



Future Waste Disposal Study City of Kawartha Lakes

Project Overview

February 8, 2022

Objective:



- Review the findings of the project
- Provide an overview on the evaluation results
- Review the implementation plan and next steps

AGENDA



1. Scope of Project
2. Current State
3. Future State
4. Options and Evaluation
5. Next Steps
6. Discussion

Scope for Future Waste Options Study

Scope:

Review potential options for future waste disposal capacity once the City exhausts existing landfill capacity

01	Project Initiation Meeting & Site Visit
02	Review of Background and Historical Information
03	Future Residual Waste Management Quantities
04	Review of Alternative Technologies & Operational Experiences
05	Review of Landfill Related Options & Operational Experiences
06	Confirmation of Potential Options & Evaluation Criteria
07	Evaluation of Potential Disposal Options
08	Identification of Preferred Option & Implementation Considerations
09	Reporting

Why is the Project Important?

Decreasing Landfill Capacity

The City generates 39,000 tonnes of garbage each year, with 1% annual increase projected.

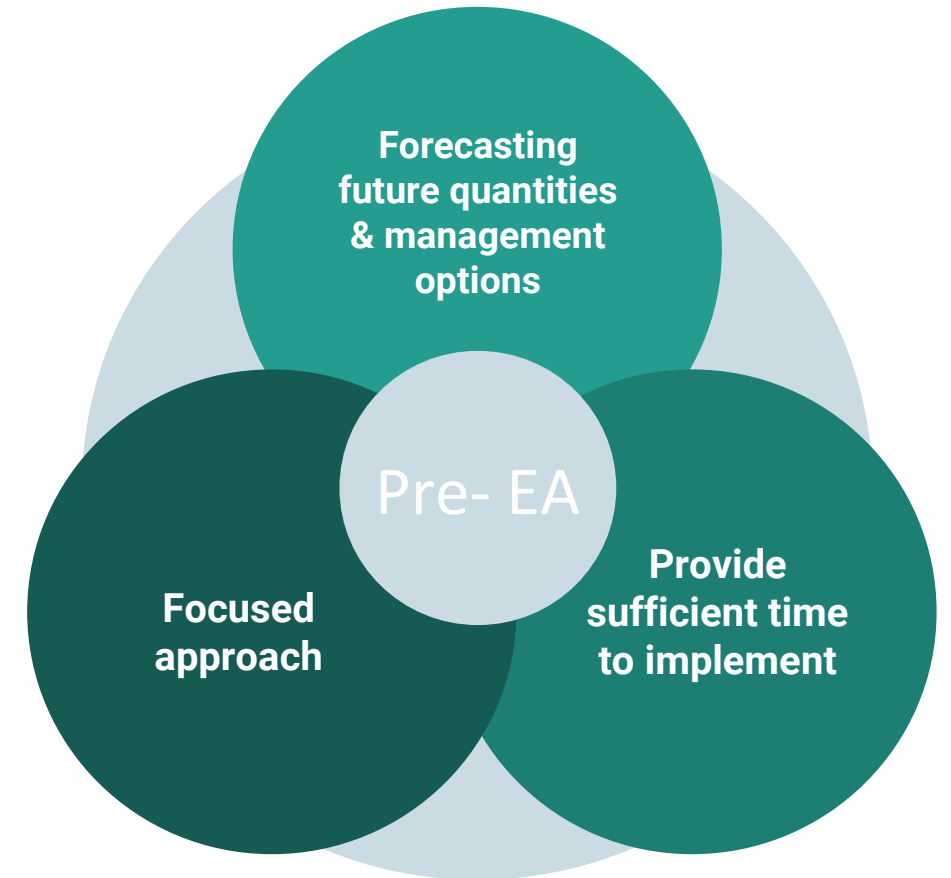
- Lindsay Ops Landfill is anticipated to reach capacity between 2030 and 2037 (accepts 70% of City's garbage)

Provides Focus for Next Steps

Project is essentially a pre-EA study which can potentially help to focus an Individual EA.

Implementation Timelines

Should an EA be required, several years are needed to complete that process.



Current State



Current Waste Management System

Demographic Statistics

- Waste Services provided to ~75,000 residents, some businesses and institutions
- **Seasonal Residents:** 31,000
- **Annual Population Growth Rate:** 1.2%
- **Population Density:** 24.5 people per km²

Collection Programs

- **Residential garbage collection:** weekly, 3-bag limit (during pandemic)
- **Blue Box recycling collection:** fibres/containers alternating weeks
- **Commercial Garbage:** weekly, 4-bag limit
- **Leaf & Yard (curbside):** 3x / year
- **Batteries (curbside):** 2x / year
- Public space recycling
- Large items, mattresses and appliances

Depots & Drop Offs

- Recycling of electronics, scrap metal, mattresses, C&D waste
- Boat and bale wrap for disposal
- C&D and textiles recycling
- Household hazardous waste, batteries
- Leaf and yard waste
- Reuse programs (paint, textiles, bulky, C&D, outdoor equipment, tools)

Making Waste Matter

Successes

- ★ 2-bag weekly clear garbage bag program (2017)
 - 20% less garbage collected at the curb
 - 10% recyclables allowed within each clear bag (2020)
- ★ Recycled ~10,000 mattresses in 3 years
- ★ Diverted over 1,200 tonnes of C&D waste in 3 years
- ★ Textile diversion program implemented in 2021
- ★ Introduced virtual tag service in 2021 to make it easier to recycle mattresses & other items through curbside pick up

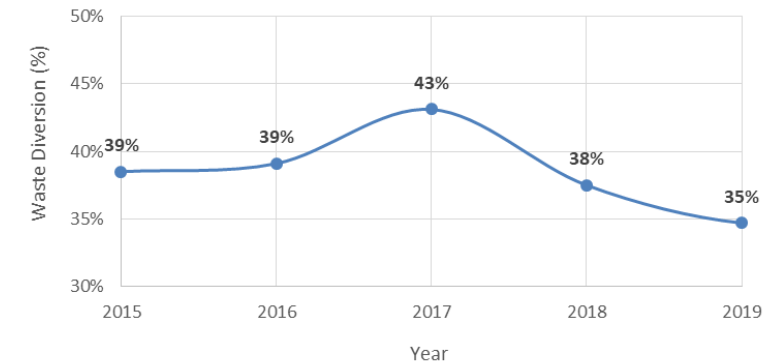
Future Focus Areas

- January 2022
 - ◆ Bulky plastics diversion program
 - ◆ Landfill mattress ban
- Improvements to Public Space Recycling
- Corporate Waste Reduction Initiatives
- Continue to explore Green Bin collection program & increased backyard composting



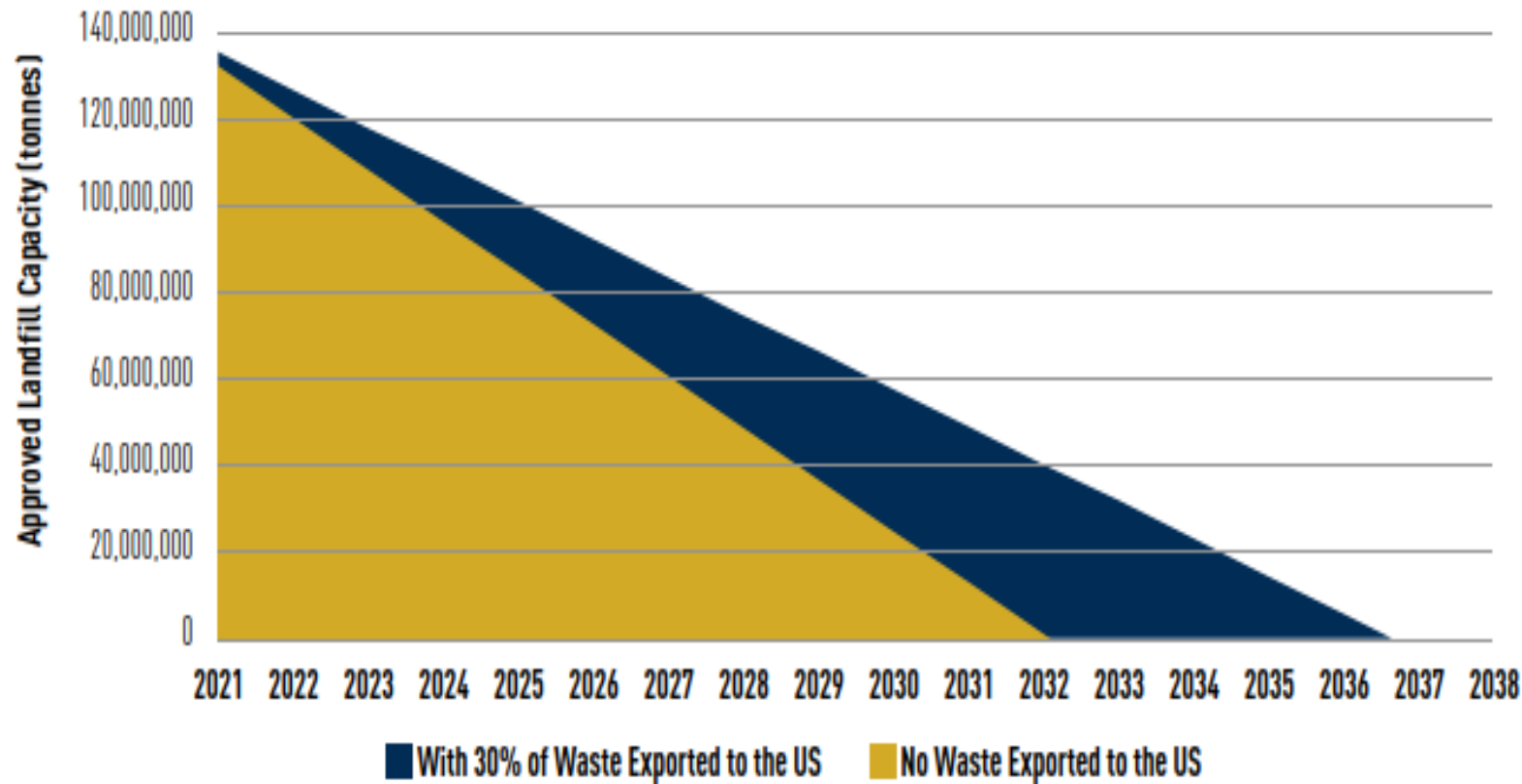
Divert 70% by 2048

Diversion Rates (2015 to 2020)



Ontario Landfill Capacity - OWMA Landfill Report (2020)

Figure 12 – Ontario's Remaining Landfill Capacity in Years



~3.3 million tonnes is exported to the US annually

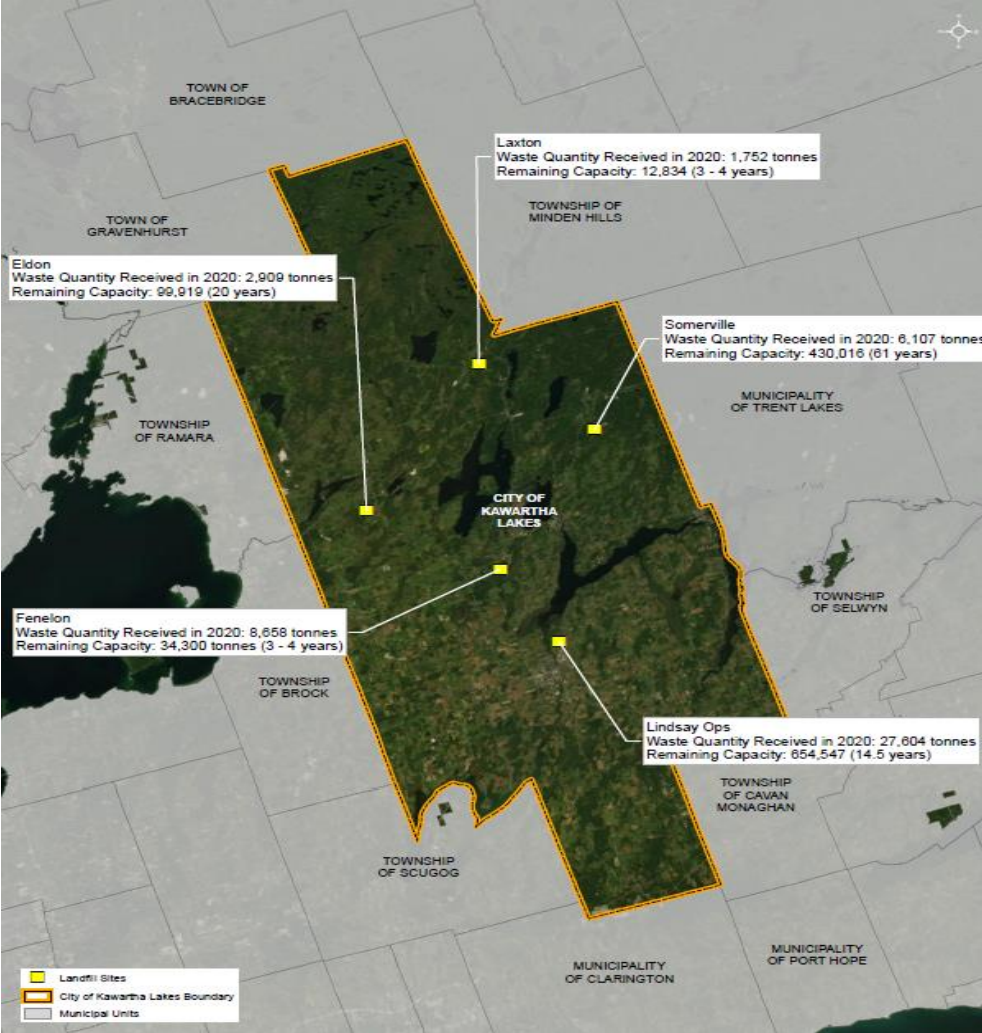
Depletion of remaining capacity will be reached:

- By 2036 if continue US export
- By 2032 without exporting

60% of ON capacity is in 7 landfills

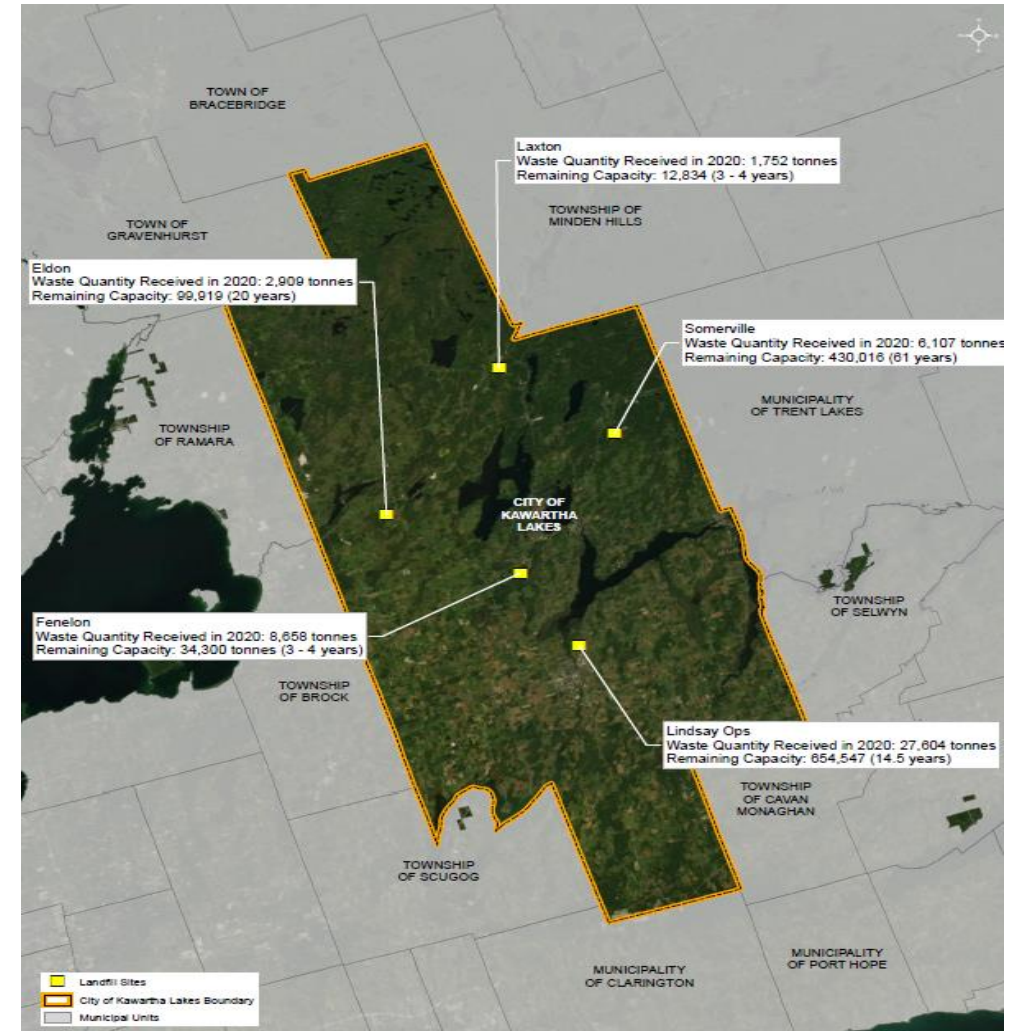
Landfill Information

Landfill Site	Forecasted Closure Date	Remaining Capacity as per 2020 Annual Reports (m3)	Expansion
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Landfill Information

Landfill Site	Forecasted Closure Date*	Remaining Capacity as per 2020 Annual Reports (m3)	Expansion	
Lindsay Ops	2030 - 2037	654,547 (14.5 years)	✓	-
Fenelon	2024	34,300 tonnes (3 - 4 years)	✓	Vertical only
Somerville	2084	430,016 (61 years)	✓	Sufficient space
Eldon	2046	99,919 (20 years)	✓	Requires additional land
Laxton	2024	12,834 (3 - 4 years)	✓	Vertical only



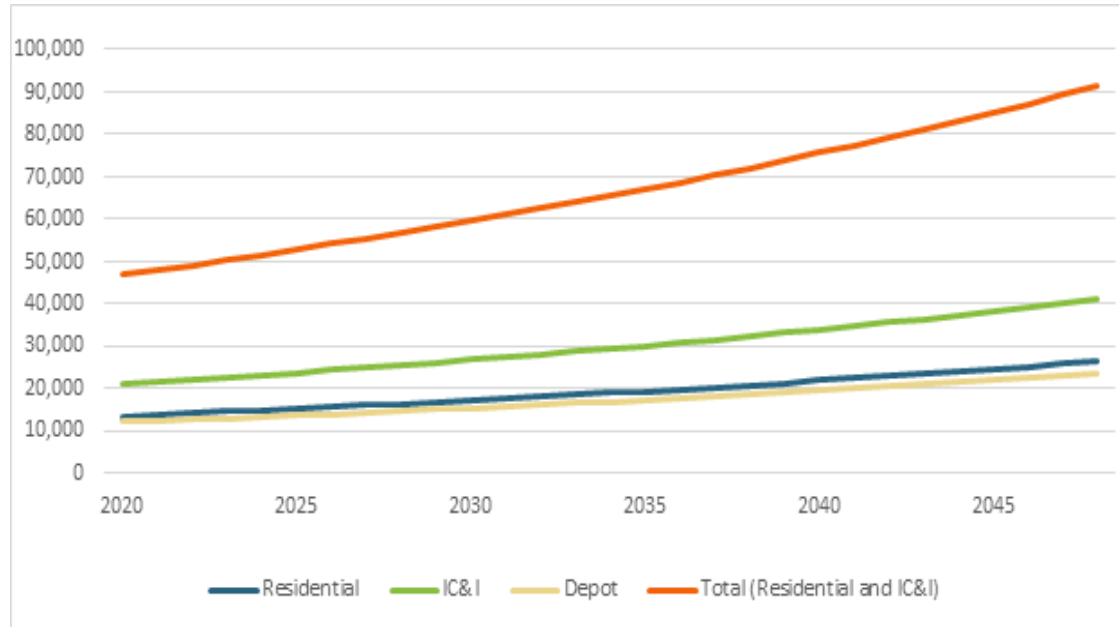
*Closure date based on 2015 Making Waste Matters and ongoing separate City study and subject to change based on diversion rates and new programs, closure of other landfills and redirection to remaining sites, etc.



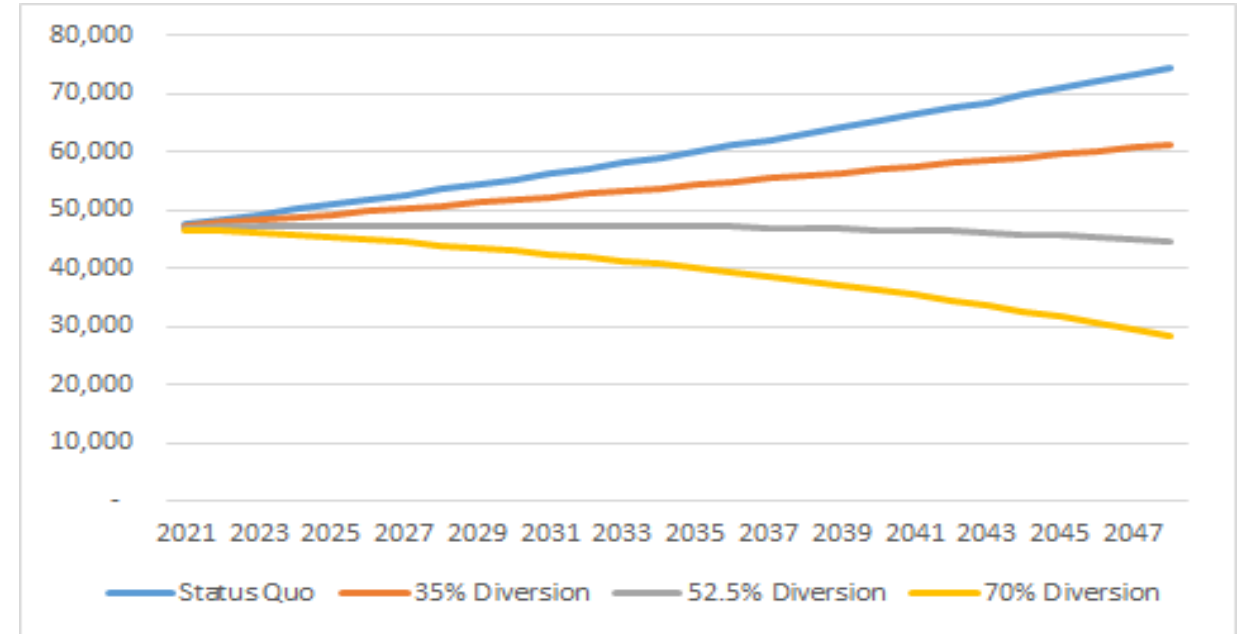
Future State

Future Residual Waste Quantities

Waste Generation Projections



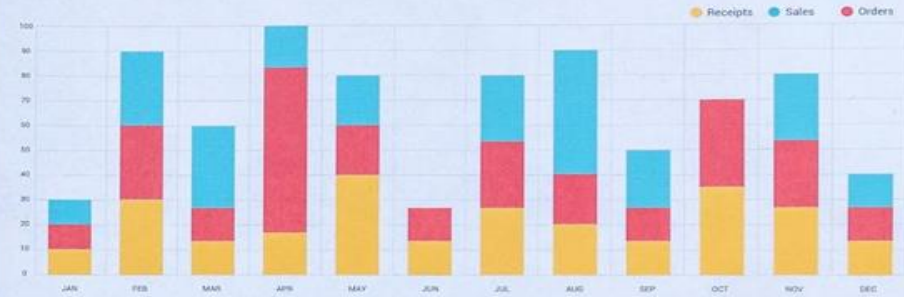
Diversion Scenarios



Scenario	2021 (tonnes)	2035 (tonnes)	2048 (tonnes)	Additional Air Space Required (m ³)
Status Quo	47,000	60,000	91,500	-1,570,000
35% Diversion	47,000	55,800	75,300	-1,294,000
53% Diversion	47,000	51,100	55,000	-951,000
70% Diversion	47,000	46,400	34,700	-608,000

Options & Evaluation

Our company



Business items



Options

Options Evaluated:

Alternative Technologies

- Mixed Waste Processing
- Mass Burn Incineration
- Gasification
- Pyrolysis

Landfill-related Options

- Landfill Expansion
- New Landfill
- Landfill Mining
- Exporting Waste
- Privatization of City Facilities

Considerations:

- Process description
- Operational experience
- Target material
- Outputs
- Operations & capital costs
- Advantages & disadvantages
- Technology status (proven, unproven, pilot)
- Applicability to the City

Evaluation Criteria & Indicators:

Economic Feasibility

- Capital costs
- Operational costs
- Level of risk

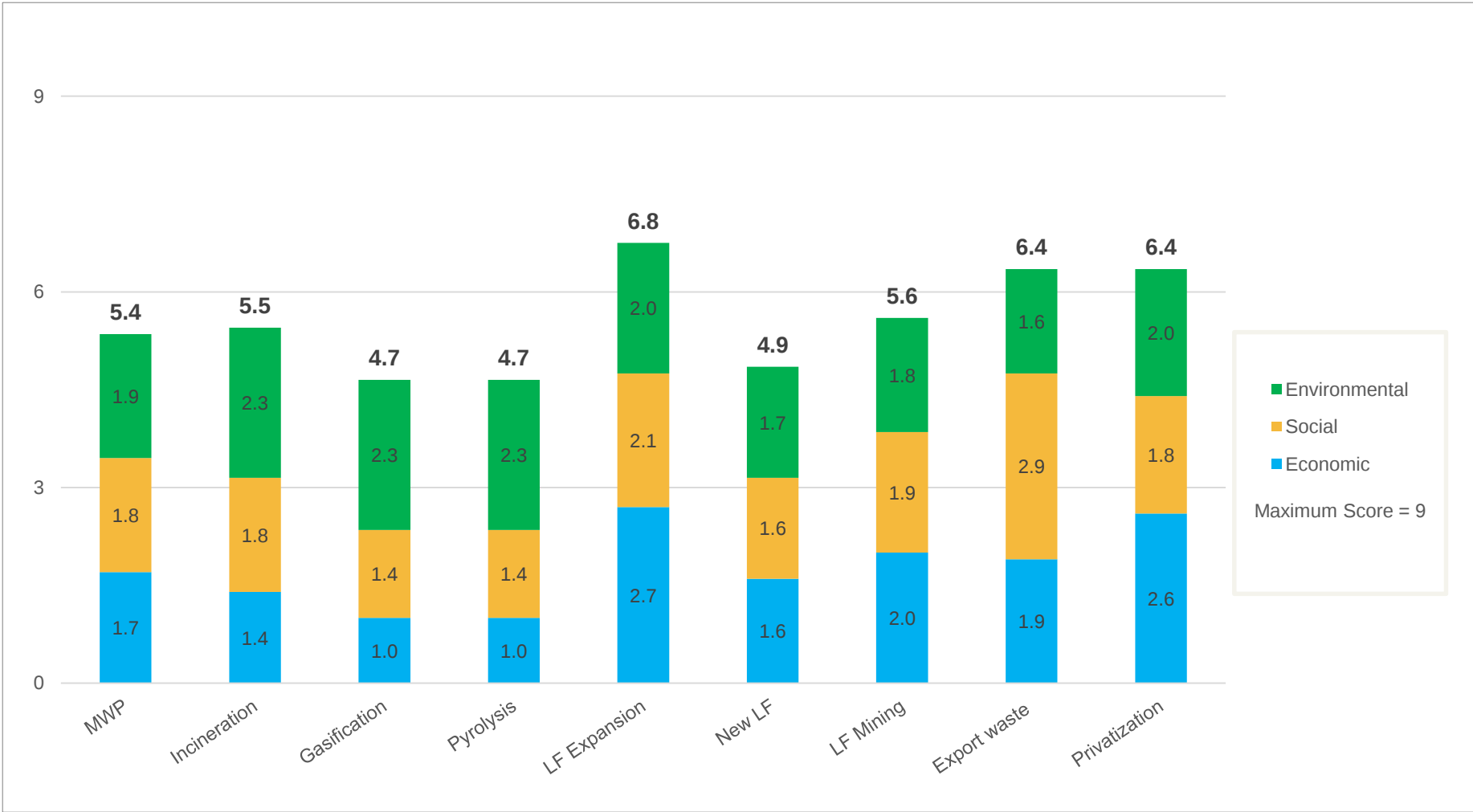
Social Impacts

- Public acceptance
- Collaboration potential
- Proven/unproven
- Level of effort

Environmental Impacts

- Climate change impacts
- Energy
- Nuisance impacts
- Air quality impacts
- Land requirements
- Impacts to ground/surface water
- Diversion potential

Evaluation Results - Weighted Averages of Options



Preliminary Preferred Option - Landfill Expansion

Economic Feasibility

- Operating costs will be similar or less than existing operating costs
- Capital cost is in medium range compared to other options
- Low risk given familiarity



Social Impact

- Proven approach in Ontario and at the City
- Requires lengthy EA process and consultation
- Public concerns anticipated through consultation and current methods



Environmental Impact

- More landfill gas will be generated potentially allowing for energy to be captured
- Land requirements depend on the site(s) selected and expansion method
- Current environmental management and monitoring practices will continue

A high-angle, close-up photograph of a group of people's hands and forearms reaching towards the center of a dark wooden table. The individuals are wearing various colored long-sleeved shirts: tan, purple, black, and grey. On the table, there are several documents with charts and graphs, a laptop, and a tablet. The scene suggests a collaborative meeting or a team working together.

Implementation Considerations for the Preferred Option

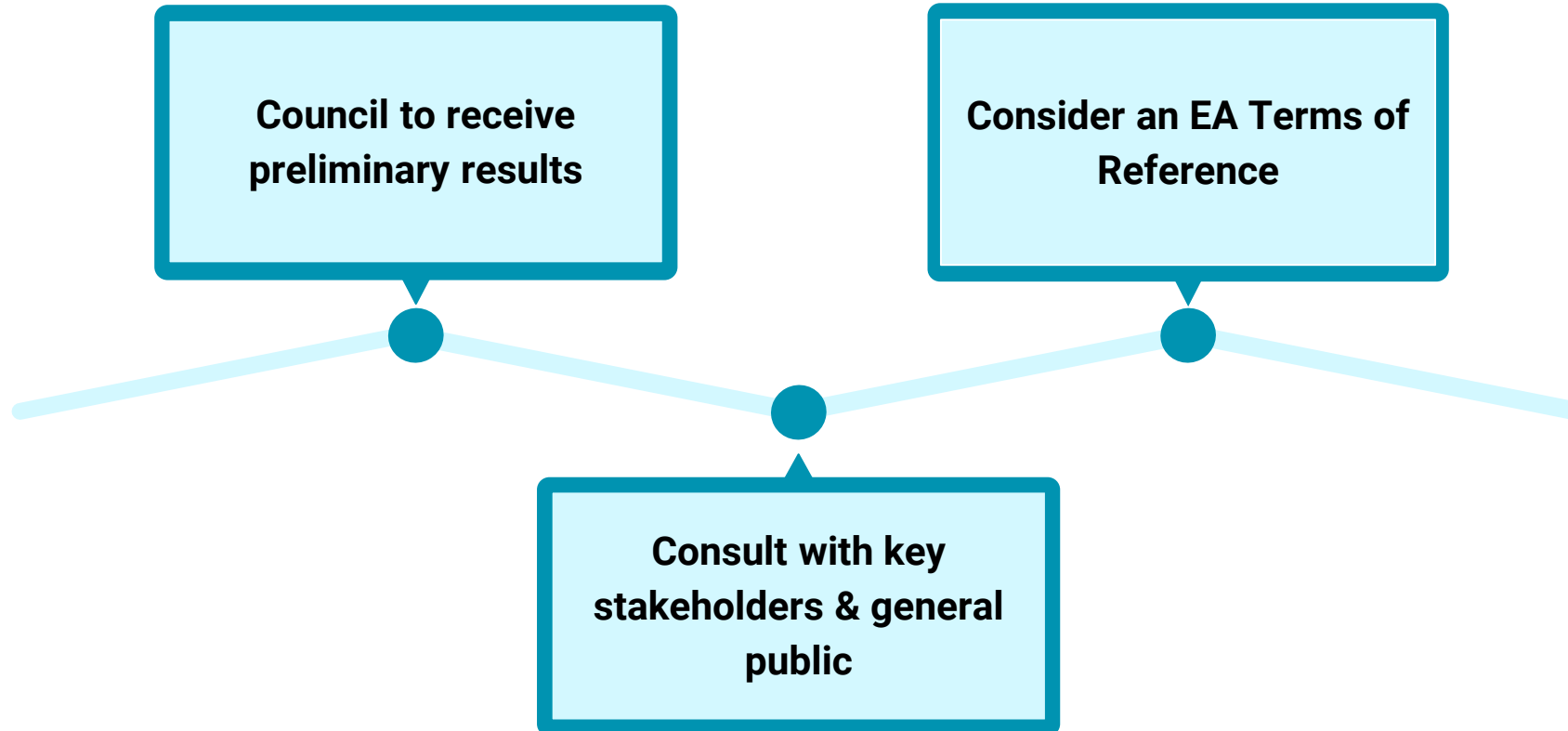
Considerations for Landfill Expansion Option

Financial	Environmental	Social	Technical/Operational	Regulatory
\$2 - \$5 million for an Environmental Assessment \$10 - 50 million for additional approvals, engineering, design & construction	Horizontal expansion may require clearing of vegetation/trees Environmental investigations anticipated to determine suitability	Consultation program may mitigate public concerns Minimal changes to noise/odour/traffic	Minimal changes to staffing needs Construction cannot begin until regulatory approvals secured (~ 5 years)	Individual EA or amendment required Vertical expansion can take 3-5 years for approval

Other Considerations

- Allows time for alternative technologies to further demonstrate their suitability and feasibility for managing MSW
- Allows time for potential partners to continue planning for facilities (noting several were in the early stages)
- City can still track and consider the use of alternative technologies which will further the life of the landfill
- Lower level of risk to have this asset within the City

Next Steps



Proposed Consultation Program

- Develop Consultation and Communications Plan
- Develop content for social media, Jump In and FAQs
- Virtual stakeholder meeting
- Two virtual public consultation events
- Online survey via Jump In
- Other ideas:
 - Informal polls on social media
 - Short video or fact sheet/newsletter
 - Prizes as incentives to complete the survey
 - QR code to complete the survey
- Public Consultation Summary Report

Questions?

