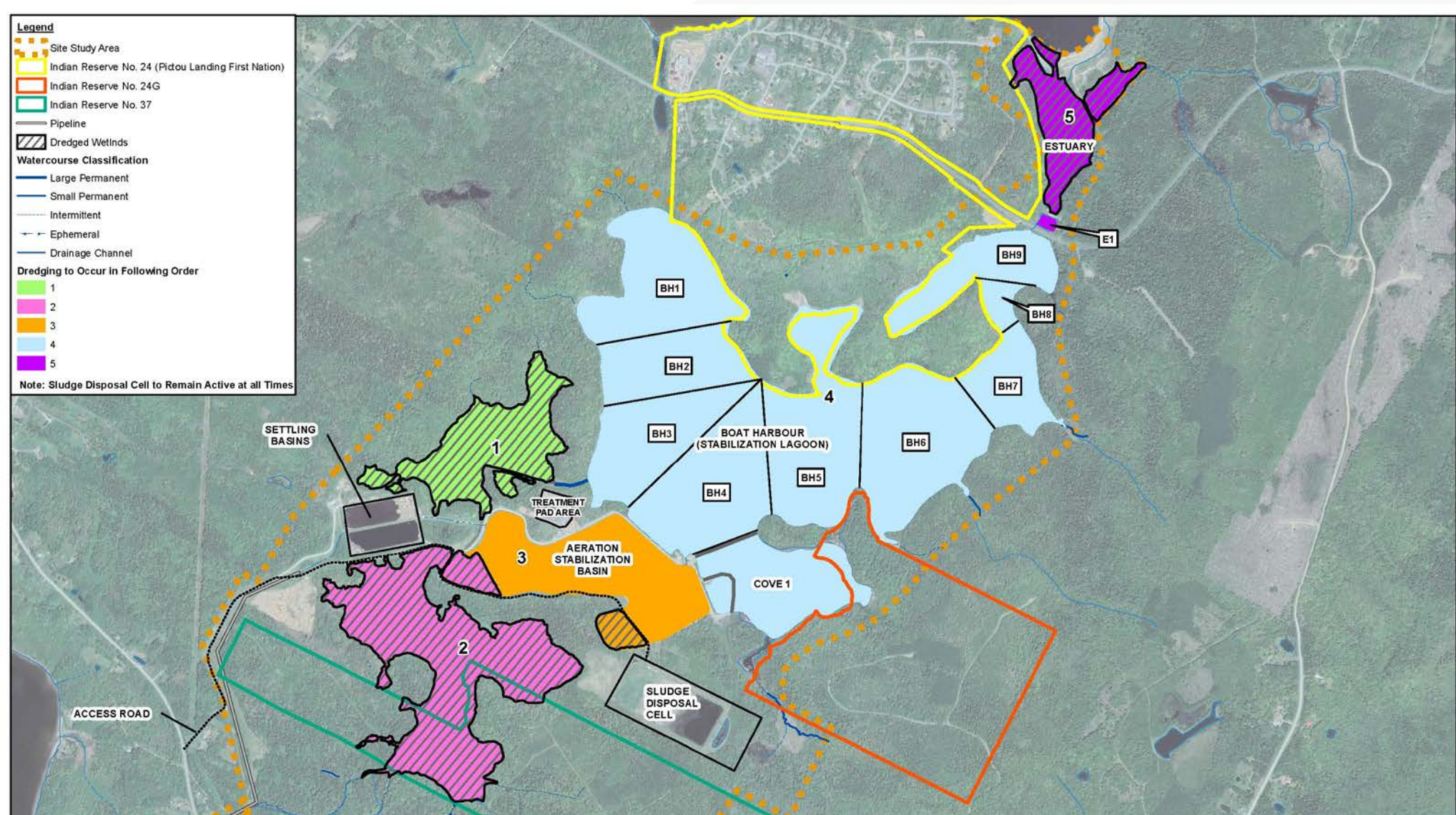
- Impacted area is approximately 38 hectares
- Contains approximately 260,000 m³ of sludge and root mass to be managed

Hydraulic Dredging

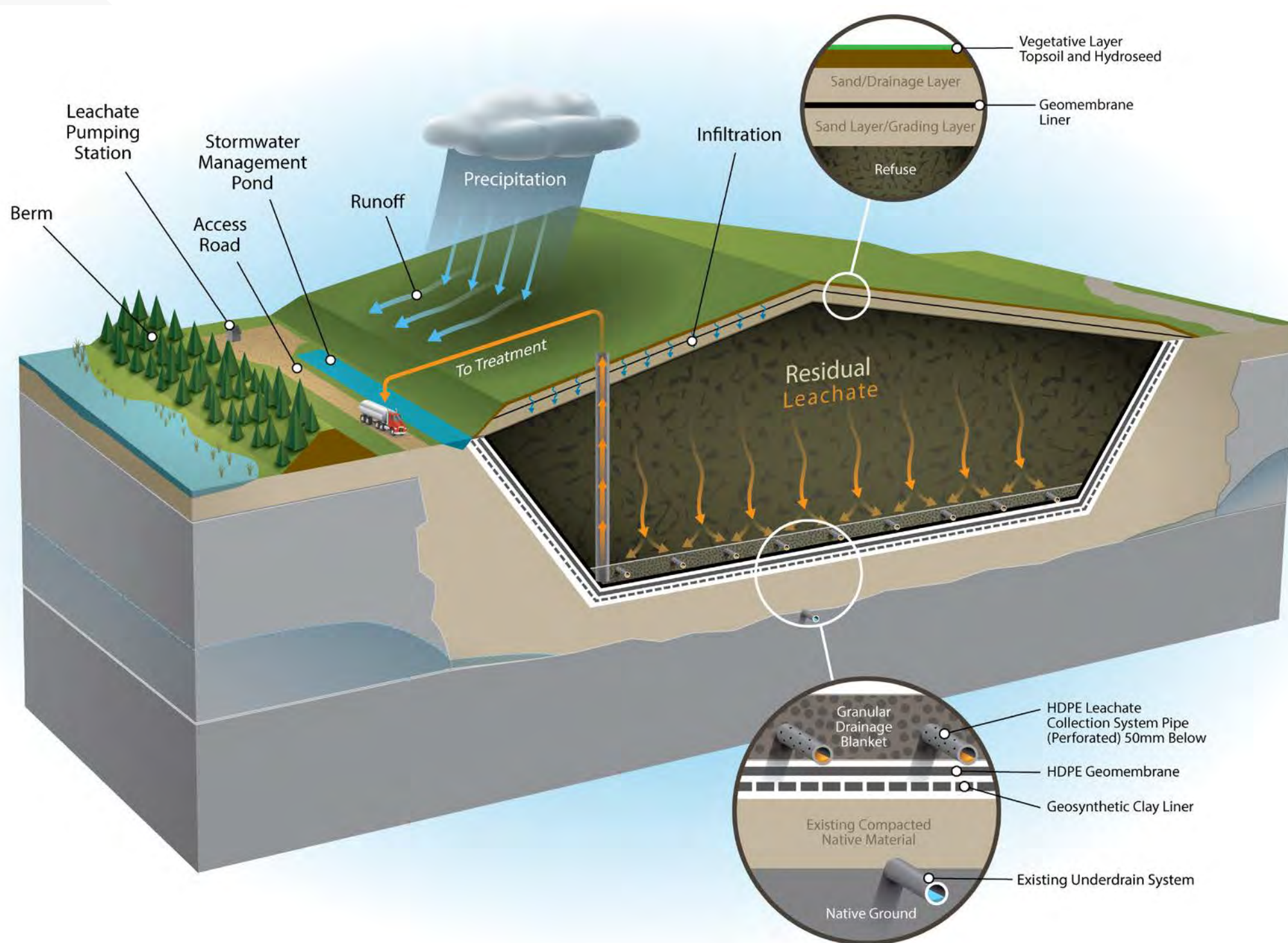
- Aeration Stabilization Basin
- Boat Harbour Stabilization Lagoon
- Wetlands and estuary

Mechanical Dredging

- Settling basins and ditches
- Vegetation overlying sludge



Water Management



Conceptual Cross Section of Sludge Disposal Cell

Bulk Water Management

- Impacted surface water and groundwater
- Contaminant levels will be reduced through surface water and groundwater drainage, also known as natural attenuation

Leachate Management

- Leachate is water that comes in contact with material within the sludge disposal cell
- It is collected and treated via temporary leachate treatment system
- Upon closure of sludge disposal cell, leachate will be directed to a buried tank, pumped and disposed of at an off-site Waste Water Treatment Plant

Project Components & Activities

Waste Management

Sludge Disposal Cell

- Sludge generated from remediation of Boat Harbour Effluent Treatment Facility
- Modifications to enhance base liner system and leachate collection system



Existing
Sludge
Disposal Cell

Virtual Renderings of Proposed Sludge Disposal Cell

View from what was formerly the Aeration Stabilization Basin

Location: Northeast of the sludge disposal cell



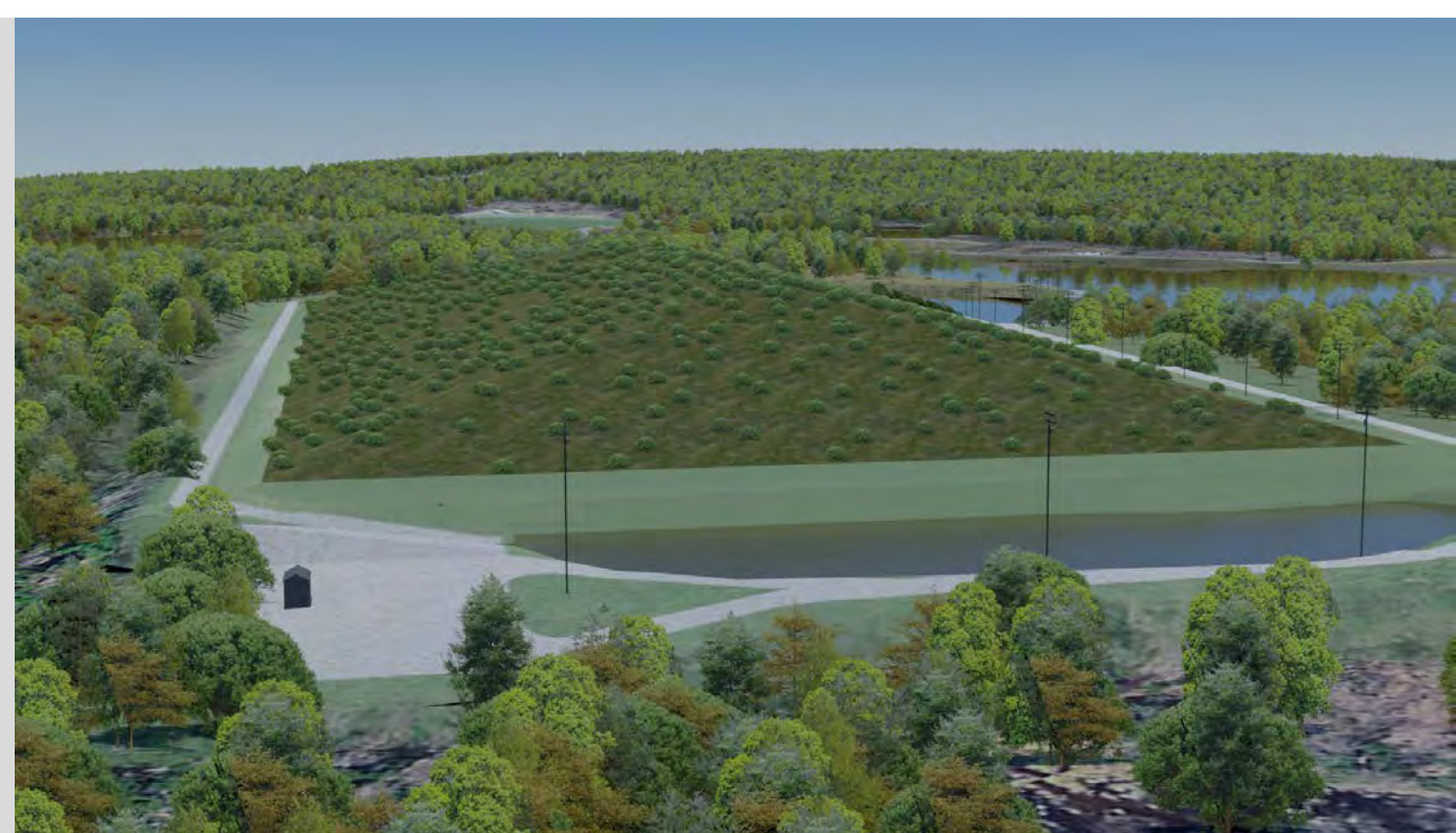
View from driving along the access road on the south side of the harbour

Location: Facing southeast, just before driving up the hill to the sludge disposal cell



View of the sludge disposal cell, leachate pumping facility, stormwater management pond and access roads

Location: South side of the sludge disposal cell



Other Waste Generated During Remediation

- Construction/ Demolition debris
- Industrial waste from remediation activities
- Potential for composting (cattails/organic material removed from wetlands)

Project Components & Activities

Infrastructure

Bridge at Highway 348

- Causeway will be demolished/ decommissioned, replaced with a concrete girder bridge along the same alignment
- Constructed prior to dam decommissioning to allow sediment to be managed within Boat Harbour and prevent its migration downstream to the estuary or Northumberland Strait



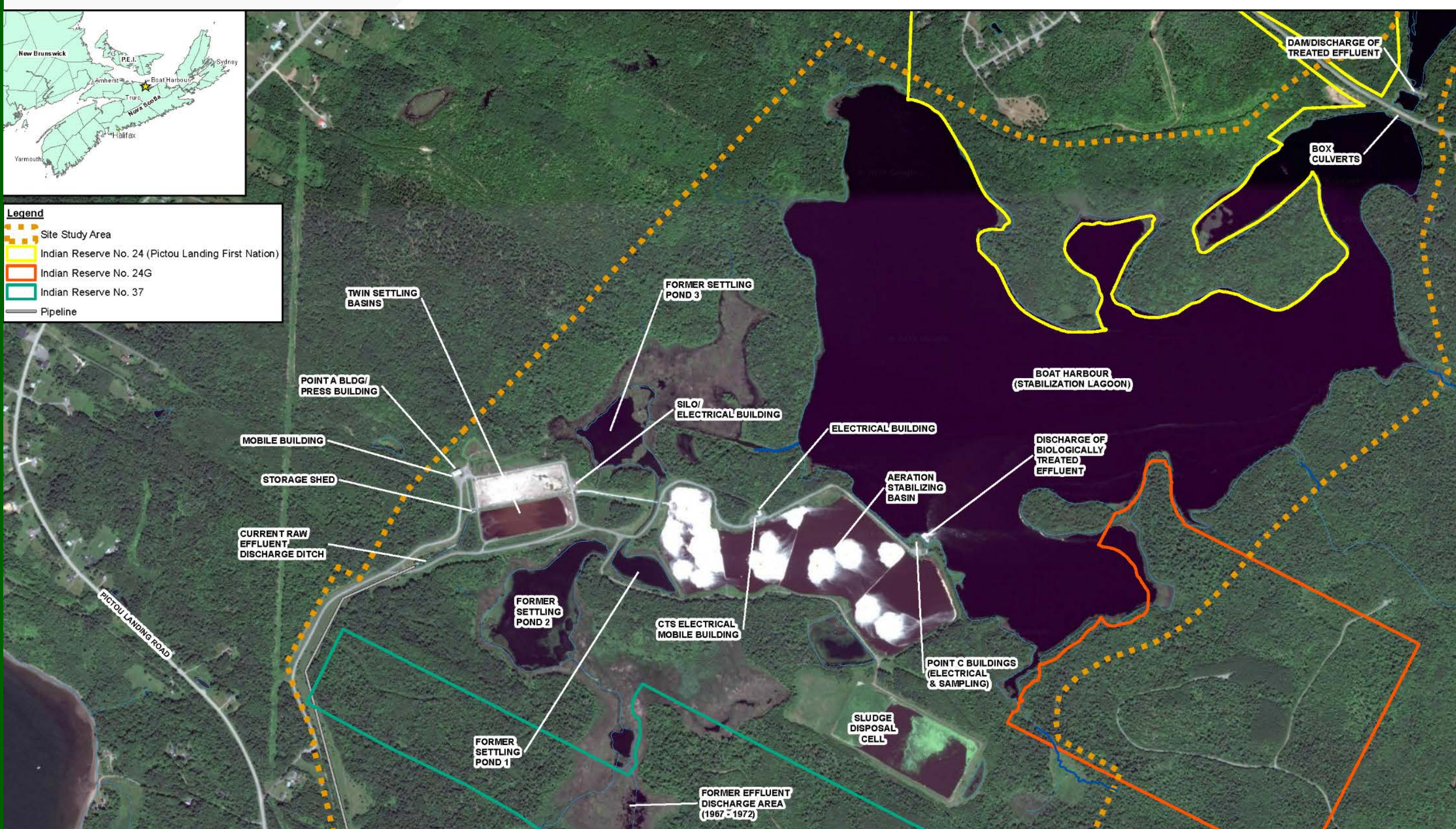
Virtual Rendering of Proposed Bridge

Infrastructure Decommissioning

- Pipeline (on-land and under water)
- Treatment Buildings
- Dam

Remediation Infrastructure

- Water supply pipe to Pictou Landing First Nation
- Site Access
- Permanent and Temporary Linear Infrastructure
- Energy Supply (via overhead lines)



Valued Components

What is a Valued Component?

Valued Components (VCs) are areas of focus for environmental assessments that examine the aspects of the *natural* and *human* environment.

They include components that are considered to have scientific, ecological, economic, social, cultural, archaeological, historical, or any other type of significant importance.

What are the Valued Components for the Boat Harbour Remediation Project?

Air Quality & Odour
Greenhouse Gases (GHGs)
Noise
Light
Geology, Geochemistry, and Soil
Groundwater
Surface Water
Terrestrial Habitat & Vegetation
Wetlands
Mammals & Wildlife
Marine Environment
Aquatic Habitat
Fish & Aquatic Habitat
Migratory Birds
Species At Risk
Mi'kmaq of Nova Scotia
Economic and Social
Human Health
Archaeological/ Cultural Heritage Resources

Potential impacts to the VC's are assessed as part of the EIA process.



Impact Assessment

Mitigation Measures and Significance of Residual Effects

Remediation

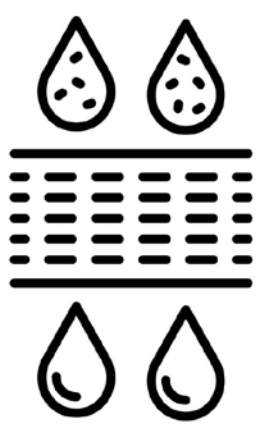
Mitigation Measures



Maintain existing vegetation cover whenever possible and minimize overall areas of disturbance



Clean and inspect equipment prior to arrival to reduce the potential for introduction of non-native species



Use of silt curtains to control suspended sediments



Conduct confirmatory sampling to confirm that remaining sediment meets the applicable remedial quality standards.

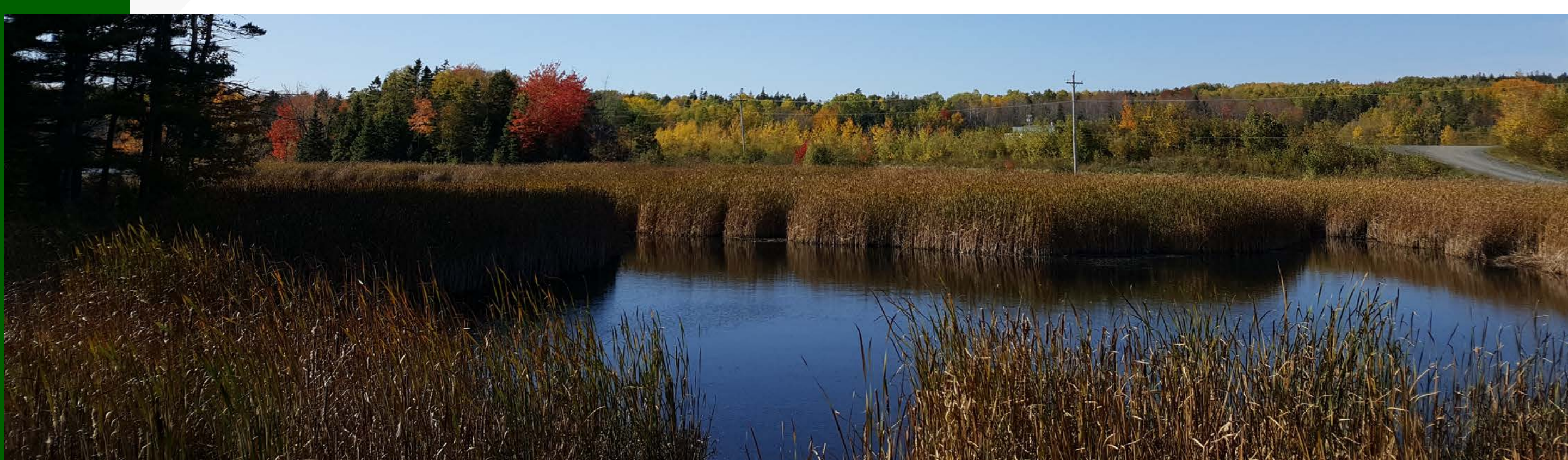


Use of water trucks to suppress dust

Key Residual Effects

- Minor disturbance to sensitive receptors (e.g., residences, schools, parks, hospitals, historic buildings, etc.) and species in the vicinity of the Project area through 24 hour operation of dredging equipment and presence of workers
- Minor adverse residual effects to wetlands and fish and fish habitat from dredging activities, including loss of habitat and mortality of species inhabiting these areas
- Minor adverse effects to air from additional truck/ vehicle movements on site

Adverse effects will be short term and are not anticipated to be significant once restoration activities are complete.



Impact Assessment

Mitigation Measures and Significance of Residual Effects

Bridge at Highway 348 and Infrastructure Decommissioning

Mitigation Measures



Maintain existing vegetation cover whenever possible and minimize overall areas of disturbance



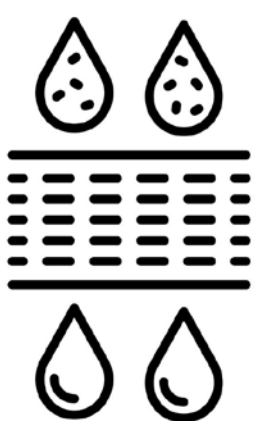
Re-fueling, and equipment maintenance will occur at least 30 m away from any wetland or watercourse



Implement erosion and sediment control practices prior to any soil disturbing activities, when applicable



Use of water trucks to suppress dust



Use of silt curtains to control suspended sediments during removal of dam

Key Residual Effects

Adverse residual effects:

- Increased disturbance in the area from operation of heavy equipment and increased truck traffic
- Temporary bridge construction

Adverse effects will only occur during the Project and therefore are not considered to be significant

Positive residual effect:

- Re-introduction of tidal influence to Boat Harbour



Impact Assessment

Mitigation Measures and Significance of Residual Effects

Waste Management

Sludge Disposal Cell - Design Controls and Mitigation Measures

- Enhancements to base liner system and leachate collection system
- Maintain existing leak detection system
- Increase the height of berms around cell for structural stability
- Minimize the amount of rain that comes in contact with waste
- Use trees and shrubs for visual screening
- Maintain existing vegetation cover whenever possible and minimize overall areas of disturbance

Key Residual Effects

Riparian (shoreline), Wetlands, Aquatic and Terrestrial Environments

- Disturbance to species inhabiting the site from increase in truck traffic for import of materials and equipment (e.g., aggregate for roads and staging areas, and materials for sludge disposal cell construction).
- Loss of terrestrial and wetland habitat through upgrades to existing access roads to the sludge disposal cell.

Surface Water

- Increased surface water runoff required to be managed.

Visual

- Change in viewshed due to capped sludge disposal cell.
- The residual effects are not deemed significant as Boat Harbour is not currently considered to be high value habitat. Any short-term disruption will result in long-term benefit, as all impacted sediment will be removed and native vegetation communities will be established.

Impact Assessment

Cumulative Effects Assessment

Present Activities

- Tire manufacturing
- Large scale printer
- Coal fired generating station
- Kraft paper production

Past Activities

- Ship building and repair
- Chlor-alkali plant
- Steel making
- Fabrication activities

Future Regional Activities may include the Replacement Effluent Treatment Facility Project, Fifteen Mile Stream Gold Mine, Highway 104 Twinning project, MacLellans Mountain Quarry Expansion.

Residual Effects

No significant residual cumulative effects are anticipated as mitigation measures have been implemented for the atmospheric environment, surface water, groundwater, wetlands, fish and fish habitat, health, socio-economics and Indigenous communities.

Accidents and Malfunctions

Accidents and malfunctions are events that are not part of any planned activity or normal operation of the Project. Scenarios that were examined and the potential environmental effects that might arise were predicted to be unlikely to occur.

The following scenarios were considered:

- Accidental discharges of contaminated sediments during dredging
- Erosion and sediment control failure
- Sludge disposal cell failure (liner or cap)
- Leachate storage tank failure/tanker truck spill
- On-Site hazardous materials spill
- Release of effluent from the temporary wastewater treatment facility above effluent criteria
- Failure of a surface water management pond;
- Bridge failure
- Off-Site trucking accident
- Vehicle collision
- Fire

Impact Assessment

Effects of Environment on the Project

The assessment included examining how the following local conditions and natural hazards, and external events could affect the Project:

- Climate Change Effects;
- Extreme weather events, including flooding and drought, extreme temperatures, increased snow, ice, rain, and wind storms;
- Lightning strikes; and
- Seismic events.

No significant adverse environmental effects are anticipated due to the environment, once mitigation measures have been applied.

Follow-Up & Monitoring

Monitoring is a mechanism to gauge Project performance and measure against baseline conditions and effects as predicted in the EA, as well as expectations of regulators, the public, the Mi'kmaq of Nova Scotia and interested parties.

What will be included as part of the monitoring process?

- 1. Environmental Impact Assessment Follow-up/ Monitoring**
 - Verify the accuracy of the impact assessment
 - Determine effectiveness of the mitigation measures implemented to mitigate the adverse effects of the project
 - Identify the need for any new mitigation measures
- 2. Project Monitoring**
 - Specific Plans/ Programs to be implemented once remediation is complete and will continue for many years following the clean up.
 - Includes specific locations, planned protocols, methods
 - Potential engagement of PLFN in future monitoring

Monitoring During and Post Remediation

What has been included in the EIS as it relates to monitoring?

Preliminary monitoring plans have been developed for the following VCs:

- Atmospheric (air quality and odour)
- Groundwater and surface water
- Terrestrial habitat and vegetation
- Wetlands
- Mammals and wildlife
- Marine environment and fish and fish habitat
- Migratory birds
- Species at Risk
- Mi'kmaq of Nova Scotia
- Archaeological/Cultural Heritage Resources

The monitoring plans will be further developed upon federal approval of the EA in consultation with Indigenous communities and regulatory agencies.

As committed to in the EIS the results of monitoring will be documented and where appropriate made available to stakeholders.



What's Next?

- ▶ Responses to public feedback will be provided on the Boat Harbour website
- ▶ Impact management measures and recommended monitoring programs will be confirmed in light of comments received
- ▶ The Draft Environmental Impact Statement will be prepared
- ▶ Stakeholders will be notified of review opportunities

How do I submit comments?

To ensure your views are considered, please submit your comments to NS Lands by:
January 3, 2020.



Complete a comment form today

Submit a comment on the website
www.novascotia.ca/boatharbour

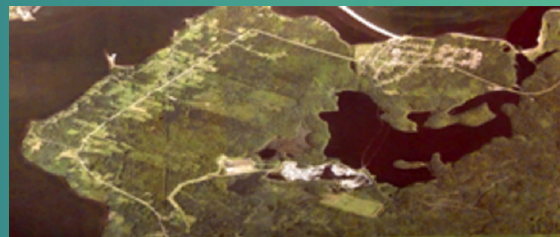
Submit a comment via email
boatharbour@novascotia.ca

Submit a comment via mail
Nova Scotia Lands
PO Box 397, Stn Central
Halifax, NS B3J 2P8

Public Open House #2 Summary Report

Boat Harbour Remediation Project

Public Open House #2



Nova Scotia Lands (NS Lands) has submitted a project description to the Impact Assessment Agency of Canada (formerly the Canadian Environmental Assessment Agency), which proposes the various ways the Boat Harbour Effluent Treatment Facility (BHETF) and surrounding areas can be remediated. As part of the federal assessment process, NS Lands has hosted multiple open house events for the public and for members of Pictou Landing First Nation. The second public open house was held at Pictou Landing Fire Hall on December 10, 2019.

Comments on the Project

Attendees had the option of completing a hard-copy comment form or submitting comments via email or regular mail. Members of the remediation team also captured verbal questions during the open house. The comment period remained open for three weeks following the event. The following table summarizes the comments received and NS Lands' responses.

Public Comment	Response from NS Lands
<p>Containment cell: Participants asked several questions about the containment cell, including:</p> <ul style="list-style-type: none">• What kind of liner will the cell have?• How will runoff water be treated?• Why must the waste be kept in an onsite cell?• Can power lines to the cell be buried underground?	<p>Nova Scotia Lands prepared an infographic on the containment cell to answer questions about the construction, use and long-term maintenance of the cell. Copies were available at POH#2. The infographic is available on the Resources page at novascotia.ca/boatharbour</p>
<p>What will happen to the wetlands near Boat Harbour?</p>	<p>The wetlands will be remediated and contamination removed. Work is still being done to determine the scope of remediation needed in the wetlands.</p>
<p>Will we have to worry about vibrations from hitting bedrock?</p>	<p>No, we will not be excavating to bedrock.</p>
<p>How will you prevent clean areas in Boat Harbour from re-contamination?</p>	<p>Double silt curtains will be used to isolate areas within Boat Harbour, so contaminants do not leak into already-cleaned areas.</p>
<p>Will groundwater be protected?</p>	<p>We have tested groundwater at different points in the pre-remediation process and there are no signs of contamination. Best practices will be in place to ensure groundwater remains clean.</p>
<p>Will the cleanup increase the smell around Boat Harbour?</p>	<p>An independent air monitoring program was in place throughout the pilot testing and there were no increases in contaminants or odours in the air during pilot testing. Air monitoring reports are available on the novascotia.ca/boatharbour website. Air monitoring will continue throughout full-scale remediation.</p>

**Public
Comment**
**Response
from NS Lands**

When will full remediation begin and how long will it take?

Full-scale work can't begin until NS Lands has an environmental approval from the federal regulators. It is anticipated this could happen by spring 2021 and remediation work could begin in late 2021. Remediation is expected to take 4–7 years.

Who will own the property that currently makes up the Boat Harbour Effluent Treatment Facility (BHETF) once cleanup is complete?

In 1996, the provincial government issued an Order in Council that BHETF property would be transferred to Pictou Landing First Nation after remediation is complete.

Will there be more mosquitoes around Boat Harbour after it is returned to tidal after cleanup?

Returning Boat Harbour to a tidal, salt-water estuary may reduce the presence of mosquitoes.

Who did the archaeology work around Boat Harbour?

CRM and Boreas Heritage Consulting did the archaeology work.

How will the land be used after remediation? Heard that a seniors' complex would be built along the shoreline.

Pictou Landing First Nation is developing a future land use plan, with support from NS Lands. Those decisions on future site use are still to come.

When Boat Harbour returns to tidal, will it have an impact on the volumes of sand along nearby shores?

Part of the work still outstanding for the Environmental Impact Assessment submission is transport modelling. This will predict where materials will be carried (accumulated and/or eroded) by tidal activities in and around the site after tidal conditions are returned. We do not know the results yet, but hope to soon.

Is there a fixed budget to complete the work? What happens if the government changes?

The liability for Boat Harbour remediation is updated as accurately as possible, as new information is received. The current estimate is about \$250 million. The federal government has committed \$100 million and the province will cover the rest. We are committed to restoring Boat Harbour as effectively and efficiently as possible and ensuring it can be used by the community for generations to come.

**Public
Comment**

**Response
from NS Lands**

Received via email:

I am wondering if the aerators will continue to be used in Boat Harbour after January 31, 2020.

A site decommissioning plan and an associated management plan are currently being developed.

Received via email:

A minor point: Can the project include a small boat launch site on the cleaned-up Boat Harbour? This body of water has received huge publicity over the last few years or decades, which will increase as the clean-up proceeds and the estuary's environment recovers.

A post-remediation land-use plan is being developed. Boat Harbour and the surrounding lands will be returned to the possession of Pictou Landing First Nation, and the community will make final decisions around future site use.

Comments on the Project are welcome at any time. All feedback received will be nonattributable and will be included as part of public record. Comments can be submitted through the following methods:

Email | boatharbour@novascotia.ca

Mail | Nova Scotia Lands, PO Box 397, Stn Central, Halifax, NS B3J 2P8