



**Jacobs**

# **Biosolids Composting Facility Municipal Class Environmental Assessment Study**

**Virtual Public  
Information Centre**

Available online from  
March 28 to May 2, 2024

# Purpose of Public Information Centre

- Welcome to the virtual Public Information Centre (PIC) for the **Halton Region Biosolids Composting Facility Municipal Class Environmental Assessment (MCEA) Study.**
- The purpose of this PIC is to:
  - › Share information about the study.
  - › Gather input on the preliminary preferred location for a biosolids composting facility within Halton Region.
- Your feedback and comments are important to us.





# Project Background

- Halton Region owns and operates six wastewater treatment plants (WWTPs) that clean wastewater and safely return the water back to the environment.
- The solids by-product of the wastewater treatment process, known as “biosolids,” is rich in organic matter and nutrients.
- The local agricultural community has been using biosolids for crop production for over four decades.



# Project Background (Continued)

**2012**

Biosolids Master Plan recommends further investigation of biosolids composting to complement the Region's current land application program.

**2015**

Biosolids Composting Pilot Study confirms that compost made using biosolids meets Provincial compost quality requirements.

**2020**

Biosolids Composting Feasibility Study recommends a Region-owned biosolids composting facility to make biosolids compost.

**2021**

Regional Council provides approval for Halton Region staff to proceed with a MCEA Study.

**2022**

Halton Region initiates a Schedule B MCEA Study to identify the preferred location for a Region-owned biosolids composting facility.



# Study Area

- The biosolids composting facility will be located in Halton Region.



# Municipal Class Environmental Assessment Process

- The study is following the approved environmental planning process for a Schedule B MCEA Study. This is done in accordance with the Municipal Engineers Association MCEA Study process.



# Existing Conditions

## Halton Region Biosolids Management Program

- The Region owns and operates six wastewater treatment plants (WWTPs). The plants have a total treatment capacity of 370,000 m<sup>3</sup>/day and treat a combined total wastewater flow of about 245,000 m<sup>3</sup>/day (2019 to 2021) – this is the equivalent of about 100 Olympic sized swimming pools full each day.
- The Region's wastewater treatment plants generate biosolids.
- Biosolids generated at the Skyway and Mid-Halton WWTPs are dewatered onsite, which means that extra water is removed from the biosolids to minimize the amount that needs to be hauled away.
- Biosolids generated from the four other facilities are transported to the W.A. Bill Johnson Biosolids Management Centre (BMC).
- All biosolids are beneficially reused through seasonal agricultural land application and mine tailings area reclamation.



# Existing Conditions (Continued)

## Halton Region Biosolids Management Centre (BMC)

- The BMC has 10 storage tanks to hold the biosolids, a dewatering station to remove excess water from the biosolids, and an administration and maintenance building.



*Aerial View of Halton Region BMC.*



# Changes and Challenges Affecting Biosolids Management



## **Changes affecting biosolids management:**

- More biosolids generation due to population growth.
- Increased development reducing agricultural land availability for biosolids application.



## **Challenges affecting biosolids management:**

- Most of the Region's biosolids are managed outside of the region (75% is currently exported to agricultural land and for mine tailings area rehabilitation).
- Increased transportation distance, resulting in increased carbon emissions and weather-related risks during transportation, such as spills.
- Risk of increased landfill needs (as contingency for biosolids disposal).

# Problem/Opportunity

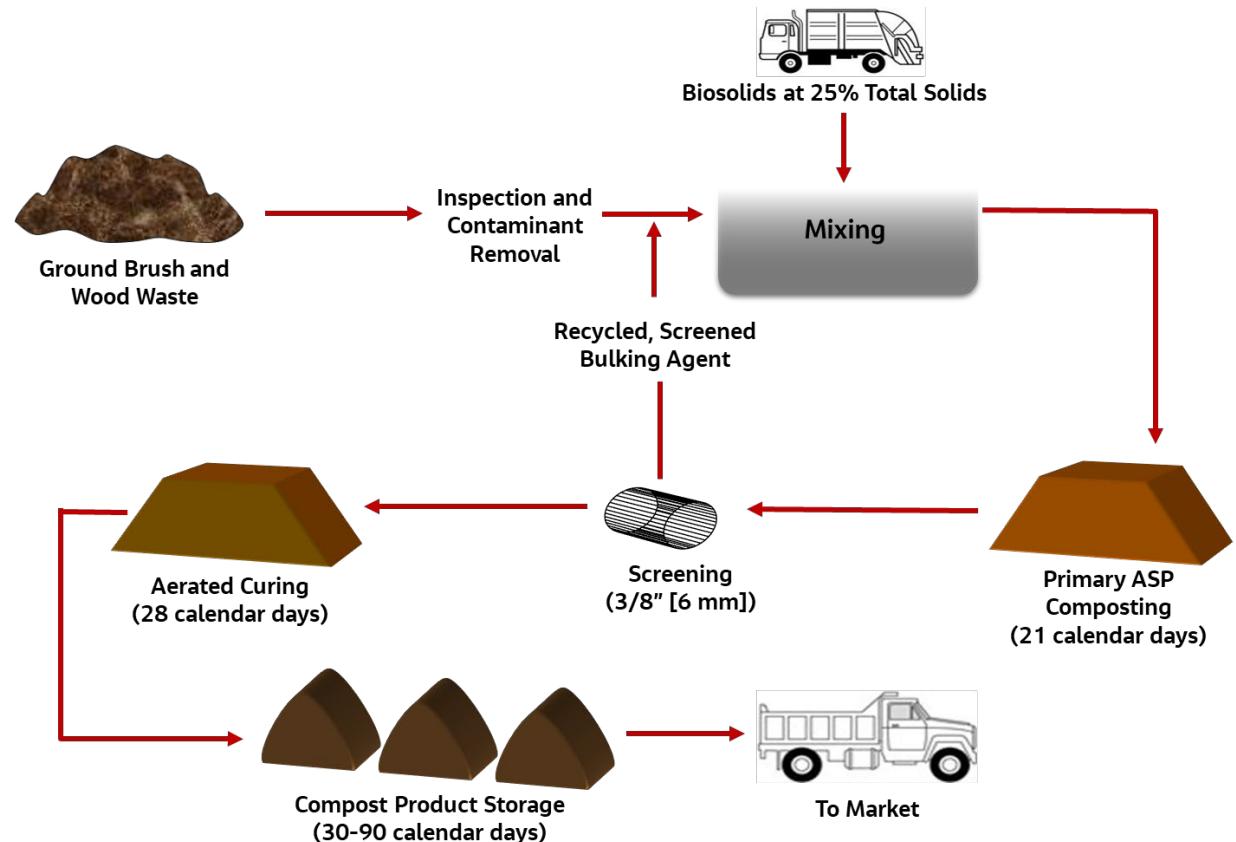
- To address the changes and challenges described on the previous slide, we are looking into a Region-owned biosolids composting facility.
- This MCEA Study will identify the preferred location for a Region-owned biosolids composting facility, which will include the following components:
  - › Biosolids composting process.
  - › Bulking agent (woodchips) storage.
  - › Odour control system.
  - › Office space.



# Composting Technology

## Aerated Static Pile (ASP) Biosolids Composting

1. Biosolids and bulking agents are received and mixed.
2. Mixed material is transferred to the composting system.
3. Composting of dewatered biosolids is conducted in the primary ASP composting system.
4. Once composting is complete, the composted material is screened to improve quality.
5. Screened bulking agents are recycled back to the compost mixing operation.
6. Aerated curing of the screened compost. This process takes 28 days.
7. Compost is then stored for one to three months (depending on market need).

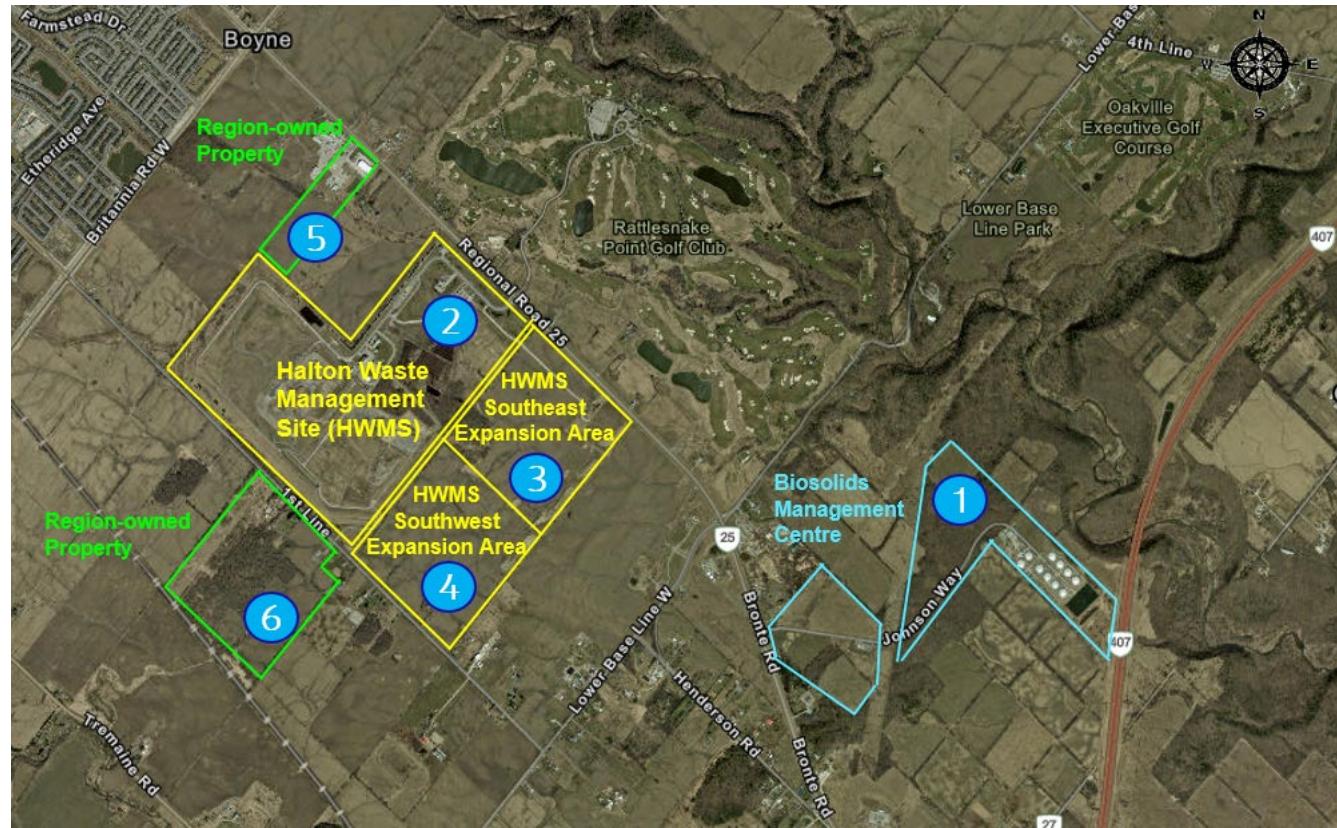


*Process flow diagram for a typical ASP biosolids composting facility.*

# Identifying Site Alternatives

Determining potential locations for a facility around the BMC

- The proposed facility site will ideally be:
  - › About four to five hectares.
  - › A Region-owned property.
  - › Located near the Biosolids Management Centre (BMC) to minimize biosolids transportation distance.
- Six Region-owned properties near the BMC were identified as potential locations for the proposed facility and were included on the long list of site alternatives. These six locations are shown in the figure to the right.
- A new, generic, non-Region-owned site was also considered feasible, which would require land acquisition.

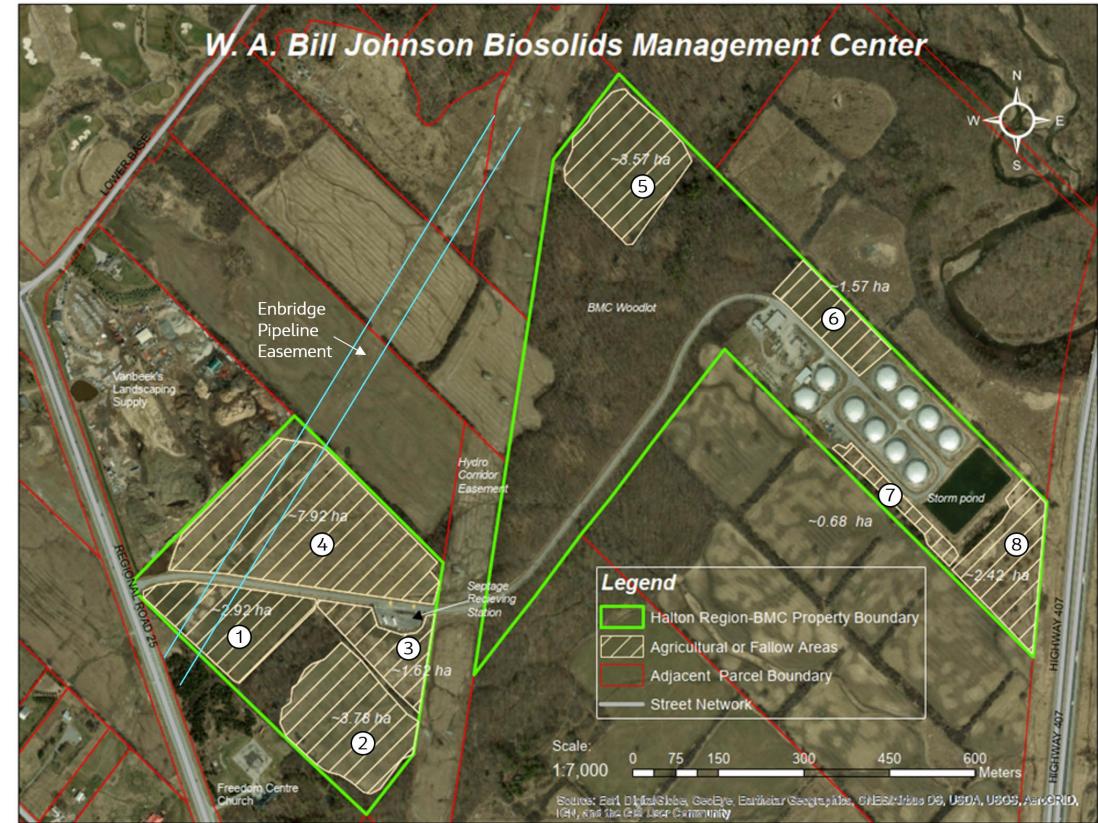


*Aerial view of Region-owned properties in the vicinity of the BMC.*

# Identifying Site Alternatives (Continued)

## Available parcels at the BMC

- Eight available parcels were identified within the BMC property and were included on the long list of site alternatives.
- Smaller parcels can be combined to make up a site that accommodates various biosolids composting facility components.
- These alternatives were screened based on advantages and disadvantages to generate a short list of feasible sites for further evaluation:
  - Alternative 1: BMC Parcel 4
  - Alternative 2: BMC Parcel 5
  - Alternative 3: BMC Parcel 8
  - Alternative 4: New Location/New Property

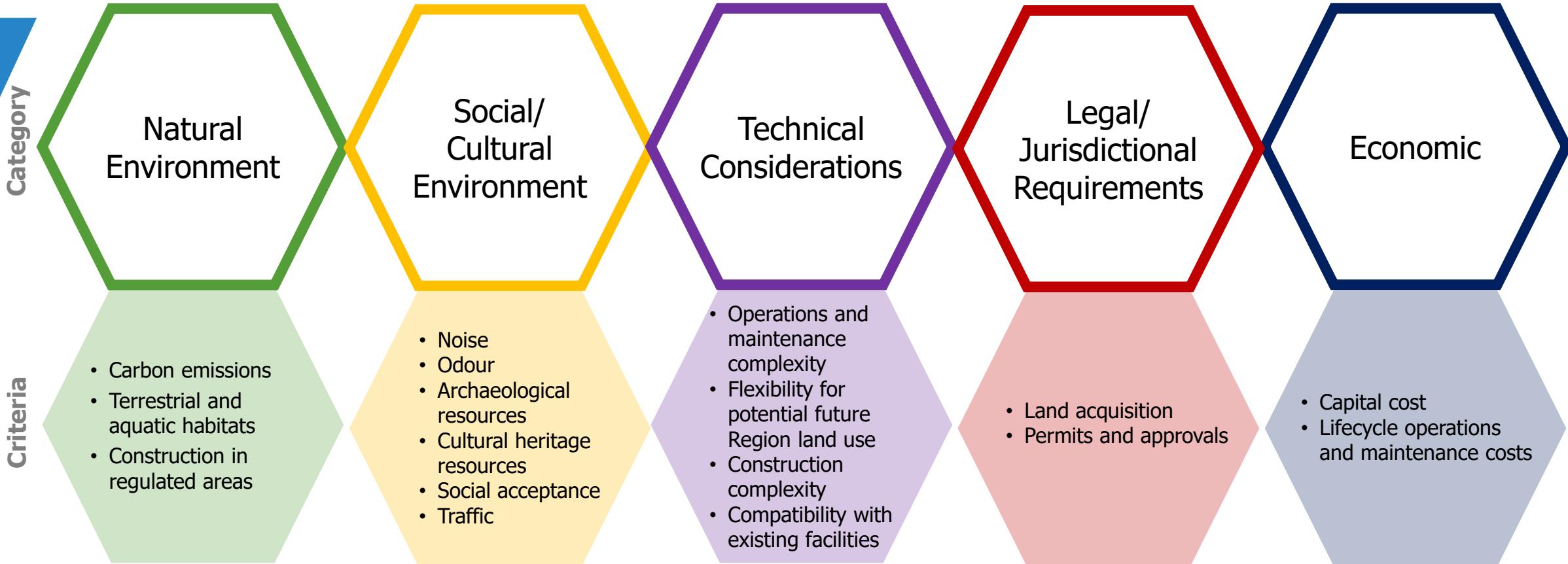


Aerial view of available parcels within the BMC.

# Evaluation Process

1. The short list of site alternatives was evaluated using criteria in the natural environment, social/cultural environment, technical, and legal/jurisdictional categories.
2. Each criterion was assigned a weight based on its importance, which was developed in conjunction with the Region's internal stakeholders.
3. Site alternatives were evaluated against each criterion and assigned a score between 1 and 5 (with 5 being the most favourable and 1 being the least favourable). Scoring considered the potential negative impacts or benefits of each site alternative, and the measures that may be required to mitigate any negative impacts.
4. The two highest scoring site alternatives were shortlisted for concept development and economic evaluation.

# Evaluation Criteria



# Biosolids Composting Alternative 1 – BMC Parcel 4

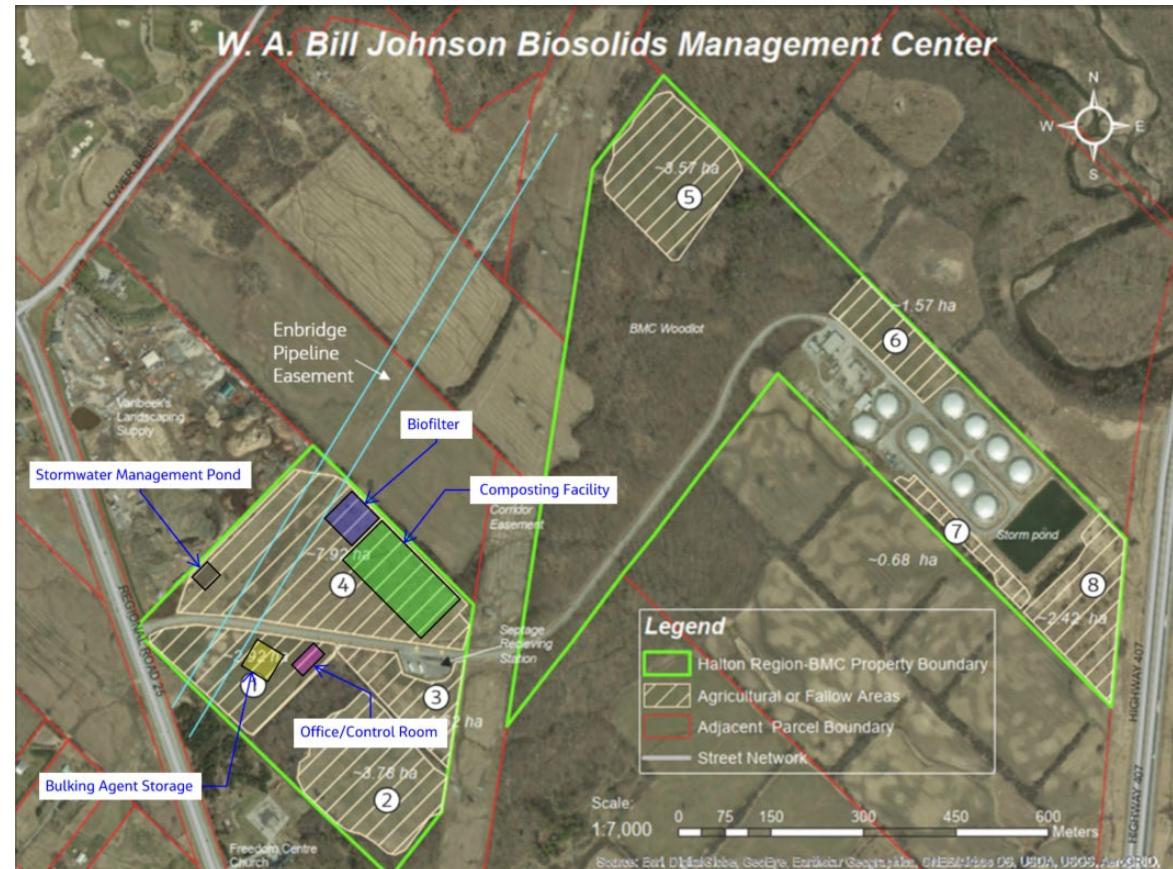
Alternative 1 is to construct a biosolids composting facility at BMC Parcel 4.

## Advantages

- Biosolids do not need to be transported offsite from the BMC.

## Disadvantages

- An Enbridge pipeline easement extends through the parcel. Special construction methods may be required to protect the pipeline easement.
- Proximity to community neighbours.
- No space for future expansion.



# Biosolids Composting Alternative 2 – BMC Parcel 5

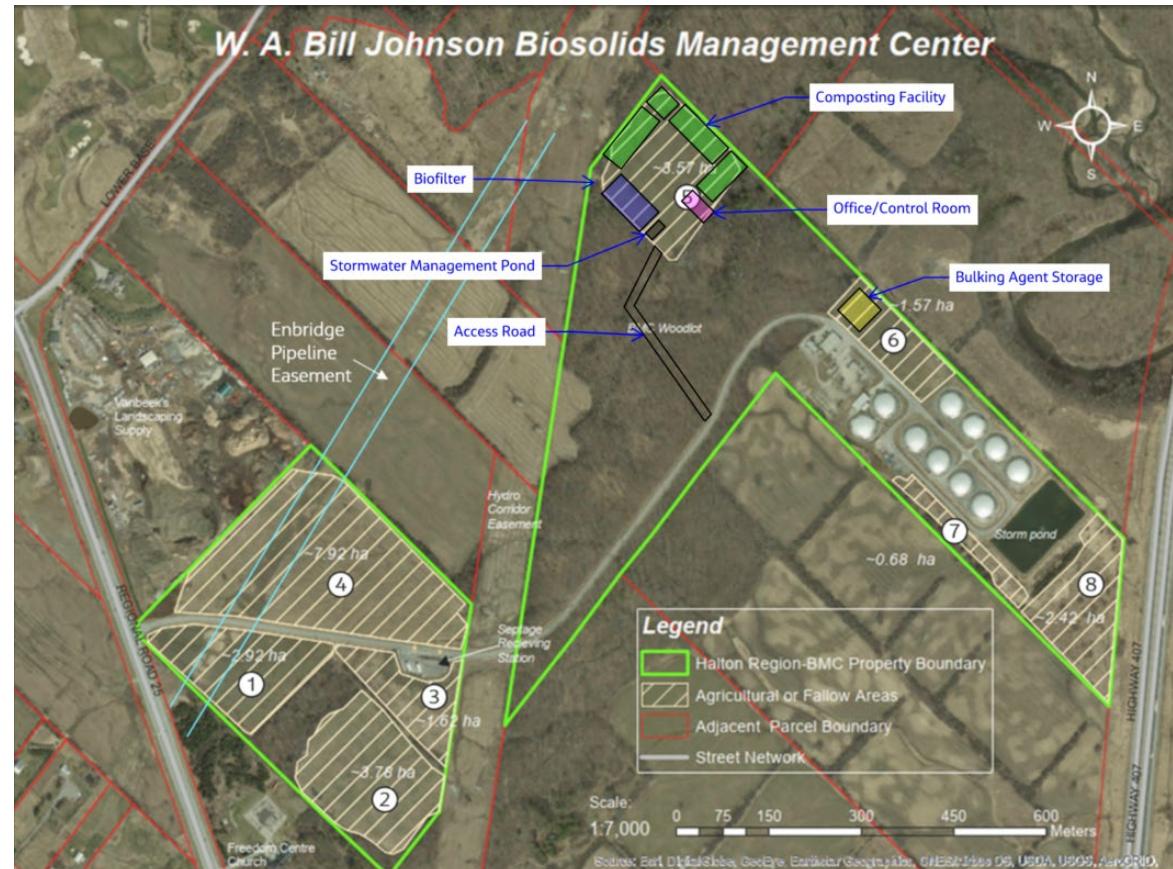
Alternative 2 is to construct a biosolids composting facility at BMC Parcel 5.

## Advantages

- Biosolids do not need to be transported offsite from the BMC.
- Space for limited future expansion.

## Disadvantages

- Parcel is in close proximity to sensitive natural features, which will likely require significant mitigation measures.
- A new access road is required through the BMC woodlot.
- Limited space for construction equipment and materials.



# Biosolids Composting Alternative 3 – BMC Parcel 8

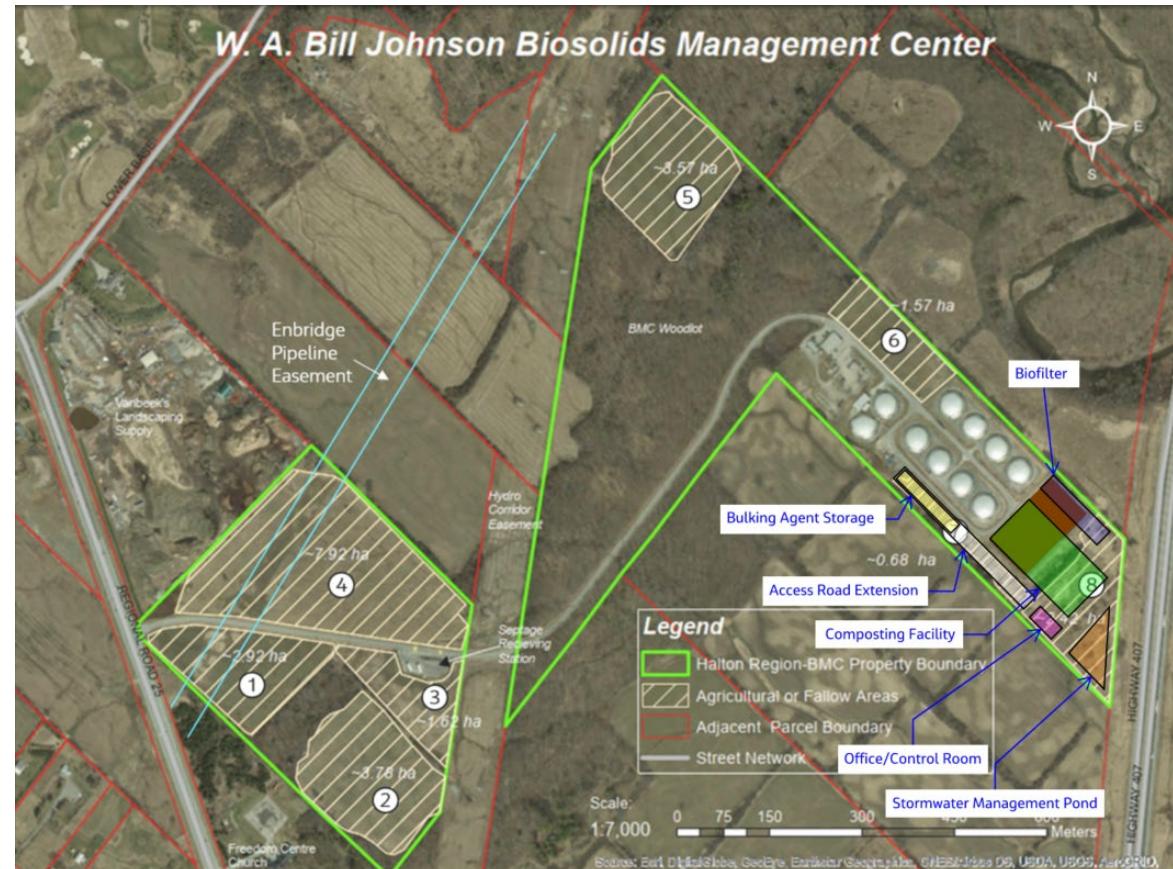
Alternative 3 is to construct a biosolids composting facility at BMC Parcel 8.

## Advantages

- Located near existing BMC operations and biosolids do not need to be transported offsite from the BMC.
- Lowest expected odour, noise and natural environment impacts.
- Furthest from community neighbours.
- Flexibility for future expansion, if required.

## Disadvantages

- Existing stormwater management pond must be relocated to accommodate the composting facility.
- Some minor operational modifications (site grading and piping) are required to accommodate the new stormwater management pond.



# Alternative 4 – New Location/New Property

Alternative 4 is to construct a biosolids composting facility at a new property with about six hectares of space near the BMC.

## **Advantages**

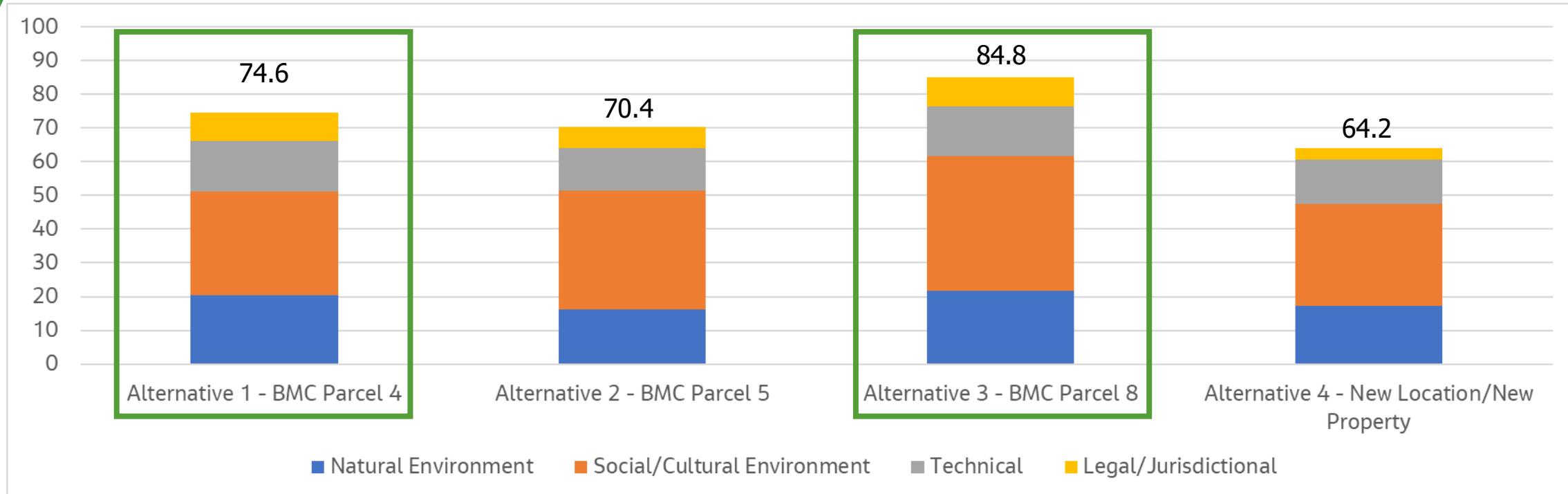
- Can select a site large enough to provide flexibility for expansion.

## **Disadvantages**

- Biosolids would need to be transported offsite from the BMC.
- Additional costs for land acquisition.
- Delayed implementation process due to additional consultation and land acquisition requirements.



# Evaluation Results



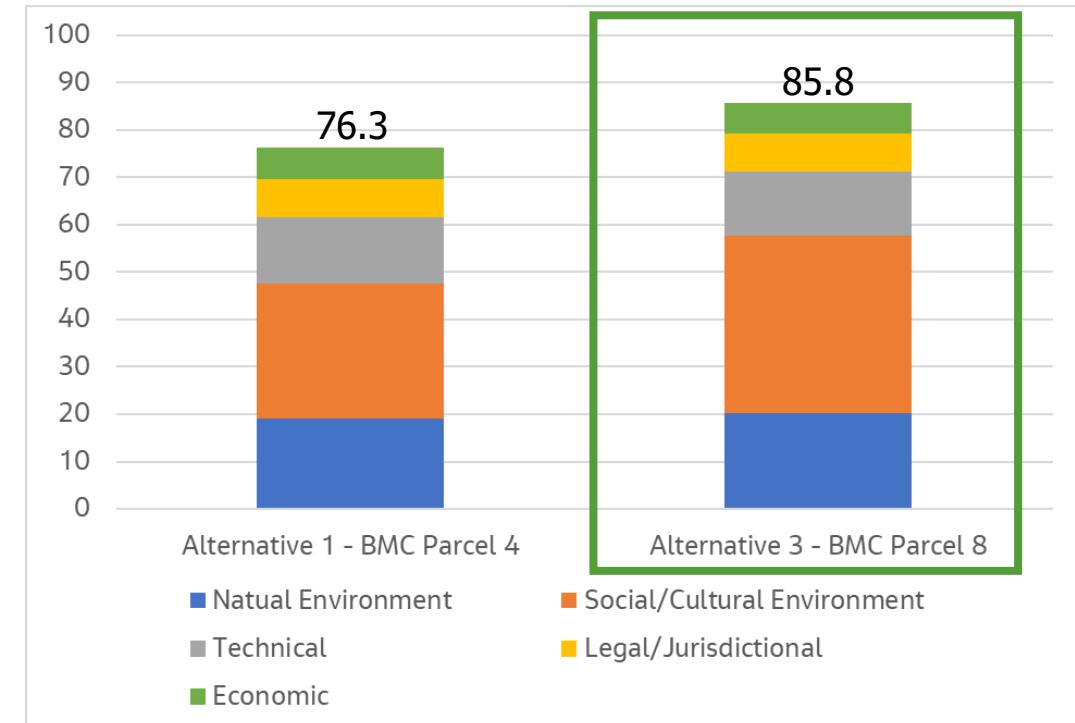
- Two alternatives scored highest (most favourable) compared to the other alternatives and were carried forward for economic evaluation:
  - › **Alternative 1: BMC Parcel 4**
  - › **Alternative 3: BMC Parcel 8**

# Comparative Cost Evaluation

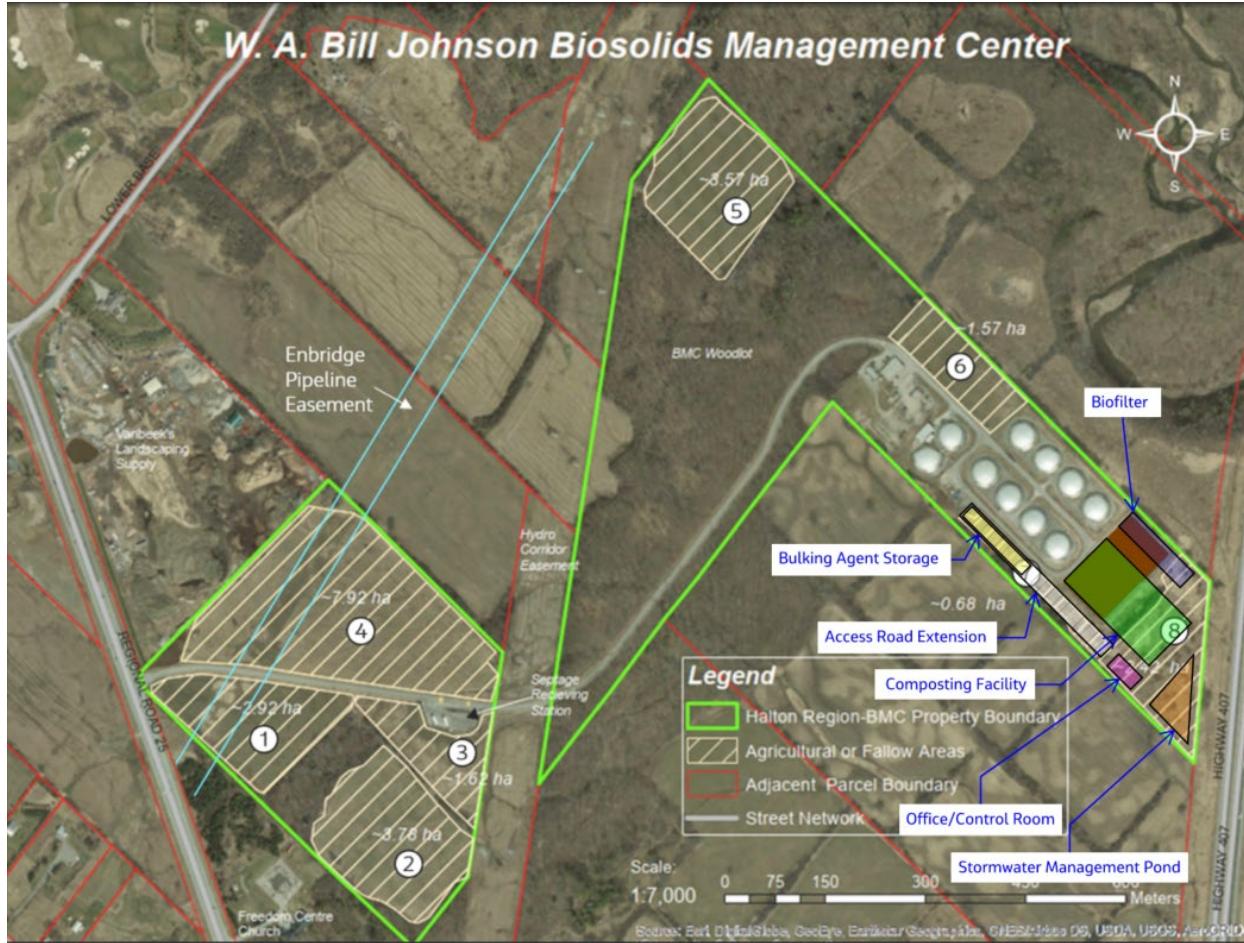
Comparative capital costs, operations and maintenance costs, and lifecycle costs were developed for each of the two highest scoring alternatives and incorporated into the evaluation.

**Alternative 3: BMC Parcel 8** was selected as the preliminary preferred solution because:

- It eliminates the need for biosolids to be transported offsite from the BMC, which will reduce truck traffic.
- It is adjacent to an existing operating site with mitigation measures for odour, noise and natural environment impacts.
- It is expected to have the lowest potential for odour, noise and natural environment impacts.
- It has flexibility for future process expansions, if required.



# Preliminary Preferred Solution



# Next Steps – Composting Facility Implementation

The next steps for implementation of the proposed biosolids composting facility are as follows:

- Completion of the MCEA Study process.
- Biosolids compost market assessment to identify the customer base, storage options and any phasing opportunities.
- Additional study to determine biosolids compost storage requirements.
- Design and construction of the proposed biosolids composting facility.

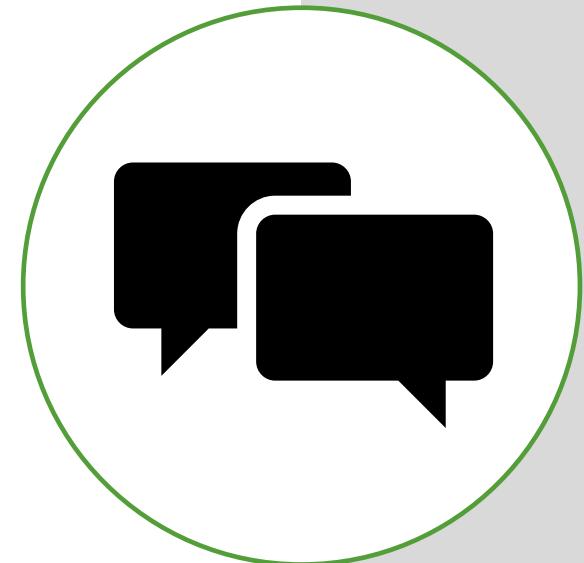


# Next Steps – MCEA Study

**Thank you for your interest in the Halton Region Biosolids Composting Facility MCEA Study!**

The next steps of this MCEA Study are to:

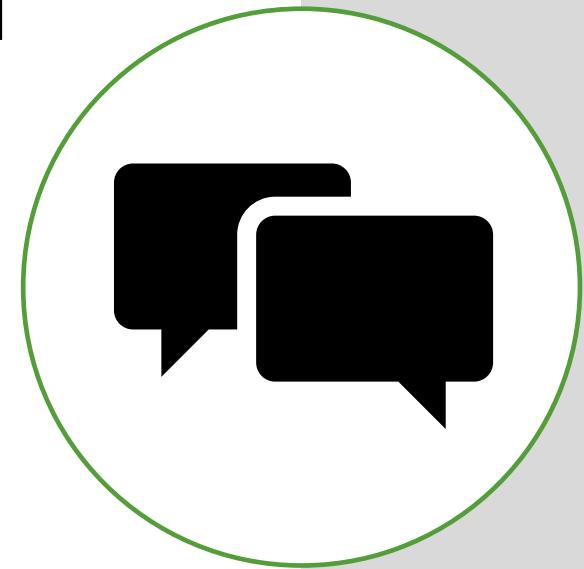
1. Review all comments and feedback on the PIC material and preliminary preferred solution.
2. Finalize and publish the Project File Report for 30-day public review in Summer 2024.
  - › Notification will be provided to all project mailing list contacts.



# Your feedback is valuable to us!

**Thank you for providing feedback as part of the MCEA Study process. Your input will be considered and incorporated into the selection of the preferred alternative location for a Region-owned biosolids composting facility.**

- Please complete our survey on the PIC webpage by **May 2, 2024**.
- You can also email the Project Manager, Christopher Pasquale, with comments or questions by **May 2, 2024**, at [BiosolidsCompostingFacilityMCEAStudy@halton.ca](mailto:BiosolidsCompostingFacilityMCEAStudy@halton.ca).



# Thank You!



Jacobs

If you have any questions, or would like to be added to the study mailing list, please contact:

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