



GEMTEC

CONSULTING ENGINEERS
AND SCIENTISTS



**FREDERICTON REGION
SOLID WASTE**

Environmental Impact Assessment (EIA)

Fredericton Landfill Maximum Height Increase Project

EIA Registration # 4561-3-1551

Fredericton, New Brunswick

EIA - Fredericton Landfill Maximum Height Increase Project

- What is being proposed and the need for the undertaking;
- Benefits of a Successful Application;
- Environmental Impact Assessment (EIA) Overview;
- Valued Environmental Components;
- Identifying Potential Impacts and Mitigation Measures;
- Timeline + Next Steps; and
- Opportunity for Questions from the Public.

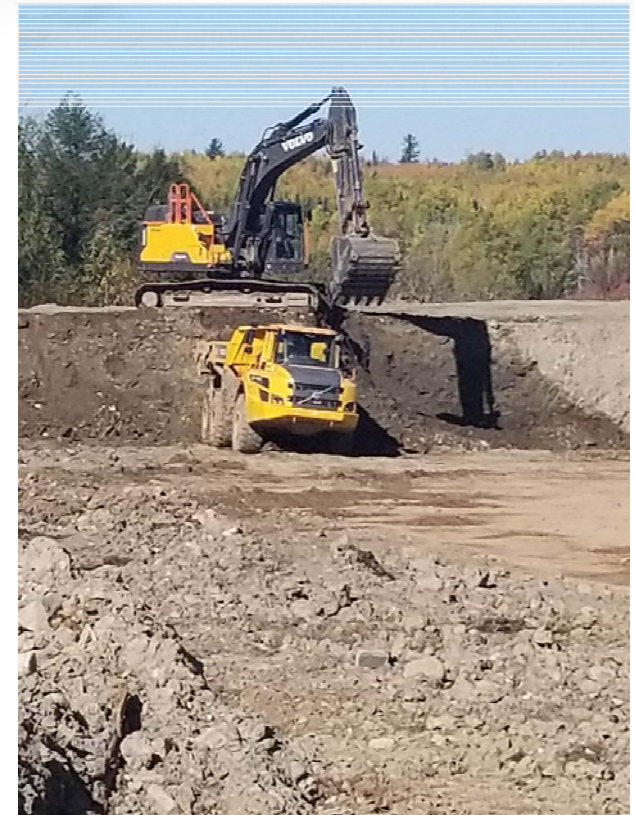
FRSW and RCS11 – Who We Are

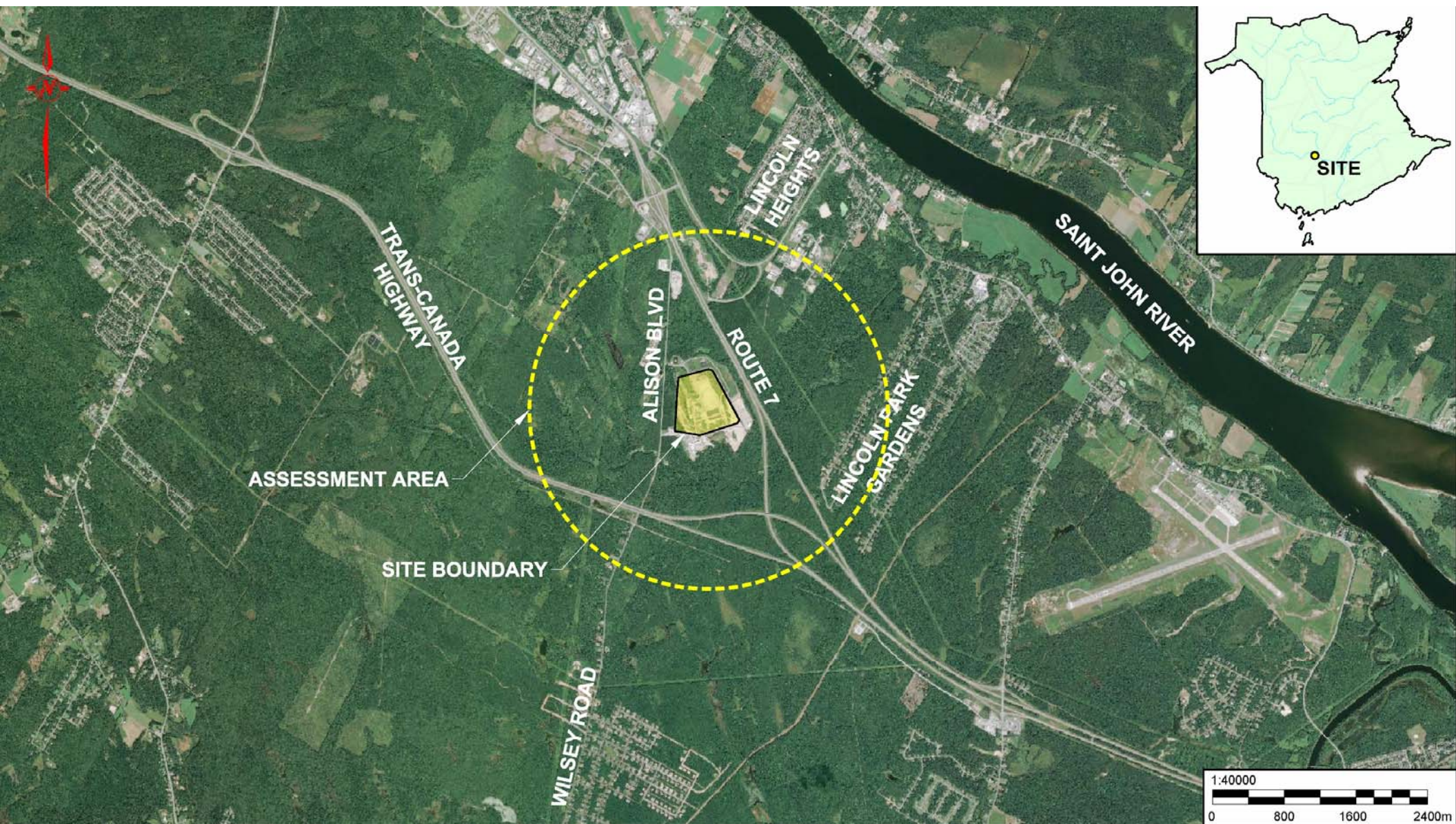
- Fredericton Region Solid Waste Commission opened to the public in 1986.
- FRSWC fell under Regional Service Commission 11 in 2013 and changed its name to Fredericton Region Solid Waste.
 - FRSW is a public non-profit entity.
- The regional landfill covers some 125-kilometre population radius.
- FRSW serves approximately 142,000 customers in its expansive territory.
- Twelve municipalities and numerous LSDs are member communities of RSC11



The Project

- Fredericton Regional Landfill
 - Opened in 1986; Regional landfill since 1993
 - Enough existing capacity until 2043
- Increase landfill height from Elv. +59 to +88 metres
 - Overall height increase of 29 metres (About 95 feet);
 - Maintains current landfill footprint and exterior slopes
 - Caps old landfill area (improvement)
- Extends life of current landfill site by 17+ years
- Reduction in construction costs (Fees)
- Maintain current service area





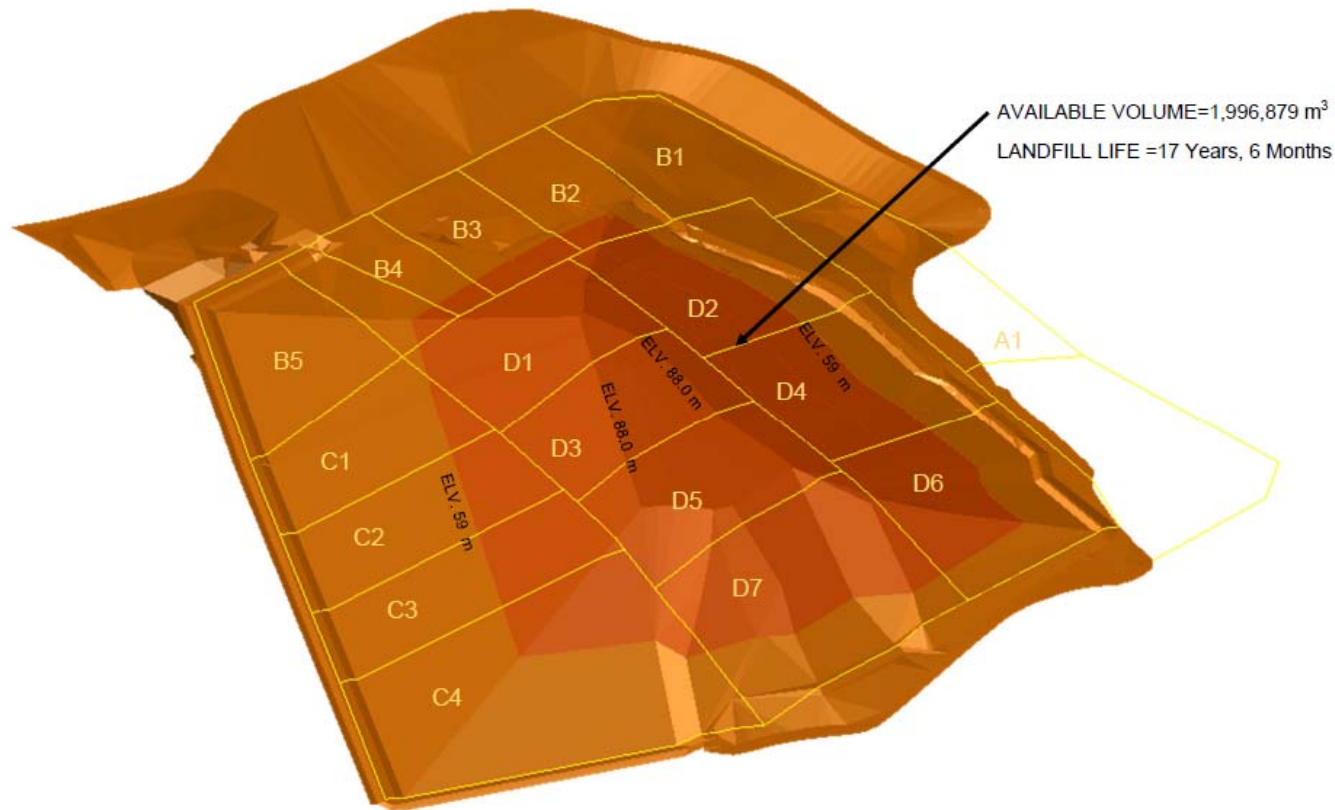


Geodetic Elevation Explained

- Geodetic elevation refers to mean sea-level.
- Current height approval allows disposal to +59 metres geodetic.
- Requesting an increase to +88 metres
- This does not mean the landfill will appear to be a mountain that is 88 metres tall.
- Base elevation is roughly 30 metres.
- 4:1 slopes from the edge of the footprint results in a peak elevation of 88 metres geodetic.
- Only a small portion in the centre of the site will reach this elevation.



Geometry of Proposed Final Landfill



Benefits to Communities and Residents

- Increased lifespan of Landfill
 - Additional useable volume of approx. 2 million cubic metres.
 - Extends life of landfill by over 17 years.
 - Makes sense to maximize the life of the current site.
 - Significantly delays need to site new disposal facility.



Benefits to Communities and Residents

- Utilizes existing infrastructure:
 - Leachate collection system
 - Leachate treatment facility
 - Surface water treatment pond
 - Landfill gas management system
- Reduced construction, operation and maintenance costs.
- Significant savings to rate payers through tipping fees.



Benefits to Communities and Residents

- Significantly Lower Cell Costs
 - Piggy-Backing cells - Building new cells on top of existing cells has been standard practice for over 5 years at FRSW.
- Savings realized from liner and excavation requirements.
- Results in dramatically lower cell costs.
- Cell construction costs reduced by a factor of 10.
- Life extended from 2043 to at least 2060



Environmental Impact Assessment (EIA) Overview

Regulatory Requirements

- New Brunswick's *Environmental Impact Assessment Regulation* (Regulation 87-83)
- Legislative framework for proactive environmental planning including opportunities for public involvement.
- The Clean Environment Act, RSNB 1973, c C-6 is the source legislation for *Regulation 87-83*.

The proposed project is specified as an undertaking outlined in *Schedule A* of the *New Brunswick Environmental Impact Assessment Regulation 87-83* under paragraph:

(m): all waste disposal facilities or systems.

Project is considered a significant change to landfill operations, therefore EIA was required.

Environmental Impact Assessment (EIA) Overview

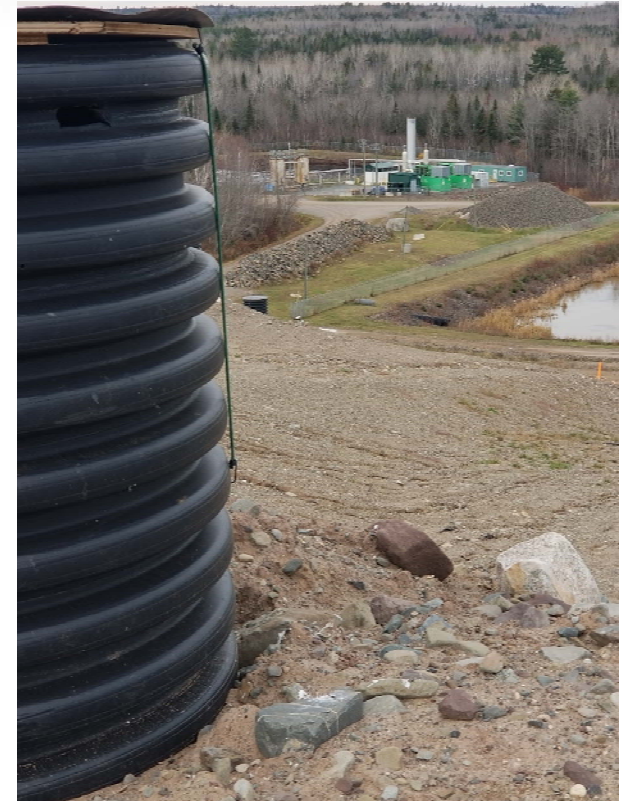
EIA Methodology

1. Existing Environment
2. Project Description
3. Potential Impact Pathways
4. Valued Environmental Components (VEC);
5. Mitigative Measures; and
6. Significant Residual Effects.

Identifying and Eliminating Potential Concerns

No Additional Environmental Impacts Expected

- No increase in landfill footprint
- No destruction of wildlife habitat.
- No removal of vegetation.
- Not within 30 metres of watercourses or wetlands
- Existing mitigation measures continued and expanded as needed



Valued Environmental Components (VEC)

- Atmospheric Environment;
- Groundwater Resources;
- Ecological Environment;
- Land Use and Economy;



Potential Impacts and Mitigation Measures

- Potential for an increase in windblown dust and debris
 - Negligible difference in wind speed and atmospheric pressure between +59 and +88 m

Mitigation Measures

Ongoing monitoring and dust suppression measures

Mechanical baling of waste – less loose debris

Maintain debris fencing (double line) and expand if needed

Maintain visual berm and vegetated buffer on landfill property

Continue with covering and sequential capping measures

Reduced size of containment cells

Potential Impacts and Mitigation Measures

- Increased potential visibility of landfill
 - Conducted sight-line analysis using 3D Model within and beyond the assessment area
 - Increased visibility of cells from highways, some local roads, and open areas in Industrial Park, generally +1 km away
 - Should not be visible from nearby residential properties

Mitigation Measures

Maintain vegetated buffer on landfill property

Cell operations – fill and cover east side first, creating visual barrier

Continue sequential capping of filled areas

Enhance vegetation on visual berm

Potential Impacts and Mitigation Measures

- Groundwater and surface water protection
 - Increased load will not affect integrity of current liner system which has proven to be effective
 - No issues identified with groundwater / surface water identified since landfill has opened

Mitigation Measures

Maintain ongoing sampling and testing (monitoring wells and surface water)

- Surface water and underdrains monthly
- Groundwater monitoring wells 3 times a year

Expansion of leachate collection system

Maintain existing collection and treatment facilities (pond, piping, and pumps)

New cells on old landfill area will serve as a cap enhancing capture of leachate

EMP - covers measures for reporting and remediation of accidental spills

Potential Impacts and Mitigation Measures

- Potential for increase in light and noise emissions
 - No planned new sources of light
 - Negligible difference in wind speed and atmospheric pressure between +59 and +88 m
 - No complaints about noise or light from the public since landfill has been operated by FRSW

Mitigation Measures

Maintain vegetated buffer on landfill property

Maintain onsite equipment (mufflers, etc.)

No new sources of light or noise associated with higher elevations

Landfill generally operates only during daylight hours (7:30 AM to 5:30 PM)

Closed Sundays and holidays

Potential Impacts and Mitigation Measures

- Potential for increase in Odorous Emissions
 - Negligible difference in wind speed and atmospheric pressure between +59 and +88 m
 - No complaints from the public in over 3 years.

Mitigation Measures

Continue with sequential capping of filled areas

Expansion of LFGUS – additional horizontal collection pipes and vertical wells

Recent improvements – H₂S absorption system

Smaller cell size, with reduced areas of MSW open to the atmosphere

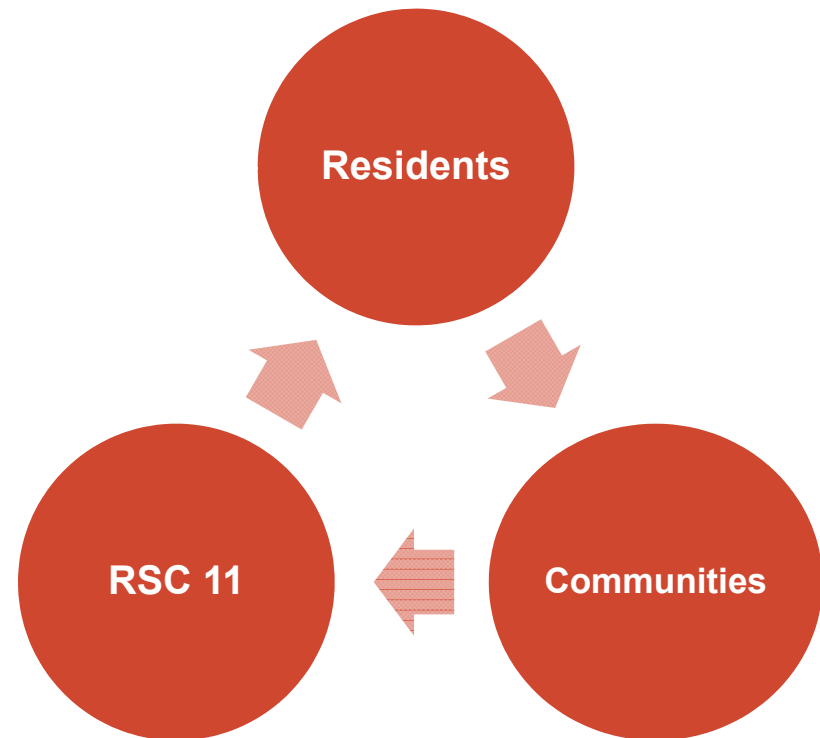
Building on top of old landfill area will reduce LFG emissions from that area

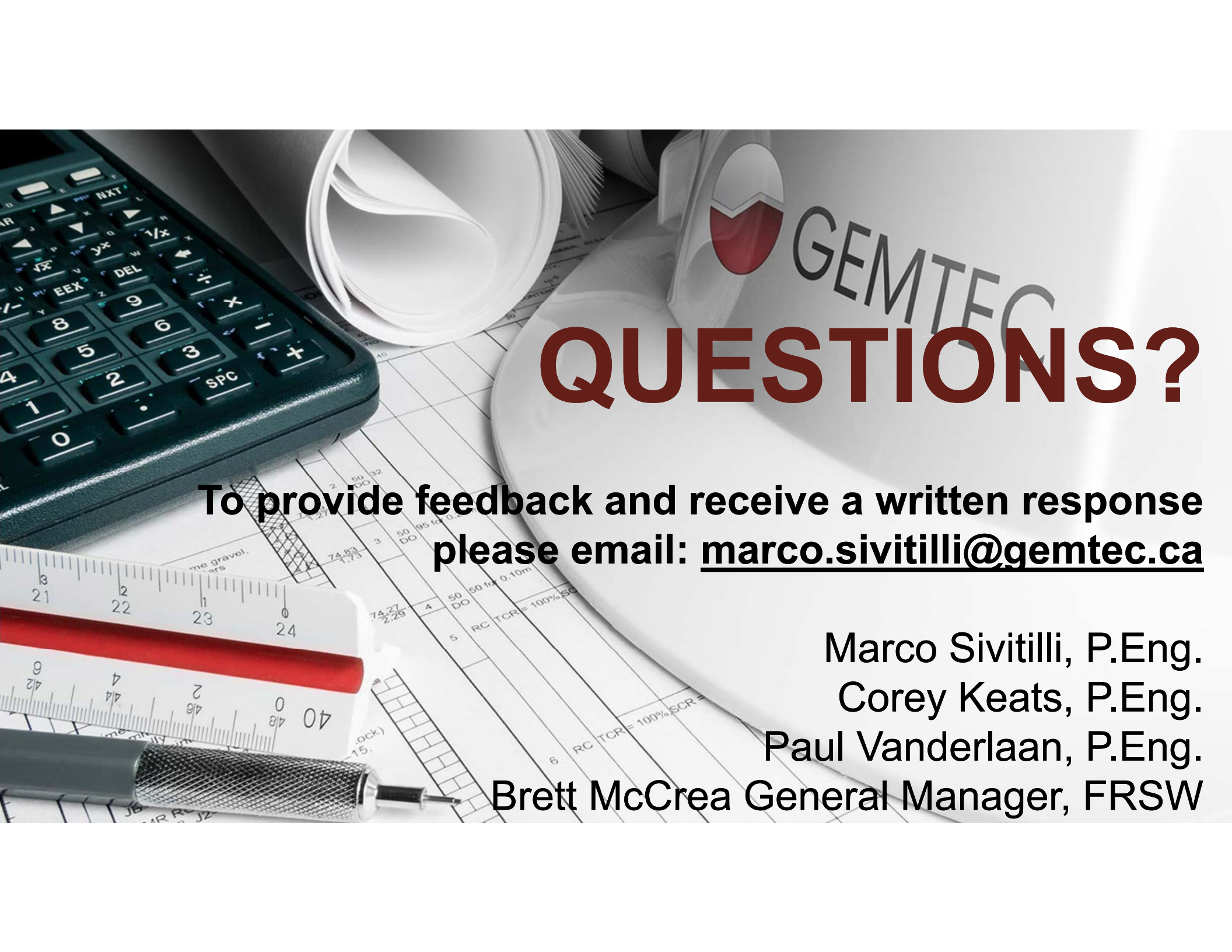
Next Steps + Timeline

Work Component	Schedule
Submission of EIA Report to NBDELG (EIA Registration)	Completed November 2020
Response to First Round Technical Review Committee (TRC) Questions	Completed January 2021
Public Consultation	On-Going
Additional Rounds of TRC Questions	On-Going Winter – Spring 2021
Target for Final Determination of Project by NBDELG	Summer 2021
Begin depositing MSW above +59 metres	2023

Why Your Input is so Important to Us

- RSC11 serves all municipalities and unincorporated areas in the region.
- FRSW has provided waste management and recycling services to our member communities for 35 years.
- Committed to transparency and view public consultation as an opportunity to improve the project





QUESTIONS?

**To provide feedback and receive a written response
please email: marco.sivitilli@gemtec.ca**

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