

December 19, 2016

RE: Summary of October and November Public Workshops

Thank you for attending one or both of the public workshops for the Walker Environmental Southwestern Landfill Environmental Assessment (EA) in October and November at the Colombo Club in Beachville, Ontario. We appreciate the time you spent providing your input and concerns, and we hope you found the events to be informative.

A summary of the workshop has been prepared and is enclosed. Also enclosed is a copy of the December Community Exchange Newsletter.

If you have any questions or comments about the summary, workshops, or other aspects of the EA, please do not hesitate to contact us at 1-855-392-5537 (toll free) or by email at info@walkercan.com.

Wishing you a happy and healthy holiday season,



Becky Oehler
Community Engagement Manager

Summary of October & November Public Workshops

Walker Environmental Southwestern Landfill Environmental Assessment

This document is a summary of two public workshops, both held at the Colombo Club in Beachville, ON:

- October 13, 2016 – 39 community members attended
- November 16, 2016 – 33 community members attended

This summary is a compilation of the key discussion topics between participants and Walker Environmental at the two workshops, based on detailed notes taken at the events.

Public Workshop Objectives:

The purpose of the two public workshops (October and November) was to hold a discussion and gather input from community members about different options (alternative methods) for five key landfill components and the process used to evaluate and identify the options that will be carried forward for further study (Preferred Alternatives). The five key landfill components are:

1. Landfill Footprint
2. Landfill Design
3. Haul Route & Site Entrance
4. Leachate Management
5. Landfill Gas Management

The evaluation process and subsequent community consultation was completed in two steps: (1) Identification of Alternative Methods (October Workshop) and (2) Identification of Preferred Alternatives (November Workshop).

October Workshop Objective:

Gather input from participants on the process of screening the long list of alternative methods (options) to the short list, based on four screening feasibility criteria (rational, regulatory, technical and commercial) for the five key landfill components.

November Workshop Objective:

Gather input from participants on the evaluation of the short list of alternatives, leading to the preferred alternatives for the five key landfill components.

Approach

The workshops were designed to:

- Provide information to community members about this step (Alternative Methods) of the Environmental Assessment process
- Receive input and concerns from community members
- Answer questions

Some key workshop elements:

- Location was the Colombo Club in Beachville.
- Registered participants received reference materials in advance to familiarize themselves and prepare.
- Two sessions per workshop, (afternoon and evening).
- Small group discussion format (6 to 8 per table) allowing more in-depth conversation than a large-group format.
- Each table had two Walker Environmental representatives to present information, respond to questions, and document the discussion.

Summary of Key Public Workshop Discussion Items

At both public workshops, Walker responded to questions and documented input and concerns. Feedback received by Walker will be considered and incorporated into the Environmental Assessment where appropriate. This could include how the alternative methods were evaluated, how the studies will be carried out, or how the landfill is designed.

Top questions and concerns:

- (1) Concerns about the potential for groundwater contamination:** Most participants expressed concern that groundwater could be contaminated by the landfill, particularly since the local water supply relies on groundwater. Walker responded that groundwater protection is a requirement for all landfills, and there are many protections proposed for the Southwestern Landfill, including the landfill liner (13 feet thick) as well as monitoring and contingency plans. There are also contingency funds (Financial Assurance) required by the Ministry of the Environment and Climate Change (MOECC) to care for the site if Walker is unable to. Walker recognizes that this is a key concern for the community and will look for opportunities to continue dialogue about this subject throughout the Environmental Assessment.
- (2) Landfill Location:** Many participants asked questions on the site selection process and indicated that they were not in favour of a landfill in Oxford County. Walker noted that the process to select the Carmeuse property was documented in the Terms of Reference (ToR), approved by the MOECC in March 2016. The process assessed locations across Ontario. The MOECC approval of the ToR means Walker can now select a location on the Carmeuse property to study and conduct a detailed impact assessment.
- (3) Waste Acceptance Process:** Many participants were interested in the waste acceptance process and how waste is verified as non-hazardous before it enters the landfill. Based on its current landfill operations, Walker explained their experience and processes that are used to manage the receipt of waste. Due to the interest expressed, Walker will look for opportunities to more clearly explain the waste acceptance process currently in place at their South Landfill in Niagara Falls, Ontario.
- (4) Haul Route Safety:** Many participants were concerned about the potential increase in local truck traffic. More specifically, there are concerns about safety at the westbound interchange between the Service Centre and Exit 222 to County Road 6, as well as at the intersection of County Road 6 and Beachville Road. Walker indicated that the next phase of the Environmental Assessment includes a traffic study that will consider the input and concerns from the community. Also, Walker will be consulting with the Ministry of Transportation regarding the Highway 401 interchange.
- (5) Upgrades to Haul Route:** Many participants were interested in knowing who would pay for any necessary road upgrades. Walker responded that they are assuming that any upgrades needed solely for the landfill would be paid for by Walker.
- (6) Site Expansion Once Approved:** Some participants expressed concern that once approved, the landfill could be expanded as Carmeuse continues quarrying. Walker responded that the current Environmental Assessment process is only applicable to this proposed non-hazardous, solid waste landfill, and a new EA would be needed for any addition or expansion to the landfill.

Key Discussion Topics by Table

On the Identification and Evaluation of the Alternative (October)

October Afternoon Session 3:30 pm to 5:30 pm			
Landfill Component	Table 1 – Facilitated by S. Hollingshead	Table 2 – Facilitated by B. Oehler	Table 3 – Facilitated by J. Tomaino
Landfill Footprint	<ul style="list-style-type: none"> - A few participants mentioned they would have preferred various options to choose from but there was only one remaining option following the feasibility screening. 	<ul style="list-style-type: none"> - Participants expressed concerns with the potential to expand the landfill on the property site should the EA be approved. 	<ul style="list-style-type: none"> - Participants in this session were particularly interested to the process of waste inspection upon truck arrival.
Landfill Design	<ul style="list-style-type: none"> - Several participants had concerns with the potential for more odour with a higher landfill while others voiced the proximity to the water table for a lower landfill. - A participant was interested in the criteria for the impact of precipitation on the landfill liner. 	<ul style="list-style-type: none"> - Participants asked questions about the leachate control mechanisms that would be used by Walker. - A resident was concerned with the potential impact that quarry blasting would have on the landfill liner. 	<ul style="list-style-type: none"> - Participants discussed at length the landfill liner and how the landfill is built. - A few participants expressed concern for the depth of the proposed landfill in the water table and the potential for the landfill liner to leak.
Haul Route	<ul style="list-style-type: none"> - Participants asked specific questions on: truck inspections, truck conditions, wear and tear impacts from the added trucks on the road, and the emergency and disaster response plan. - Participants indicated that although rail was screened out that it would be their preferred alternative. 	<ul style="list-style-type: none"> - The group had a lengthy discussion on feasibility of rail to keep trucks off the road and reduce road wear and tear, as well as reducing greenhouse gas emissions from haulage. - Many participants raised concern for potential accidents on Hwy 401 and County Rd 6. 	<ul style="list-style-type: none"> - Participants expressed their concerns over increased level of traffic and the proximity between the Service Centre and Hwy 401 Exit. - Participants were interested in how the traffic studies will be completed and if peak times of traffic use on County Rd 6 would be considered. - A resident recommended paving the proposed private road to avoid dust.
Leachate Management	<ul style="list-style-type: none"> - Many participants wanted to know where the discharge point of the treated water (from the on-site treatment plant) will be. - Participants wanted to know more about the monitoring and regulatory requirements for an on-site treatment plant. 	<ul style="list-style-type: none"> - The group was interested in learning more about the leachate treatment process. - A participant asked about the potential for the municipality to use the treatment plant to benefit some residents not yet connected to the municipal sewage system. 	<ul style="list-style-type: none"> - Participants at this table wanted to know the precise location of the treated water discharge point. - A participant inquired about the load capacity of the Thames River and the contingency if there was a drought. - Participants asked how long Walker would need to treat leachate post-landfill closure.

Landfill Gas Management	<ul style="list-style-type: none"> - The group asked questions about the process for accepting waste. - A participant wanted to know if Walker would add a compost facility if the landfill is approved and was concerned for the associated smell of this type of operation. 	<ul style="list-style-type: none"> - The group discussed the potential for Carmeuse to use the landfill gas captured. 	<ul style="list-style-type: none"> - Participants discussed the quantity of landfill gas production and how long the landfill gas could be used post-closure. - A few participants asked Walker what their plans were for recycling and source separation at the proposed landfill.
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October Evening Session 6:00 pm to 8:00 pm		
Landfill Component	Table 1 – Facilitated by S. Hollingshead	Table 2 – Facilitated by B. Oehler
Landfill Footprint	<ul style="list-style-type: none"> - A participant indicated that the consultation paper material presented was not sufficiently detailed. - The group inquired about the fund (Financial Assurance) if Walker were to go bankrupt and unable to care for the site. 	<ul style="list-style-type: none"> - Participants expressed concern of the likelihood of groundwater contamination resulting from the volume of waste to be received at the proposed landfill.
Landfill Design	<ul style="list-style-type: none"> - A few participants mentioned that they were not happy with the opportunity to provide input because it felt like Walker had already decided on many of the landfill alternatives. - The group discussed at length a “hybrid” scenario of deep design with additional solid material (compacted soil) beneath the liner to protect the groundwater. 	<ul style="list-style-type: none"> - The group discussed at length the landfill liner and the monitoring equipment that Walker could be used to treat leachate. - Participants were concerned about contaminated soil and how Walker will guarantee that no hazardous waste (including soil) would be accepted.
Haul Route	<ul style="list-style-type: none"> - A few participants mentioned that they would like to see Walker consider mitigation measures for dust on trucks hauling waste when trucks are leaving the landfill site. 	<ul style="list-style-type: none"> - Participants were concerned about the safety of the selected haul route at the intersection of Beachville Rd. & County Rd. 6 and the interchange between the Service Centre & Hwy 401 Exit 222.
Leachate Treatment Management	<ul style="list-style-type: none"> - The group discussed the leachate treatment process and a participant expressed concern with what would happen if the river does not have the capacity to accept the additional treated water volume. 	<ul style="list-style-type: none"> - A participant was concerned with the cumulative impact of this project in addition to other industrial activities on the Thames River, indicating that there are already algae blooms and low water quality in the Thames River within Oxford County. - A resident asked about the potential for infectious diseases (Ex. Avian Flu) spreading to other birds (poultry) and to the community from birds at the landfill.
Landfill Gas Management	<ul style="list-style-type: none"> - Participants wanted to know if landfill gas could be injected into the natural gas pipeline or used by Carmeuse. 	<ul style="list-style-type: none"> - The group discussed the potential for Carmeuse or others to use the landfill gas from the site.

On the Identification of the Preferred Alternatives (November)

November Afternoon Session 3:30 pm to 5:00 pm			
Landfill Component	Table 1 – Facilitated by S. Hollingshead	Table 2 – Facilitated by B. Oehler	Table 3 – Facilitated by D. Fry
Landfill Footprint	<ul style="list-style-type: none"> - A participant wondered if the approval of this EA would allow the site to expand to other areas of the Carmeuse property. 	<ul style="list-style-type: none"> - A few participants were interested in knowing the distance of residents to the property boundaries. - The group asked Walker questions about the process of constructing the landfill (cells) and accepting waste. 	<ul style="list-style-type: none"> - Participants discussed current groundwater levels and the location of drinking water wells in Oxford County.
Landfill Design	<ul style="list-style-type: none"> - Many participants said they did not trust landfill liners and the potential impact on groundwater if there is a leak. 	<ul style="list-style-type: none"> - Participants expressed concern for the protection of the groundwater and depth of the deep design. 	<ul style="list-style-type: none"> - The group wanted to know more on the soil used for covering waste and the process (frequency, choice of soil, etc.)
Haul Route	<ul style="list-style-type: none"> - Participants were concerned with the interchange at the Service Centre and Hwy 401 Exit 222 and trucks turning onto County Rd. 6. 	<ul style="list-style-type: none"> - The group wanted to know about the potential upgrades needed to County Rd. 6 and a participant expressed concern for trucks turning left off of Hwy 401 Exit 222 eastbound onto County Rd. 6 northbound. 	<ul style="list-style-type: none"> - Many participants asked about public safety regarding regular truck maintenance and the potential for hazardous waste arriving and being deposited at the proposed site.
Leachate Treatment Management	<ul style="list-style-type: none"> - The group asked questions about the leachate treatment process and the treated water discharge location. 	<ul style="list-style-type: none"> - The group asked questions about leachate collection pipes, the monitoring process, and the considerations of severe weather and storms conditions. 	<ul style="list-style-type: none"> - Participants inquired about the discharge point and the monitoring and reporting requirements.
Landfill Gas Management	<ul style="list-style-type: none"> - Many participants were interested in the environmental benefits of landfill gas collection. 	<ul style="list-style-type: none"> - A few participants expressed concern for the potential odour during flaring. 	<ul style="list-style-type: none"> - The group was interested in knowing if Walker is planning to have the landfill gas used locally.

Evening Session 6:30 pm to 8:00 pm

Landfill Component	Table 1 – Facilitated by S. Hollingshead	Table 2 – Facilitated by D. Fry
Landfill Footprint	<ul style="list-style-type: none"> - A participant was interested in the potential for impacts to the landfill from nearby quarry blasting. - Many participants expressed concerns about the potential for groundwater contamination. 	<ul style="list-style-type: none"> - A few participants mentioned their concern with Walker’s consultation process and the lack of detail presented in the consultation material regarding the design of the facility.
Landfill Design	<ul style="list-style-type: none"> - The group had a lengthy discussion about the landfill liner and Walker’s responsibility to continue monitoring and leachate treatment post-closure. 	<ul style="list-style-type: none"> - Participants indicated concern with the deep design as having a greater potential for impacting groundwater.
Haul Route	<ul style="list-style-type: none"> - Participants asked questions about the potential upgrades needed to the haul route and who would pay. - Many participants are concerned about the potential haul routes on Beachville Road and what will happen in the event of an emergency on County Rd 6 or the highway. 	<ul style="list-style-type: none"> - The group wanted to know more about who would pay for any required road upgrades, as well as wear and tear due to increased truck traffic. - Many expressed concerns about how dust could increase along the haul route and in the surrounding area from truck traffic.
Leachate Treatment Management	<ul style="list-style-type: none"> - Participants wanted to know more about the potential benefits of site-specific leachate treatment with an on-site facility rather than using the municipal waste water treatment plant (WWTP). 	<ul style="list-style-type: none"> - The group asked Walker questions about the leachate treatment process at the South Landfill in Niagara which uses a pre-treatment before sending leachate to the municipal WWTP.
Landfill Gas Management	<ul style="list-style-type: none"> - The group discussed with Walker the alternatives to traditional landfills including waste diversion efforts and incineration. 	<ul style="list-style-type: none"> - Participants discussed with Walker potential landfill gas opportunities as an environmental benefit and they also discussed general waste diversion opportunities in Ontario.

Feedback from Participants on the Workshops

Participants were able to provide feedback on the October and November Workshop in two-ways.

- At the end of each workshop, participants were asked to comment on their experience and if they had any feedback for Walker (roundtable feedback).
- Participants were provided with a feedback form.

From the Roundtable Feedback:

- Many participants indicated that the workshop format was preferable to an open house as it allows for more clear and constructive dialogue with Walker representatives and other community members.
- Some participants were pleased and some were disappointed with the level of detail provided in the consultation material.
- A few participants voiced that they felt that Walker had already made decisions prior to community input.
- Some participants recommended that Walker advertise the public engagement activities in the Village Voice and on the local radio stations.

From Feedback Forms (27 forms received in total)

- The majority of participants “somewhat agreed” (4/5) or “strongly agreed” that input from participants was being properly listened to and documented.
- The majority of participants “somewhat agreed” (4/5) that their questions were answered to their satisfaction.
- The majority of participants were satisfied with the location, venue, and time.
- Participants mentioned that they found out about the workshops through social media, in the local paper, or by receiving an invitation.

If you have any questions or comments about this summary, the workshops, or the Southwestern Landfill Environmental Assessment in general, please do not hesitate to contact us:

By phone: 1-855-392-5537 (toll free)

By email: info@walkerea.com

At our office: 60 Carnegie St., Ingersoll, Ontario, N5C 4A8



Southwestern Landfill Environmental Assessment

Identification of Alternative Methods Public Workshop Consultation Paper

This document was prepared for the purpose of consultation and is preliminary information only. This is intended for use at the October 13, 2016 public workshop at the Colombo Club in Beachville, ON.

Table of Contents

General Information.....	3
Topic 1: Landfill Footprint.....	7
Topic 2: Landfill Design.....	10
Topic 3: Haul Routes.....	12
Topic 4: Leachate Management.....	18
Topic 5: Landfill Gas Management.....	20
Next Steps.....	22
Glossary of Terms.....	23

The information presented in this document (text, graphs, and maps) are all preliminary, subject to change, and/or to be improved. The information presented in this workbook is provided to facilitate dialogue. It is not a final product, there will be opportunities to review documentation throughout the Environmental Assessment process.

General Information

Who is Walker Industries?

Walker Industries is a Canadian, 5th generation, family-owned company that has been operating in Ontario since 1887. Walker Industries now employs more than 700 people and the company's mission is to provide infrastructure to meet municipal, commercial, and residential needs. Walker Industries group of companies offers products and services including aggregates (used in construction), paving & construction services, emulsions (ex: provides moisture resistance for building materials), as well as waste and recycling services.

Walker Environmental Group Inc., a subsidiary of Walker Industries, provides resource recovery, recycling and waste disposal solutions across Canada.

With a focus on responsible business practices, Walker Environmental has become recognized nationally as a trusted company across our three core business lines: waste management, renewable energy, and organics recycling. Walker Environmental is committed to building facilities that use proven technology to manage society's waste in an environmentally responsible manner.

Our Commitments for Landfill Management

1. Environmental Protection
2. Technical Excellency
3. Environmental Protection

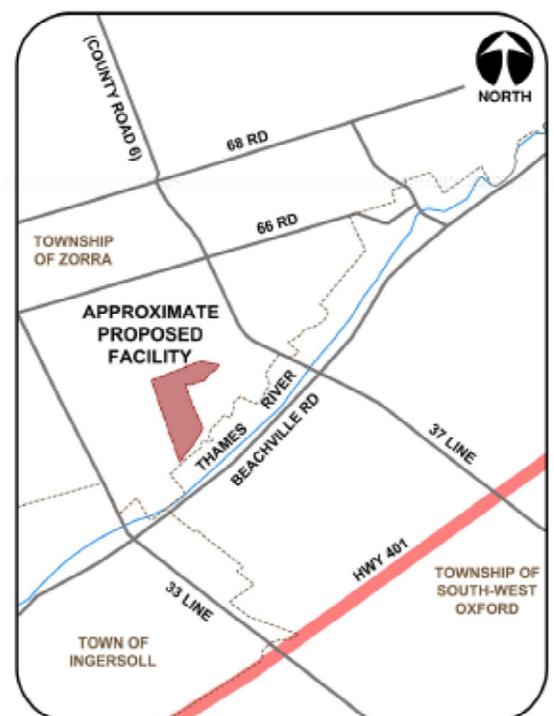
What is the Southwestern Landfill Environmental Assessment?

Walker Environmental is proposing a landfill in the Township of Zorra. The landfill proposal is undergoing a Provincial process called an Environmental Assessment (EA). An EA is a provincial planning and decision-making process that considers potential environmental impacts before a project is allowed to begin. Once complete, the Ontario Minister of the Environment and Climate Change will decide if the landfill is approved.

The proposed site would accept up to 850,000 tonnes of waste per year plus cover material (typically soil) for a total capacity of approximately 17 million cubic metres over a 20-year operating period. If approved, it would accept only non-hazardous waste that is created in Ontario.

Project Location

The proposed location for the landfill is in a mined quarry on the Carmeuse Lime (Canada) property, 374681 37th Line (Oxford County Road 6) in the Township of Zorra.

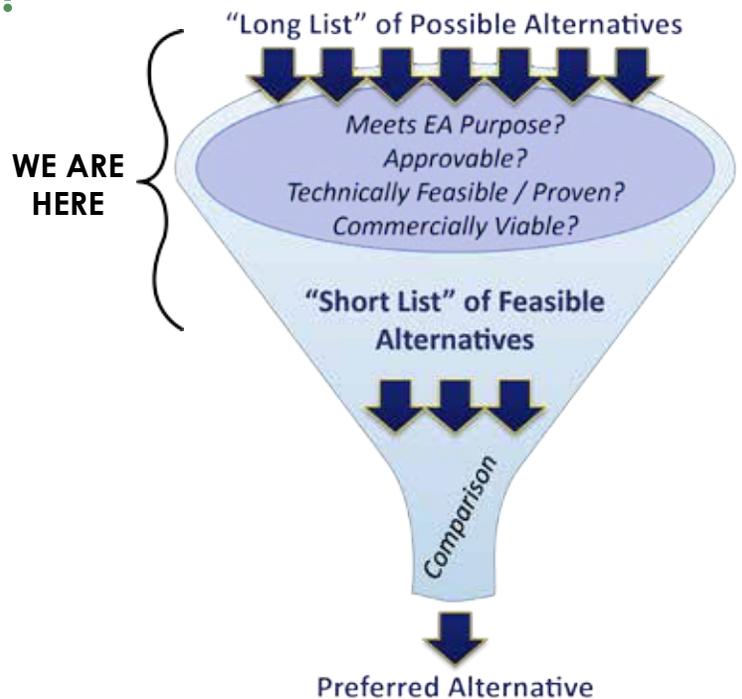


Where are we in the EA process?

We are in the **Evaluation of Alternative Methods phase of the Southwestern Landfill Environmental Assessment (EA)**. This is when a long list of alternatives (options) is identified for different landfill components. Then, four screening criteria are applied. The alternatives that meet the four screening criteria become the short list of feasible options.

After this phase, the preferred alternatives are identified through a comparative evaluation and incorporated into the landfill design that will be studied by experts.

A detailed description of this phase can be found in Section 7 and 8.1 of the Approved Amended Terms of Reference. The preferred alternative(s) are then subject to further study through the remainder of the EA.



Screening Criteria for the “Long Lists” of Possible Alternatives

Criteria	Explanation
1. Must be consistent with the stated purpose of the Environmental Assessment	The purpose of the Southwestern Landfill EA is to create a landfill capacity at the Carmeuse Lime property for solid, non-hazardous waste generated in Ontario. If an option doesn't align with this purpose, it is screened out.
2. Must be reasonably capable of approval pursuant to the statues of Ontario and Canada	There are many different approvals that are required for a landfill. Any option that could not be approved or is very unlikely to be approved under Ontario and Federal law is screened out.
3. Must be technically feasible and proven technology	The landfill must be constructed and operated safely, meeting all requirements. If an option can't be feasibly carried out, or if the technology has not been proven to work, the option is screened out.
4. Must be commercially viable	Private-sector companies like Walker Environmental can only invest in infrastructure that is financially sustainable. If the cost of an option is too high for the landfill to be profitable, it is screened out.

An alternative (option) must meet all 4 criteria for it to move forward to the next step (short list).

What is the purpose of this workshop?

The purpose of this workshop is to provide an opportunity for constructive dialogue and meaningful input on the selection process of the various components of a landfill design. Community input is important and all input will be considered.

What is the purpose of this consultation paper?

This consultation paper is meant to provide the required information for the community to provide meaningful input. In this consultation paper for the five key landfill components, you will see the rationale that led to the development of the long list of options for each component, and why Walker has identified options as not feasible, or feasible and requiring further evaluation. Walker wants to have the perspective of community members on these topics, since you know your community best.

This consultation paper is written specifically for the October 13, 2016 Alternative Methods Public Workshop to facilitate dialogue and input; it is not the final document.

Questions to Consider

The following questions can be found throughout this consultation paper to help facilitate dialogue and input.



1. Do you have questions about the options presented?
2. Are there other options you suggest be considered?
3. Is the screening of the long list clear?
4. What are your thoughts on the landfill component?

How will you know your input was considered?

After the public workshop, your input will be documented, considered and incorporated where appropriate.

At the next public event (November) Walker will provide feedback on:

- What input was received and considered during the October 13 workshop and from other stakeholders.
- How input affected the next step of the EA.
- Example: The CLC requested a landfill footprint map with constrained areas identified. You can see the resulting map on page 7.

Topics of this Workshop on Alternative Methods



Landfill Footprint

- The entire Carmeuse Lime property, in the Township of Zorra is considered for the location of the landfill.
- We are looking for input on different locations considered and the rationale used to select potential footprints.



Landfill Design

- There are different ways of constructing the landfill that are considered.
- We are looking for input on the landfill liner design and different landfill configurations (ie. how deep, how high, how wide).



Haul Route & Site Entrance

- Having a designated haul route is very important for landfill operations and for the local community.
- We are looking for input on possible routes to the proposed site, including highway exits and a specific entrance to the site.



Leachate Treatment Management

- Leachate is any water (ie. rain/snow) that comes into contact with the waste within a landfill. It must be contained, collected and treated.
- We are looking for input on the different options being considered for how leachate can be managed.



Landfill Gas Management

- Landfill gas is created when organic waste breaks down within a landfill. It must be managed to mitigate odour and greenhouse gas emissions. Landfill gas is also a renewable energy resource.
- We are looking for input on different methods for managing landfill gas and utilizing it to create renewable energy.

Note: It is important to note that if an option is identified as “feasible” it does not mean it is a good candidate for other reasons, only that it is part of the short list. Other social , economic, and environmental criteria will be used to select the preferred option.

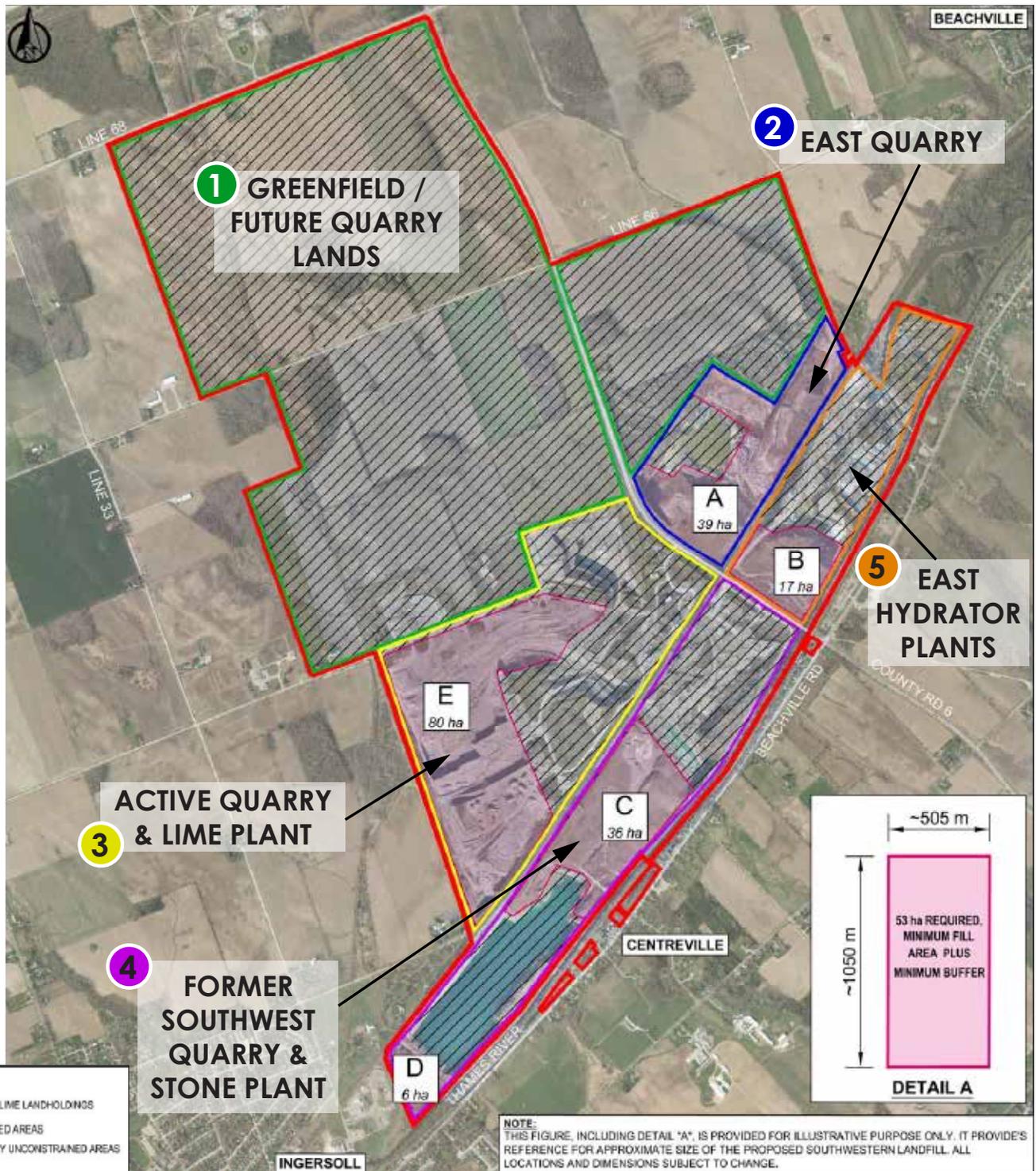
Topic 1: Landfill Footprint

What is the Landfill Footprint?

As part of the Environmental Assessment, the entire Carmeuse property in Zorra township must be evaluated to determine the most preferred location for the proposed landfill.

Long List Options for Landfill Footprint

The minimum required space for the landfill (including minimum buffer) is **53 hectares (131 acres)**.



1. Greenfield / Future Quarry Lands

- Farm land owned by Carmeuse intended as future quarry lands. Some areas are licensed for quarrying, some are not. Land is designated in the Oxford County Official Plan as a high-purity calcium stone resource.
- **Approval Constraint:** Under the Provincial Policy Statement (PPS), "sterilizing" (unable to use or access) a resource is not allowed. Although it is possible under the PPS to change the land designation, Walker does not see a strong case for the change, making an approval unlikely.

2. East Quarry

- Mined quarry. Central quarry floor area covered with water.
- **Approval Constraint:** Cannot build a landfill in the water-filled area [EPA s.27(3)].
- **Unconstrained Area:** 39 hectares, not large enough for the landfill (53 hectares minimum).

3. Southwest Active Quarry & Lime Plant

- Rock is actively being quarried. Lime plant and offices in northeast.
- As quarrying progresses, landfill construction and operations could begin. Walker has experience with the coexistence of quarry and landfill operations.
- **Unconstrained Area:** 80 hectares, large enough for the landfill (53 hectares minimum).

4. Southwest Quarry & Stone Plant

- Stone plant in northeast. Former quarry filled with water in southwest, currently undergoing rehabilitation.
- **Approval Constraint:** Cannot build a landfill in the water-filled area [EPA s.27(3)].
- **Unconstrained Area:** 36 hectares and 6 hectares, not large enough for the landfill (53 hectares minimum).

5. East Hydrator Plant

- Hydrator plant, maintenance shop and stormwater management ponds. Eastern portion naturalized with vegetation and trails.
- **Unconstrained Area:** 17 hectares, not large enough for the landfill (53 hectares minimum).

Feasibility Screening Criteria	1. Greenfield / Future Quarry Lands	2. East Quarry	3. Southwest Active Quarry & Lime Plant	4. Southwest Quarry & Stone Plant	5. East Hydrator Plant
Consistent with EA purpose?					
Approvable under Ontario and Federal laws?	x Not consistent with PPS 2.5.2	x Prohibited by EPA s.27(3)		x Prohibited by EPA s.27(3)	
Technically feasible and proven technology?					
Commercially viable?	x Sterilize high value aggregate reserves/resources.			x Cost prohibitive to relocate stone processing plant.	x Cost prohibitive to relocate hydrators & maintenance facilities.
Preliminary Conclusion	x Screened out from further evaluation	x Screened out from further evaluation	Carried forward as the preferred alternative	x Screened out from further evaluation	x Screened out from further evaluation



Record Your Thoughts:

1. Do you have questions about the options for the location of the proposed landfill?
2. Are there other options you suggest be considered?
3. Is the screening of the long list clear?
4. What are your thoughts on landfill footprint?

Topic 2: Landfill Design

What does “Landfill Design” include?

- The type of landfill liner.
- The height / depth of the landfill (deep, conventional, or above ground).

What landfill liner will be used?

A landfill liner has two purposes:

1. To act as a barrier that prevents leachate from contacting the surrounding rock and ground water.
2. To collect the leachate and direct it to an area where the leachate is managed and treated.

The Generic Double Composite Liner is selected as the liner system for the Southwestern Landfill because:

- It was designed and approved by the Ministry of the Environment and Climate Change to be fully protective of the environment in a broad range of hydrogeological settings.
- It supports an average waste thickness that fits in the available landfill footprint.
- Walker has experience building and operating with this type of liner at the South Landfill in Niagara Falls (also in a mined quarry).

What is Leachate?

Leachate is water that has come into contact with waste. Leachate is created when rain water or snow melt filters through the landfill.

Generic Double Composite Liner at Walker Environmental's South Landfill in Niagara Falls.

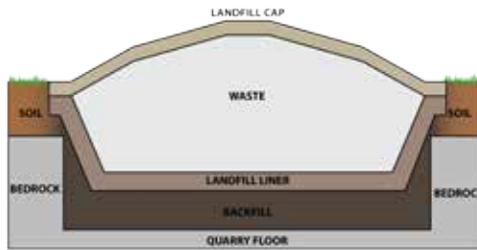


Long-list of Options for Landfill Design



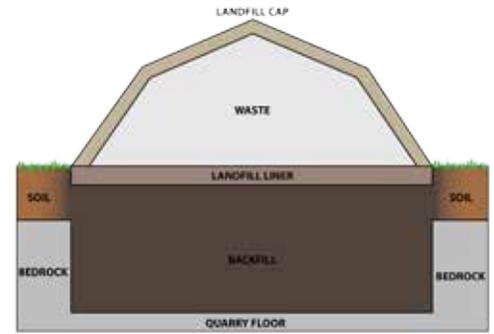
1. Deep

- Most of waste is below ground.
- The landfill is designed to have minimum slope above ground.



2. Conventional

- Some waste below ground, some above ground.
- The landfill liner sits above the quarry floor with additional backfill underneath.



3. Above Ground

- The landfill liner sits at ground surface height.
- All waste would be above ground as a hill.

Feasibility Screening Criteria	1. Deep	2. Conventional	3. Above Ground
Consistent with EA purpose?			
Approvable under Ontario and Federal laws?			
Technically feasible and proven technology?			✘ There is not enough area for the above ground option.
Commercially viable?			
Preliminary Conclusion	Carried forward for further evaluation	Carried forward for further evaluation	✘ Screened out from further evaluation



Record Your Thoughts:

1. Do you have questions about the options for the design of the proposed landfill?
2. Are there other options you suggest be considered?
3. Is the screening of the long list clear?
4. What are your thoughts on landfill design?

Topic 3: Haul Routes

All trucks traveling between a major Provincial route (in this case, highway 401) and the landfill must follow the chosen haul route. The only exceptions are trucks coming from local starting points (not from the 401) and when there are emergency situations such as road closures.

One haul route will be selected and then studied by technical experts to determine what impacts may occur (increased traffic, dust, etc.) We can then make a plan to prevent or mitigate any impacts.

Why is there a specific haul route?

- Good traffic flow to and from the landfill
- Trucks do not travel through densely populated or high-traffic areas, like a downtown core
- No additional wear and tear on roads not meant for heavy truck traffic

Background Information:

of Trucks Per Day:

If approved, approximately 100 Trucks (round-trips).

Schedule:

Not yet determined. An example is 7am to 5pm Monday to Saturday.

Types of Trucks:

Some of the common truck types that carry waste to a landfill are Transport Trucks and Luger Trucks.



Transport Trucks



Luger Trucks (carry dumpsters)

Highway 401 Exit and Site Entrance

Highway Exit: County Road 6

- It is the closest exit.
- It is already used as a haul route.
- It does not run through a downtown area.

Site Entrance: Northwest Corner (no exact location yet)

- The northwest corner of the site is the most practical place to start landfilling.
- It is the area most separated from Carneuse active operations.

Please voice any concerns or input on the highway exit or site.

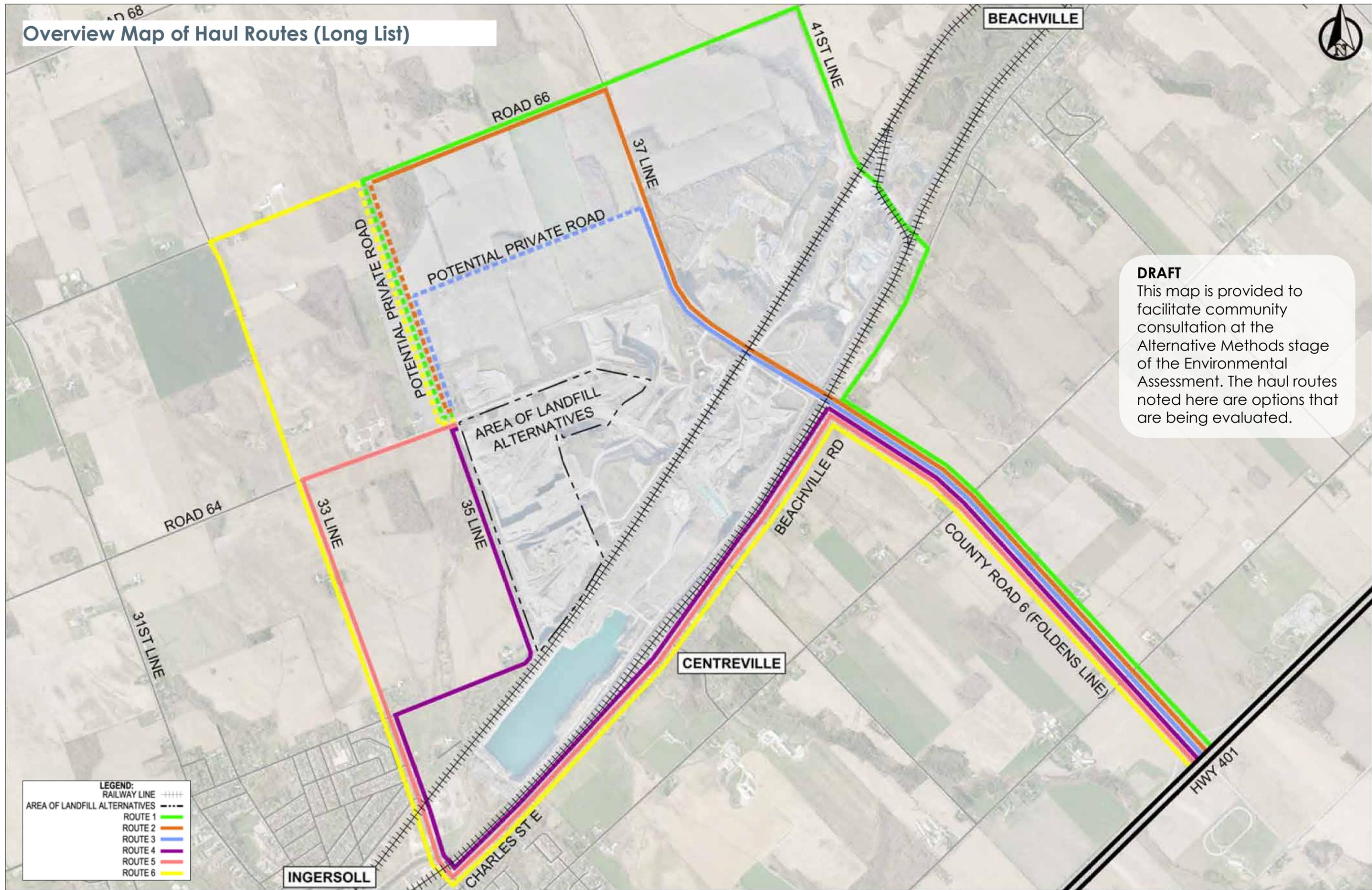
Long-List of Options for Haul Route

We realize that some of these haul routes run through populated areas (ie. Beachville Road), and may not be ideal. However, at this step, Walker must be thorough in considering all feasible options.

Local Road Infrastructure



Overview Map of Haul Routes (Long List)



DRAFT
 This map is provided to facilitate community consultation at the Alternative Methods stage of the Environmental Assessment. The haul routes noted here are options that are being evaluated.

LEGEND:

- RAILWAY LINE +---+
- AREA OF LANDFILL ALTERNATIVES - - - -
- ROUTE 1 ——— (Green)
- ROUTE 2 ——— (Orange)
- ROUTE 3 ——— (Blue)
- ROUTE 4 ——— (Purple)
- ROUTE 5 ——— (Red)
- ROUTE 6 ——— (Yellow)

ROUTE 1

- 10 km public road, 1.5 km private road
- Upgrades to 41st line required to accommodate truck traffic.
- Weight limit for bridge does not support truck traffic. Upgrades are cost prohibitive

ROUTE 2

- 8.5 km public road, 1.5 km private road
- Upgrades needed for Road 66 traffic.

ROUTE 3

- 4.75 km public road, 2.25 km private road.

ROUTE 4

- 10 km public road
- Upgrades to 35th Line would be required to accommodate truck traffic

ROUTE 5

- 10 km public road
- Upgrades to Road 64 would be required to accommodate truck traffic

ROUTE 6

- 11.5 km public road, 1.5 km private road
- Upgrades to Road 66 would be required for truck traffic

ROUTE 7 - RAIL HAUL

- Would still require truck haul route.
- Not economical for distances less than 400 km.
- Waste coming from multiple sources is difficult to manage by rail.

BEACHVILLE ROAD ROUTES
 These routes are feasible but very unlikely to be the preferred route because of the number of homes, bike route designation and other considerations.

Feasibility Screening Criteria	ROUTE 1	ROUTE 2	ROUTE 3	ROUTE 4	ROUTE 5	ROUTE 6	ROUTE 7 RAIL HAUL
Consistent with EA purpose?							
Approvable under Ontario and Federal laws?							
Technically feasible and proven technology?							
Commercially viable?	✗ Cost prohibitive to reconstruct bridge over CN tracks						✗ Cost prohibitive
Preliminary Conclusion	✗ Screened out from further evaluation	Carried forward for further evaluation	Carried forward for further evaluation	Carried forward for further evaluation	Carried forward for further evaluation	Carried forward for further evaluation	✗ Screened out from further evaluation

↓

In draft evaluations, Route 3 shows the most advantages and is likely the preferred option Walker will put forward for discussion.



Record Your Thoughts:

1. Do you have questions about the 401 exit, site entrance, or options for the haul route?
2. Are there other options you suggest be considered?
3. Is the screening of the long list clear?
4. What are your thoughts on the haul route, 401 exit and site entrance?

Topic 4: Leachate Management

What is leachate and how is it managed?

Leachate is water that has come into contact with waste. It is created when rain water or melted snow filters through waste in the landfill. Once leachate reaches the landfill liner, it is pumped out of the landfill for treatment.

Leachate is managed to protect human health and the environment. A leachate management system collects and treats leachate. The water treatment facility must clean the collected water according to standards before it can flow back into the environment. Leachate must be treated and tested in a similar way to municipal wastewater.

In general, how is leachate managed?

1. Leachate is collected in pipes, then pumped out of a landfill for treatment.
2. It is initially stored to balance flow into the treatment system.
3. It is treated and the treated water is returned to the environment.
4. Leachate treatment and management continues after landfill closure.

Long-List of Options for Leachate Management

1. Pipe to Municipal Wastewater Treatment Plant (WWTP)

- Leachate is pumped to the municipal sewer system by pipe and is treated at a municipal wastewater treatment plant.

2. Haul to Municipal Wastewater Treatment Plant (WWTP)

- Leachate is trucked to a municipal wastewater treatment plant where it is treated.

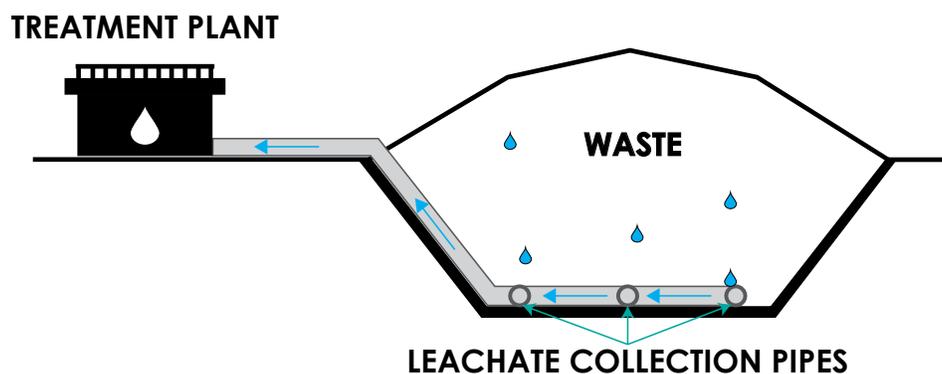
3. On-Site Treatment Plant

- Treat the leachate on-site at the landfill.
- Use of treatment processes designed for the leachate produced at the landfill.
- Several private landfills in Ontario use this option.

4. On-Site Evaporation Plant

- On-site treatment.
- Heat and evaporate leachate to produce steam.

Feasibility Screening Criteria	1. Pipe to Municipal WWTP	2. Haul to Municipal WWTP	3. On-Site Treatment Plant	4. On-Site Evaporation Plant
Consistent with EA Purpose?				
Approvable under Ontario and Federal law?	✘ Not permitted under Oxford County by-law	✘ Not permitted under Oxford County by-law.		
Technically feasible and proven technology?				✘ Not yet proven technology at this scale.
Commercially viable?		✘ Prohibitively high cost to haul elsewhere.		
Preliminary Conclusion	✘ Screened out from further evaluation.	✘ Screened out from further evaluation.	Carried forward for further evaluation	✘ Screened out from further evaluation.



Record Your Thoughts:

1. Do you have questions about the options for leachate management?
2. Are there other options you suggest be considered?
3. Is the screening of the long list clear?
4. What are your thoughts on leachate management?

Topic 5: Landfill Gas Management

What is landfill gas and how much is produced?

Landfill gas is created when organic waste breaks down within the landfill; like food, paper and wood. Landfill gas production increases as the landfill is filled, peaks just after closure, then slowly declines over a few decades.

At the Walker Environmental South Landfill in Niagara, which is similar in size to the proposed Southwestern Landfill, the peak gas collection rate is predicted to be 17,000 cubic meters per hour. This is enough energy to heat approximately 15,000 Canadian homes every year.

Why and how is landfill gas managed?

Landfill gas is managed to protect the local community and environment from impacts of landfill gas, especially as it relates to odour and greenhouse gas emissions.

In addition to minimizing impacts, landfill gas can also be a renewable energy source for electricity or to displace the need for natural gas or coal. Walker Environmental's partnership company, Integrated Gas Recovery Services Inc. (IGRS) is Canada's largest landfill gas utilization company.

Long List of Options for Landfill Gas Management

1. Passive Venting

- Landfill gas is allowed to pass through the landfill cover into the atmosphere.
- Vent pipes may be required in the cover or around the perimeter to assist with venting.

2. Flaring

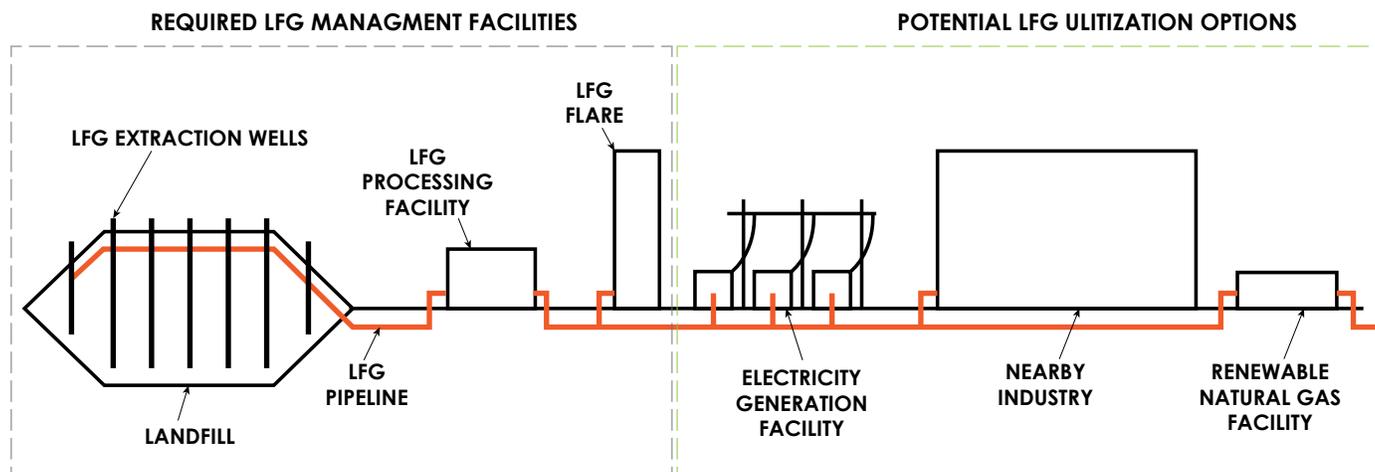
- Landfill gas is (burned) under controlled conditions.
- Exhaust from flare must meet air quality standards.
- Capturing and flaring is the primary means to reduce greenhouse gas emissions.

3. Utilization (Energy from Landfill Gas)

- Landfill gas can be pre-treated (remove moisture and some impurities), compressed and then used:
 - As an industrial fuel, to replace natural gas or other fuels
 - To power an engine generating electricity
 - Turned into renewable natural gas.

Feasibility Screening Criteria	1. Passive Venting	2. Flaring	3. Gas Utilization
Consistent with EA Purpose?			
Approvable under Ontario and Federal law?	✘ Not allowed under Ontario Regulation 232/98.		
Technically feasible and proven technology?			
Commercially viable?			
Preliminary Conclusion	✘ Screened out from further evaluation.	Carried forward for further evaluation.	Carried forward for further evaluation.

Example of How Landfill Gas is Managed and Potentially Used



Record Your Thoughts:

1. Do you have questions about the options for landfill gas management?
2. Are there other options you suggest be considered?
3. Is the screening of the long list clear?
4. What are your thoughts on landfill gas management?

Next Steps

Thank you for your participation in the Alternative Methods Public Workshop. The input you have provided today will be recorded, considered, and incorporated where possible.

In November, Walker will host a public event that will outline how short-listed options were further narrowed down to the Preferred Alternative. The Preferred Alternative will be studied in detail during the technical and scientific studies. The studies are anticipated to take place between Spring 2017 and Spring 2018, including 13 different studies that will be conducted by experts hired by Walker Industries.

The studies will then be reviewed by a Peer Review Team and ultimately the Ministry of the Environment and Climate Change experts at the conclusion of the EA. Should you have any additional questions, input, or concerns at anytime prior to the workshop or following the workshop, we encourage you to contact the Southwestern Landfill Team.

You can reach us by:

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Subscribe on our website to receive email updates



You can now select what categories you would like to receive alerts for, regarding the Southwestern Landfill Environmental Assessment.

www.walkerea.com

Glossary of Terms

Alternative Methods	Different options for a component of the landfill, such as haul route. Alternative Methods are evaluated to determine the 'Preferred Alternative'.
Buffer Area	A perimeter area around the waste fill area, that provides a buffer between the landfill and other properties.
Commercial Waste	Waste originating from commercial businesses.
Contaminant	Any solid, liquid, gas, odour, heat, sound, vibration, radiation or combination of any of these, resulting directly or indirectly from human activities that may cause an adverse effect.
Cover	Soil or other approved materials placed on top of landfilled wastes, on either a daily, interim or final basis.
Environment	As defined in the Environmental Assessment Act includes the natural environment, social, economic and cultural conditions and the interrelationships between them.
Environmental Assessment (EA)	A systematic process that is conducted in accordance with applicable laws or regulations aimed at assessing the effects of a proposal on the environment. Can include the evaluation of need, alternatives, impacts, and mitigative, remedial, monitoring and/or compensatory measures.
Fill Area	The area in a landfill site where wastes are deposited.
Flaring	The burning of collected landfill gas within a controlled flaring system.
Gas Collection System	Part(s) of the landfill site designed to capture and convey landfill gas; typically consists of collection stone and/or pipes within, beneath or around the perimeter of the waste.
Groundwater	Water occurring below the ground surface contained in the pore spaces or other openings in soil or rock.
Haul Route	Public/private roads used by vehicles transporting waste to a landfill site and leaving the site.
Landfill Gas	Gases arising from the anaerobic decomposition of organic wastes; principally methane, carbon dioxide, and trace amounts of organic compounds and hydrogen sulfide.
Landfill	An approved, engineered site/facility used for the long-term or permanent disposal of waste.
Leachate	The liquid produced when water passes through wastes and picks up contaminants.
Leachate Collection System	Part(s) of a landfill site designed to capture and convey leachate; typically consists of drainage stone and/or pipes beneath or around the perimeter of the waste.
Liner	Part(s) of the landfill site designed to act as a barrier to contain leachate within the landfill and convey leachate to a management/treatment system.
Methane Gas	An odourless, colourless, combustible gas produced by the decomposition of organic waste in a landfill site.
MOECC	Ontario Ministry of the Environment and Climate Change.
Non-Hazardous Solid Waste	Waste defined by the regulations of Ontario as non-hazardous solid including waste generated by municipalities, residences and commercial, institutional and industrial operations.
Preferred Alternative	The option for a landfill component that is studied during the Impact Assessment. The Preferred Alternative is selected within the EA process in consultation with stakeholders.



Southwestern Landfill Environmental Assessment

Identification of the Preferred Alternatives Public Workshop Consultation Paper

This document was prepared for the purpose of consultation and is preliminary information only. It is intended for use at the November 16, 2016 public workshop at the Colombo Club in Beachville, ON.

General Information

Who is Walker Industries?

Walker Industries is a Canadian, 5th generation, family-owned company that has been operating in Ontario since 1887. Walker Industries now employs more than 700 people and the company's mission is to provide infrastructure to meet municipal, commercial, and residential needs. Walker Industries group of companies offers products and services including aggregates (used in construction), paving & construction services, emulsions (ex: provides moisture resistance for building materials), as well as waste and recycling services.

Walker Environmental Group Inc., a subsidiary of Walker Industries, provides resource recovery, recycling and waste disposal solutions across Canada.

With a focus on responsible business practices, Walker Environmental has become recognized nationally as a trusted company across our three core business lines: waste management, renewable energy, and organics recycling. Walker Environmental is committed to building facilities that use proven technology to manage society's waste in an environmentally responsible manner.

Our Commitments for Landfill Management

1. Environmental Protection
2. Technical Excellency
3. Environmental Protection

What is the Southwestern Landfill Environmental Assessment?

Walker Environmental is proposing a landfill in the Township of Zorra. The landfill proposal is undergoing a Provincial process called an Environmental Assessment (EA). An EA is a provincial planning and decision-making process that considers potential environmental impacts before a project is allowed to begin. Once complete, the Ontario Minister of the Environment and Climate Change will decide if the landfill is approved.

The proposed site would accept up to 850,000 tonnes of waste per year plus cover material (typically soil) for a total capacity of approximately 17 million cubic metres over a 20-year operating period. If approved, it would accept only solid non-hazardous waste that is created in Ontario.

Project Location

The proposed location for the landfill is in a mined quarry on the Carmeuse Lime (Canada) property, 374681 37th Line (Oxford County Road 6) in the Township of Zorra.

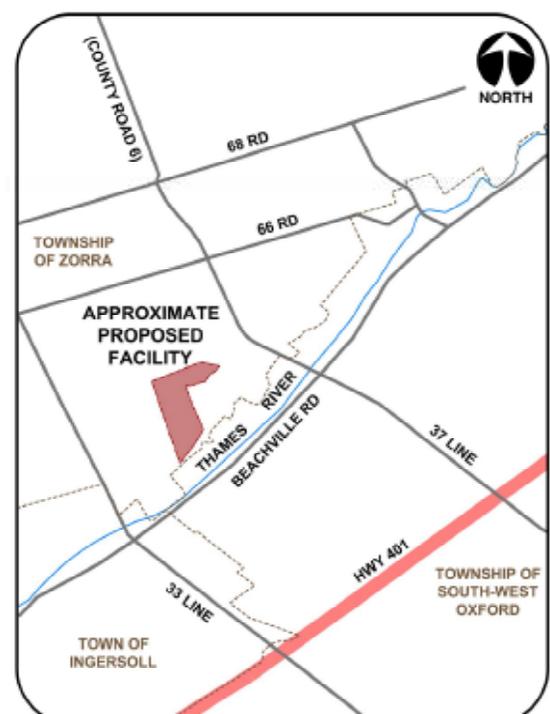


Table of Contents

General Information.....	2
Introduction.....	4
Component 1: Landfill Footprint.....	6
Component 2: Landfill Design.....	8
Component 3: Haul Route & Site Entrance.....	12
Component 4: Leachate Management.....	20
Component 5: Landfill Gas Management.....	22
Summary & Next Steps.....	24
Notes.....	26

The information presented in this document (text, graphics and maps) are all preliminary, subject to change, and/or to be improved. This information is provided to facilitate dialogue and is not a final product. There will be opportunities to review documentation throughout the Environmental Assessment process.

Introduction

Summary of October Public Workshop

Different Alternative Methods (options) were presented and discussed for 5 landfill components, at the October Workshop for the Identification and Screening of Alternative Methods. (See next page)

Four screening criteria were used to evaluate each Alternative Method:

- Consistent with EA purpose?
- Technically feasible and proven technology?
- Approvable under Ontario and Federal laws?
- Commercially viable?

Alternative methods that met all four screening criteria were carried forward for further evaluation.

Community Input

At the public workshop, the community provided input that was recorded. Throughout this consultation paper, you will see examples of key community input and how it is being considered.

What is the purpose of this Workshop?

Purpose: Provide an opportunity for constructive dialogue and meaningful input on the Preferred Alternatives, including how they were identified and what should be considered as the overall landfill design is refined and studied.

Topic: The Preferred Alternatives (selected options) are identified for each of the five landfill components discussed at the October public event. Comparative Evaluations are presented for two landfill components (Landfill Design and Haul Route), which each had two or more options left after the screening stage. These evaluations consider key categories of potential impacts:

- Public Health & Safety
- Natural Environment & Resources
- Social & Cultural
- Economic

Dialogue: Walker welcomes all input, and is specifically looking for your thoughts on:

1. Input or concerns on the Preferred Alternatives and how they were selected.
2. Things you would like Walker to consider as the Preferred Alternatives are refined into an overall facility design.

Walker is interested in your perspective as a member of the community, since you know your community best.

How will you know your input was considered?

After the workshop, your input will be documented, considered and incorporated where appropriate.

Walker is committed to providing feedback at future public events regarding:

- What input was received and considered for the Preferred Alternative discussions.
- How input affected the next step of the EA.

Where are we in the EA process?

EA Phase: “Evaluation of Alternative Methods and Identification of the Preferred Alternative”
(Section 8.1 of the Approved amended Terms of Reference)

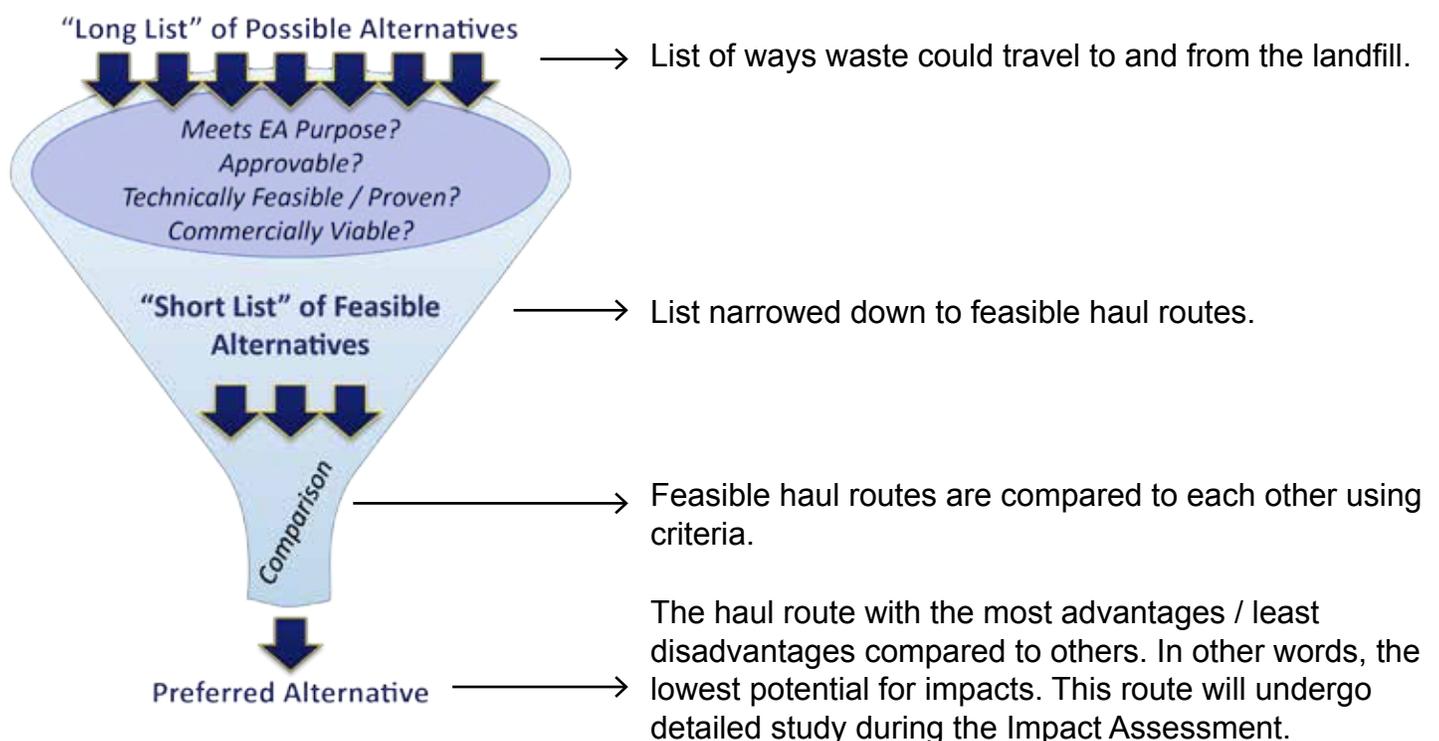


At this stage in the EA, Walker has identified the Preferred Alternatives (options) for different landfill components.

1. Landfill Footprint - Where it is located on the chosen site.
2. Landfill Design - How the landfill sits in the landfill footprint.
3. Haul Route and Site Entrance - How vehicles go to and from the landfill.
4. Leachate Management - How water that has come into contact with waste is treated.
5. Landfill Gas Management - How gas that is created in the landfill is managed and used.

The “Preferred Alternative” for each of the above landfill components is integrated into an overall general design for the landfill called “Facility Characteristics”. This design is studied as part of the “Impact Assessment”.

Example: Haul Route



Component 1: Landfill Footprint

Outcomes of October Public Workshop

- 5 potential landfill footprint areas within Carmeuse's property were presented
- 4 footprint areas were screened out
- 1 footprint area was carried forward as the Preferred Alternative (map on page 7)

Please refer to the October workshop materials for details on the screening. Footprint areas were screened for a variety of reasons including:

- Physical constraints like area size, quarry infrastructure, and rail lines.
- Approval constraints like water bodies and sterilizing high-quality lime resources.

Key Input To-Date:

The landfill footprint will be further refined in the Facility Characteristics and throughout the Environmental Assessment. The input Walker receives from the community, other stakeholders, and First Nations will continue to be taken into consideration as the EA progresses.

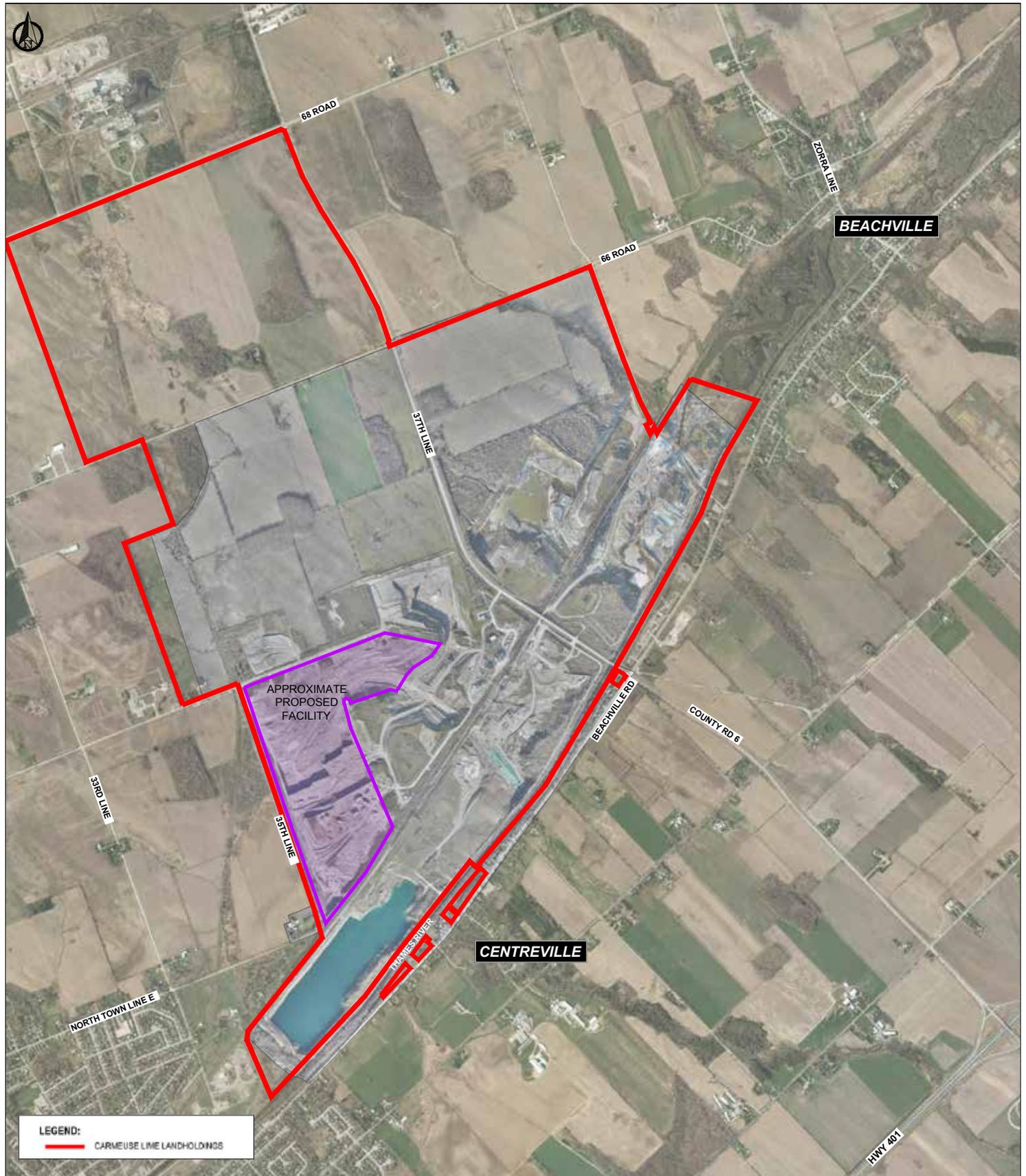
Input	Considerations
Maximize distance from residents, town centres, and the Thames River.	Footprint considerations could include moving the southern boundary of the site as far north as possible, away from Beachville Road and the Thames River, to maximize the buffer area.
Concern regarding potential impacts on groundwater or surface water.	The studies to be carried out during the Impact Assessment will include ground and surface water. The potential for impacts will be reported, as well as plans for prevention, mitigation, and contingency.
Reassess Greenfield/Future Quarry Lands designated as mineral resource (Option 1) for landfill development.	Option 1 was reassessed and additional rationale has been included and discussed with stakeholders.
Map outlining the footprint was difficult to understand.	Walker amended the map to include key constraints and the minimum area required for the landfill. (See October Public Workshop materials)



Record Your Thoughts:

1. What are your thoughts on the Preferred Alternative for Landfill Footprint?
2. What would you like Walker to consider as the Landfill Footprint is studied and refined?

Preferred Alternative: Landfill Footprint



Note: Area shown in purple is the unconstrained area potentially capable of supporting the proposed landfill. The actual landfill footprint will be revised within this area over the course of the EA.

Component 2: Landfill Design

Outcomes of October Public Workshop

- 3 potential landfill design configurations were presented
- 1 design configuration was screened out (Above Ground)
- 2 design configurations (Deep and Conventional) were carried forward to a Comparative Evaluation (pages 8-9)
- The Generic Double Composite Liner was identified as the selected landfill liner design.

Please refer to the October workshop materials for details on the screening of the design configuration. The “Above Ground” option was screened out because there is not enough area available in the unconstrained landfill footprint area.

Key Input To-Date:

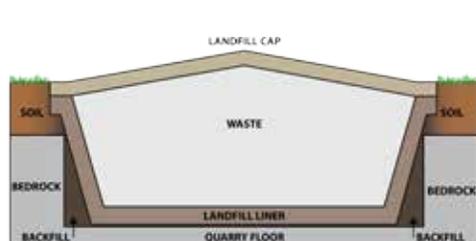
The landfill design will be further refined in the Facility Characteristics and throughout the Environmental Assessment. The input Walker receives from the community, other stakeholders, and First Nations will continue to be taken into consideration as the EA progresses.

Input	Considerations
Minimize impacts: odour, visual, birds, dust, garbage flying off-site.	Design considerations include maximizing construction and operations occurring below ground level, which reduces the potential for these impacts (one of the main benefits of the deep design).
Effectiveness of the landfill liner to protect all water, including groundwater and the Thames River from contamination.	The landfill liner is designed to be fully protective of the environment. Later in the EA, there will be opportunity to discuss monitoring and contingency planning. Protection of groundwater and surface water is a key requirement of approvals and a main priority for landfill design and operations.
Maximize distance from residents.	Design considerations could include maximizing the buffer space between the landfill and Beachville Road and other residences.
Concerns regarding impacts of adjacent blasting on landfill liner integrity.	Potential impacts to the landfill liner and other infrastructure will be studied as part of the Impact Assessment. Walker has over 30 years of experience landfilling adjacent to active quarry operations.
Concern regarding potential impacts resulting from building a landfill within fractured limestone with the potential for karst features.	The potential for impacts related to fractured bedrock will be studied as part of the Impact Assessment. As a response to community input, Walker has retained a karst expert to determine if karst conditions exist. Results will be reported, as well as plans for preventing and mitigating potential impacts. Walker has over 30 years of experience safely landfilling in mined limestone quarries.

Comparative Evaluation

To compare the Deep and Conventional landfill design configurations, the full list of 41 EA Criteria (Approved Amended Terms of Reference, Table A-1) was reviewed by Walker, and those relevant to the comparison between the two alternative designs were applied in the comparative evaluation.

The criteria, indicators, information collected, and rationale are provided in the table on pages 10-11: Comparative Evaluation for Short List of Landfill Design Alternative Methods (Options).



1. Deep

- The landfill is designed to have minimum slope above ground.

Preferred Alternative



2. Conventional

- Some waste below ground, some above ground.

Less advantages / more disadvantages than the Deep configuration (more construction & operations above ground has more potential for impacts)

Preferred Alternative: Deep Configuration

In the Comparative Evaluation, the Deep Design demonstrated the most advantages and least disadvantages. In other words, the deep design has a lower potential for impacts. This design will be refined and undergo detailed study during the Impact Assessment.

Key Advantages of Deep Design Configuration:

- Lower height reduces the exposure and duration of landfill construction and operations above ground surface. This has advantages, including:
 - Lower risk of excessive fine particulate emissions (fine dust), reducing potential health impacts.
 - Better containment and control of particulate (dust), odour, noise, and blowing litter, reducing potential nuisance impacts.
 - Lower visual impact to the closest neighbours and the surrounding community.
 - Lower risk of negative property value impacts as a result of the above.
- Deep design has shallower final cover slopes (less of a hill than other designs), which allows for more options for after-use planning, including rehabilitation to agricultural use.



Record Your Thoughts:

1. What are your thoughts on the Preferred Alternative for Landfill Design?
2. What would you like Walker to consider as the Landfill Design is studied and refined?

Comparative Evaluation for Short List of Landfill Design Alternative Methods

Criteria		Indicator(s)	Deep Design Alternative	Conventional Design Alternative
Public Health & Safety				
3	Effects due to fine particulate	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
Preferred Alternative - Public Health & Safety			The lower height of the deep alternative will result in reduced potential for wind exposure and lower risk of fine particulate emissions.	
Social and Cultural				
10	Disruption to use and enjoyment of residential properties.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
11	Disruption to use and enjoyment of public facilities and institutions.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
13	Visual impact of the waste disposal facility.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
Preferred Alternative - Social & Cultural			The lower height of the deep alternative will reduce potential for operational nuisances experienced at surrounding residential properties, public facilities and institutions.	
Economics				
23	Property value impacts.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
Preferred Alternative - Economics			The lower height of the deep alternative will result in reduced potential for operational nuisances experienced at surrounding properties and lower risk of property value loss.	
Natural Environment & Resources				
37	Displacement of agricultural land.	<ul style="list-style-type: none"> Amount of the final landfill cover that would be at maximum slope (4:1)*. 	<ul style="list-style-type: none"> None of the final landfill cover would be at maximum slope (4:1). 	<ul style="list-style-type: none"> Perimeter of the final landfill cover would be at maximum slope (4:1).
Preferred Alternative - Natural Environment & Resources			The lower final cover slopes of the deep alternative will allow an opportunity for agricultural rehabilitation of the majority of the landfill.	
Preferred Alternative - Overall			The deep design is preferred in all four groups and overall. Its lower height and slopes will minimize visibility and exposure, thereby reducing potential for off-site effects and allowing more opportunity for agricultural rehabilitation.	

* According to the Canada Land Inventory, maximum cover slopes of 4:1 (25%) under O. Reg 232/98 are Class 7T (no capability for common field crops), while minimum cover slopes of 20:1 (5%) can be improved to Class 2T (only moderate limitations for common field crops). (source: OMAFRA).

Component 3: Haul Route & Site Entrance

Outcomes of October Public Workshop

- 7 potential haul routes were presented
- 2 haul routes were screened out
- 5 haul routes were carried forward to a Comparative Evaluation (pages 13-16)
- 401 Exit #222 to County Road 6 was identified as the haul route starting point
- The northwest area of the landfill footprint was identified as the selected site entrance

Please refer to the October workshop materials for details on the screening of the haul routes. Route 1 was screened out because the cost to replace a bridge is cost prohibitive. Rail Haul was screened out because it is not commercially viable for this project (waste coming from multiple locations) and a truck haul route would still be required.

Key Input To-Date:

The landfill design will be further refined in the Facility Characteristics and throughout the Environmental Assessment. The input Walker receives from the community, other stakeholders, and First Nations will continue to be taken into consideration as the EA progresses.

Input	Considerations
Preference for the shortest route using public roads (Route 3).	Length of route on public roads was taken into consideration and was an advantage of Route 3 (Preferred Alternative).
Beachville Rd. is not appropriate for a haul route due to the number of residents and official bike route designation.	Number of residents and designated bike routes were taken into consideration and were disadvantages for Routes 4, 5 and 6.
Corner at Beachville Rd. and Pemberton St. is challenging for truck traffic.	Number of truck turns was taken into consideration, and was a disadvantage identified for Routes 4, 5 and 6 (only routes with Beachville/Pemberton turn).
Highway 401 Exit 222 (westbound) to County Road 6 is challenging and could post safety risks due to the service station off-ramp.	The exit from highway 401 to County Road 6 will be considered as part of the EA. Walker will consult with the Ministry of Transportation (MTO) regarding Highway 401 and Exit 222.
Intersection at 4-way stop at County Road 6 and Beachville Rd. could present issues, including risk to public safety.	The intersection will be studied by experts as part of the Impact Assessment, including considerations of public health and safety.
Recommendations for additional criteria and indicators for the comparative evaluation.	Addition of following indicators: <ul style="list-style-type: none"> • Number and type of railroad crossings • Length of new road construction required (in regard to potential for archaeological resource displacement/ disruption) • Number of playgrounds along haul route
Archaeological and ecological studies should be conducted where new roads are proposed to be built.	Walker agrees. Archaeology and ecology will be studied during the Impact Assessment, including where new private roads would be constructed.

Comparative Evaluation

To compare the five short-listed haul routes, the full list of 41 EA Criteria (Approved Amended Terms of Reference, Table A-1) was reviewed by Walker and those relevant to the comparison between the two alternative designs were applied in the comparative evaluation.

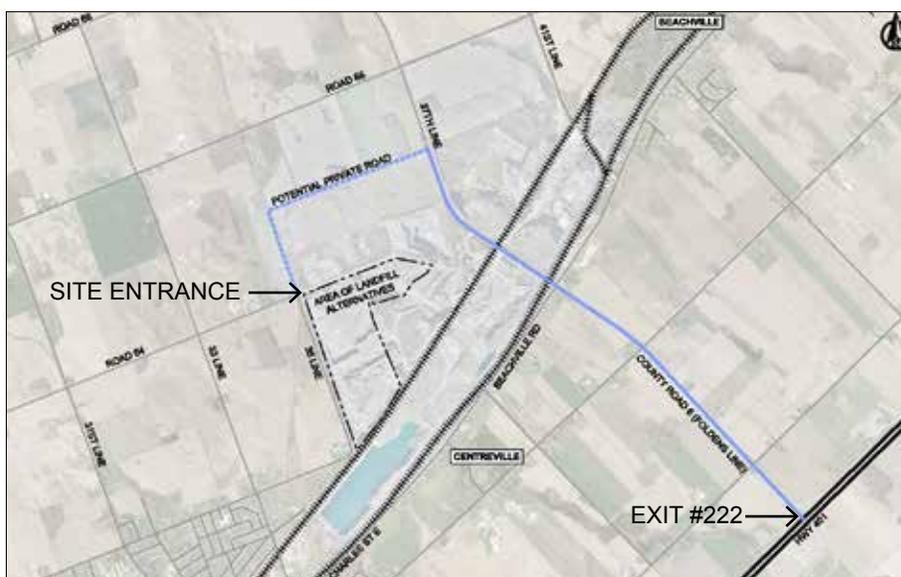
The criteria, indicators, information collected, and rationale are provided in the table on pages 16-19: Comparative Evaluation for Short List of Haul Route Alternative Methods (Options).

Preferred Alternative - Route 3

In the comparative evaluation, Route 3 demonstrated the most advantages and least disadvantages, and is selected as the Preferred Alternative. In other words, Haul Route 3 has a lower potential for impacts. This haul route will undergo detailed study during the Impact Assessment.

Exit #222 on Highway 401, North on County Road 6, turn west onto private road into the landfill.

The site entrance is located in the Northwest corner area - location will be refined in Facility Characteristics and throughout the Environmental Assessment.



Key Advantages of Preferred Haul Route (lowest potential for impacts):

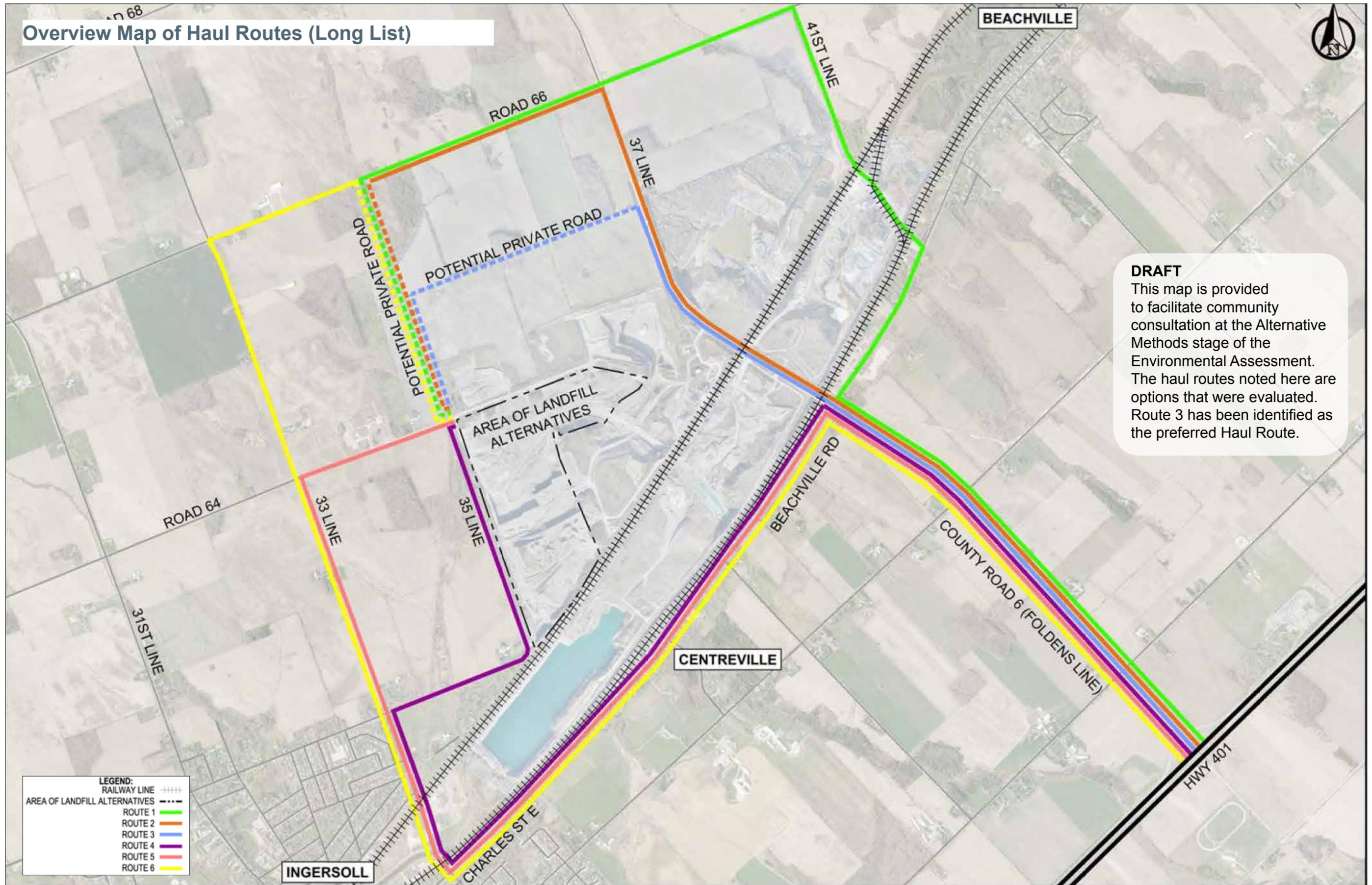
- Shortest haul route on public roads
- Fewest residences, farms, public institutions, recreational uses, and businesses along the route
- Passes the fewest farm field entrances
- Fewest turns, intersection crossings
- Designated for heavy truck traffic
- Avoids truck traffic along the Beachville Road bicycle route



Record Your Thoughts:

1. What are your thoughts on the Preferred Alternative for Haul Route?
2. What would you like Walker to consider as the Haul Route and Site Entrance are studied and refined?

Overview Map of Haul Routes (Long List)



DRAFT
 This map is provided to facilitate community consultation at the Alternative Methods stage of the Environmental Assessment. The haul routes noted here are options that were evaluated. Route 3 has been identified as the preferred Haul Route.

LEGEND:

- RAILWAY LINE +---+
- AREA OF LANDFILL ALTERNATIVES - - - -
- ROUTE 1 (Green line)
- ROUTE 2 (Orange line)
- ROUTE 3 (Blue line)
- ROUTE 4 (Purple line)
- ROUTE 5 (Red line)
- ROUTE 6 (Yellow line)

Comparative Evaluation for Short List of Haul Route Alternative Methods

Criteria		Indicator(s)	ROUTES TRAVELLING DOWN BEACHVILLE ROAD				
			Haul Route #2	Haul Route #3	Haul Route #4	Haul Route #5	Haul Route #6
Public Health & Safety							
3	Effects due to fine particulate.	<ul style="list-style-type: none"> Number of residences along route 	<ul style="list-style-type: none"> 0 residences along County Road 6 One residence on Road 66 	<ul style="list-style-type: none"> 0 residences along County Road 6 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street
7	Potential for traffic collisions.	<ul style="list-style-type: none"> Length of route on public roads Number of intersection crossings Number of truck turnings Number and type of railroad crossings 	<ul style="list-style-type: none"> Approximately 6.7 km of haul route on public roads One intersection crossing and two turns One signaled level rail crossing 	<ul style="list-style-type: none"> Approximately 4.4 km of haul route on public roads One intersection crossing One turn One signaled level rail crossing 	<ul style="list-style-type: none"> Approximately 9.7km of haul route on public roads One intersection crossing Five turns Two signaled level rail crossings 	<ul style="list-style-type: none"> Approximately 9.7 km of haul route on public roads One intersection crossing Three turns Two signaled level rail crossings 	<ul style="list-style-type: none"> Approximately 11.2 km of haul route on public roads Two intersection crossings Five turns Two signaled level rail crossings
Preferred Alternative - Public Health & Safety				Haul Route #3 alternative is the shortest on public roads and has fewest adjacent residences.			
Social and Cultural							
10	Disruption to use and enjoyment of residential properties.	<ul style="list-style-type: none"> Number of residences along route Number of intersection crossings Number of truck turnings 	<ul style="list-style-type: none"> 0 residences along County Road 6 One residence on Road 66 One intersection crossing Two turns 	<ul style="list-style-type: none"> 0 residences along county Road 6 One intersection crossing One turn 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street One intersection crossing Five turns 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street One intersection crossing Three turns 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street Two intersection crossings Five turns
11	Disruption to use and enjoyment of public facilities and institutions.	<ul style="list-style-type: none"> Number of community facilities and institutions along route Number of intersection crossings Number of truck turnings 	<ul style="list-style-type: none"> None One intersection crossing Two turns 	<ul style="list-style-type: none"> None One intersection crossing Two turns 	<ul style="list-style-type: none"> Two institutions (Hi Way Pentecostal Church & Ingersoll Rural Cemetery) One intersection crossing Five turns 	<ul style="list-style-type: none"> One institution (Hi Way Pentecostal Church) One intersection crossing Three turns 	<ul style="list-style-type: none"> One institution (Hi Way Pentecostal Church) Two intersection crossings Five turns
12	Disruption to local traffic networks.	<ul style="list-style-type: none"> Number of stops and turning movements associated with route 	<ul style="list-style-type: none"> Two turns Existing 4-way stop Existing 2-way stop Road construction required 	<ul style="list-style-type: none"> One turn Existing 4-way stop 	<ul style="list-style-type: none"> Five turns Existing 4-way stop 4 existing 2-way stops Road construction required 	<ul style="list-style-type: none"> Three turns Existing 4-way stop 4 existing 2-way stops Road construction required 	<ul style="list-style-type: none"> Five turns Existing 4-way stop 4 existing 2-way stops Road construction required
17	Displacement/destruction of archaeological resources.	<ul style="list-style-type: none"> Length of new or widening of both public and private roads 	<ul style="list-style-type: none"> Approximately 3 km 	<ul style="list-style-type: none"> Approximately 2 km 	<ul style="list-style-type: none"> Approximately 3 km 	<ul style="list-style-type: none"> Approximately 3 km 	<ul style="list-style-type: none"> Approximately 4.5 km
19	Effects on other public services.	<ul style="list-style-type: none"> Length of each route on local road system (i.e.; other than Provincial, County, or private roads) 	<ul style="list-style-type: none"> 1.5 km 	<ul style="list-style-type: none"> 0 km 	<ul style="list-style-type: none"> 6.9 km 	<ul style="list-style-type: none"> 7 km 	<ul style="list-style-type: none"> 8.5 km
20	Changes to community character/cohesion.	<ul style="list-style-type: none"> Number of residences along route 	<ul style="list-style-type: none"> 0 residences One residence on Road 66 	<ul style="list-style-type: none"> 0 residences 	<ul style="list-style-type: none"> 112 residences 	<ul style="list-style-type: none"> 112 residences 	<ul style="list-style-type: none"> 112 residences
21	Compatibility with municipal land use designations and official plans.	<ul style="list-style-type: none"> Provincial and municipal road designations for heavy truck traffic Existing provincial and municipal land use designations for closed or unopened sections of road allowances 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 1.5 km on local roads 	<ul style="list-style-type: none"> Currently compatible with heavy truck traffic. 0 km on local roads 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 6.9 km on local roads 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 7.0 km on local roads 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 8.5 km on local roads
Preferred Alternative - Social & Cultural				Haul Route #3 alternative is designated for heavy truck traffic and has the fewest truck turns, intersection crossing, residences and institutions.			

Comparative Evaluation for Short List of Haul Route Alternative Methods

				ROUTES TRAVELLING DOWN BEACHVILLE ROAD			
Criteria		Indicator(s)	Haul Route #2	Haul Route #3	Haul Route #4	Haul Route #5	Haul Route #6
Economics							
22	Displacement/disruption of businesses or farms.	<ul style="list-style-type: none"> Number and types of businesses and farms along route 	<ul style="list-style-type: none"> One large heavy industry (Carmeuse operations) Two farms 	<ul style="list-style-type: none"> One large heavy industry (Carmeuse operations) 	<ul style="list-style-type: none"> 5 businesses (Welding shop, mechanics shop, hydraulics shop, transport company) 6 farms 	<ul style="list-style-type: none"> 5 businesses (Welding shop, mechanics shop, hydraulics shop, transport company) 6 farms 	<ul style="list-style-type: none"> 5 businesses (Welding shop, mechanics shop, hydraulics shop, transport company) 9 farms
23	Property value impacts.	<ul style="list-style-type: none"> Number of properties adjacent to route Number and types of businesses and farms along route 	<ul style="list-style-type: none"> 0 residences on County Rd 6 One residence on Road 66 Two farms One large heavy industry (Carmeuse operations) 	<ul style="list-style-type: none"> 0 residences One large heavy industry (Carmeuse operations) 	<ul style="list-style-type: none"> 112 residences 6 farms One institutional 5 businesses 	<ul style="list-style-type: none"> 112 residences 6 farms One institutional 5 businesses 	<ul style="list-style-type: none"> 112 residences 9 farms One institutional 5 businesses
28	Public costs for indirect liabilities.	<ul style="list-style-type: none"> Length of each route on local road system (i.e.; other than Provincial, County, or private roads) 	<ul style="list-style-type: none"> 1.5 km 	<ul style="list-style-type: none"> 0 km 	<ul style="list-style-type: none"> 6.9 km 	<ul style="list-style-type: none"> 7 km 	<ul style="list-style-type: none"> 8.5 km
30	Effect on the cost of service to customers.	<ul style="list-style-type: none"> Relative cost of road reconstruction/upgrade for heavy truck traffic 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 	<ul style="list-style-type: none"> No significant reconstruction or upgrading required. 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic
Preferred Alternative - Economics				Haul Route #3 alternative does not require any significant road reconstruction or upgrading, and the least potential to affect adjacent property values			
Natural Environment & Resources							
38	Disruption of farm operations.	<ul style="list-style-type: none"> Number of field entrances along the haul route 	<ul style="list-style-type: none"> 8 field entrances 	<ul style="list-style-type: none"> 1 field entrance 	<ul style="list-style-type: none"> 5 field entrances 	<ul style="list-style-type: none"> 4 field entrances 	<ul style="list-style-type: none"> 3 field entrances
41	Loss/disruption of recreational resources.	<ul style="list-style-type: none"> Number and proximity of recreational resources along route Number of playgrounds along route Length of haul route coinciding with bike routes 	<ul style="list-style-type: none"> None known 	<ul style="list-style-type: none"> None known 	<ul style="list-style-type: none"> Beachville Road is a designated bicycle route 3.5 km 	<ul style="list-style-type: none"> Beachville Road is a designated bicycle route 3.5 km 	<ul style="list-style-type: none"> Beachville Road is a designated bicycle route 3.5 km
Preferred Alternative - Natural Environment & Resources				Haul Route #3 alternative has the fewest farm field entrances and no known adjacent recreational resources.			
Preferred Alternative - Overall				Haul Route # 3 alternative is preferred overall. It is the only alternative that is preferred in all four groups of criteria.			

Component 4: Leachate Management

Outcomes of October Public Workshop

- 4 potential leachate management options were presented
- 3 options were screened out
- 1 option was carried forward as the Preferred Alternative for Leachate Management

Please refer to the October workshop materials for details on the screening. Leachate management options were screened for a variety of reasons including:

- Piping or hauling leachate to a local Municipal Wastewater Treatment Plant (WWTP) are not permitted under Oxford County By-Laws.
- Hauling leachate to a WWTP outside of the County is not commercially viable.
- On-site evaporation plant technology is not yet proven at this scale.

Key Input To-Date:

The landfill design will be further refined in the Facility Characteristics and throughout the Environmental Assessment. The input Walker receives from the community, other stakeholders, and First Nations will continue to be taken into consideration as the EA progresses.

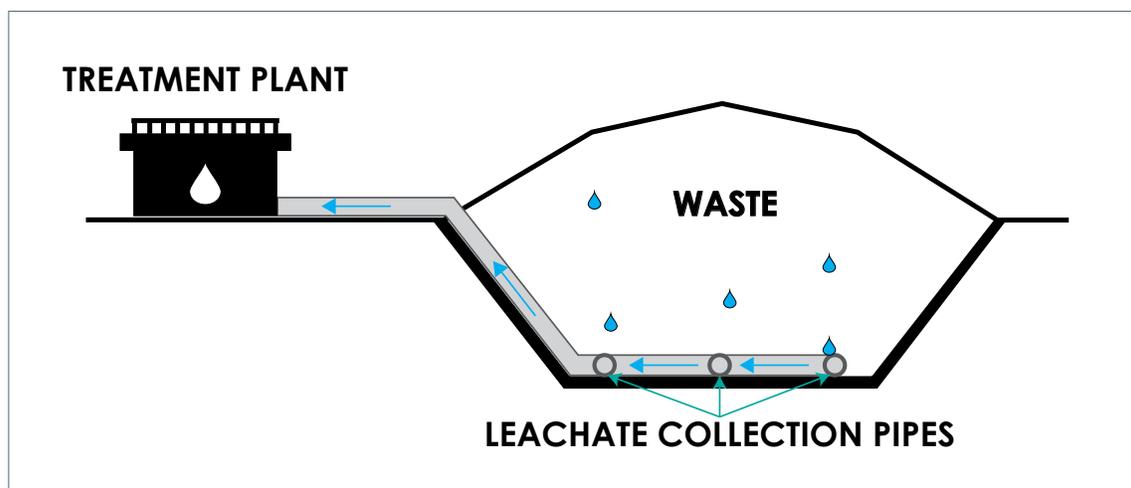
Input	Considerations
Leachate holding ponds need to be fully protective of the environment.	Walker agrees and this will be a key consideration when designing any holding ponds required for the leachate management system.
Potential future issues in event Walker abandons site.	As part of post-EA approvals (Environmental Compliance Approval), Financial Assurance is required by the Ministry of the Environment and Climate Change (MOECC). This is money set aside for the MOECC to use in the event Walker does not care for the site as required.
Leachate holding ponds should be designed to deter birds from landing and other animals from approaching. (Protection of birds/animals and protection of humans/livestock from disease carried by birds.)	Walker agrees and this will be a consideration when designing holding ponds required for the leachate management system.
Concern regarding impact of treated water on Thames River Watershed (quantity, quality, ecology).	The proposed leachate management and treatment will be refined and studied as part of the Impact Assessment, including the ability of leachate treatment infrastructure to meet strict water quality guidelines, as well as any objectives specific to the Thames River Watershed.

Preferred Alternative - On-Site Leachate Treatment Plant

Key Advantages of an On-Site Leachate Treatment Plant:

- The facility would be built with technology designed specifically to treat leachate.
- No impact to the capacity of local municipal wastewater treatment infrastructure.
- Once treated, the water could be used for on-site activities like dust control to minimize the use of groundwater for these purposes.

On-Site Treatment Plant



Concept diagram of leachate being removed from landfill and sent for treatment.



Examples of on-site wastewater treatment infrastructure.



Record Your Thoughts:

1. What are your thoughts on the Preferred Alternative for Leachate Management?
2. What would you like Walker to consider as the Leachate Management System is studied and refined?

Component 5: Landfill Gas Management

Outcomes of October Public Workshop

- 3 potential landfill gas management options were presented
- 1 option was screened out
- 2 options were carried forward as a combined Preferred Alternative

Please refer to the October workshop materials for details on the screening. Passive venting was screened out because it is not permitted under Ontario Regulation 232/98.

Key Input To-Date:

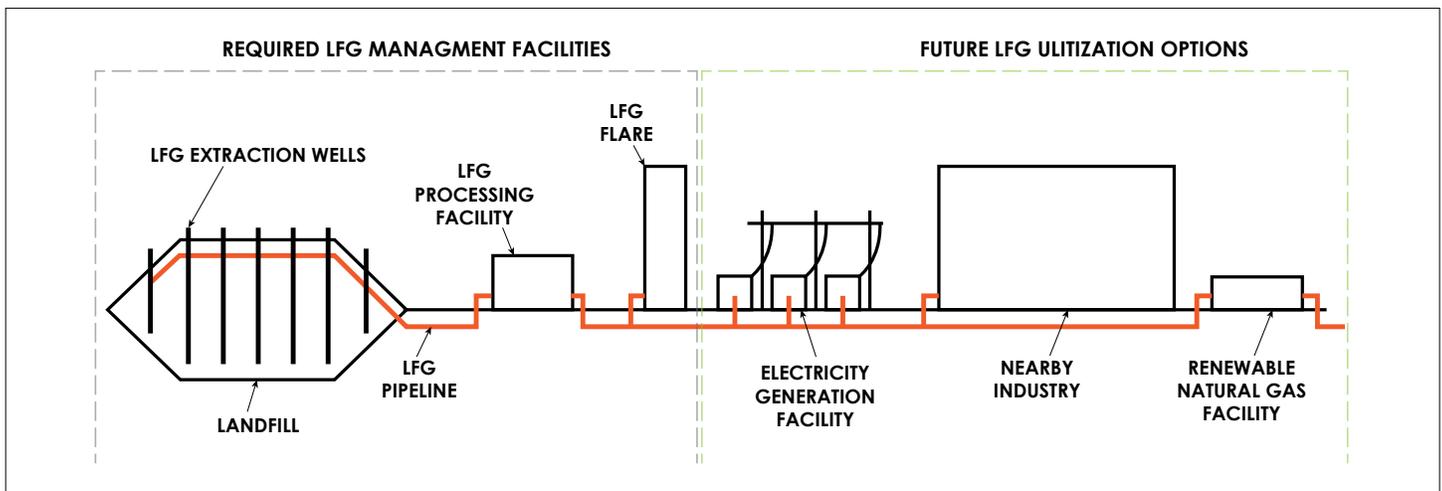
The landfill design will be further refined in the Facility Characteristics and throughout the Environmental Assessment. The input Walker receives from the community, other stakeholders, and First Nations will continue to be taken into consideration as the EA progresses.

Input	Considerations
Safety of burning landfill gas (particularly methane component) and risk for fire or explosion.	One of the main purposes of managing landfill gas and burning it in a controlled environment is to minimize the risk for fire or explosion. Fires and explosions resulting from landfill gas are very uncommon, particularly in modern landfills that collect and manage gas. This will be taken into consideration as the landfill gas management infrastructure is designed, including meeting or exceeding all safety and building requirements.
Risk of odour from landfill gas management.	One purpose of managing landfill gas is to prevent odours. This will be taken into consideration as the landfill gas management system and procedures are developed. For example, in Niagara there is a full-time technician who “tunes” each landfill gas well every week for maximum performance and odour control.

Preferred Alternative - Flaring & Gas Utilization

Flaring and Gas Utilization is the combined Preferred Alternative for the following reasons:

- Despite the beneficial aspects of gas utilization, a flaring system will be required to safely manage excess gas that cannot be utilized (e.g., early/late years, low demand periods, maintenance, etc.)
- Landfill gas production will not reach commercially viable quantities until at least five years into the landfill operations (approximately 2028). A flaring system will be required until then.
- Utilizing the landfill gas as a renewable energy source will help Ontario reduce its GHG emissions. Different ways of utilizing the landfill gas exist and further studies will determine how and when to implement a utilization project.



Concept diagram of landfill gas being extracted from landfill and managed.



Walker South Landfill - landfill gas flares



Walker South Landfill - landfill gas utilization infrastructure



Record Your Thoughts:

1. What are your thoughts on the Preferred Alternative for Landfill Gas Management?
2. What would you like Walker to consider as the Landfill Gas Management System is studied and refined?

Summary & Next Steps

Summary of Preferred Alternatives

The Preferred Alternatives for all five landfill components will be integrated into an overall landfill design called Facility Characteristics, which will be used to finalize the Technical Work Plans in preparation for the Technical Studies.

The landfill design will continue to be refined in consultation with the public and other stakeholders throughout the Environmental Assessment process.

Component	Preferred Alternative
Landfill Footprint	Unconstrained portion of the active quarry area. Quarrying and landfilling would co-exist on the site during landfill construction and beginning of landfilling operations.
Landfill Design	A deep design configuration using the Generic Double Composite Liner system designed and approved by the Ministry of Environment and Climate Change.
Haul Route/Site Entrance	Truck haulage on Route 3 - from Exit 222 on Highway 401, north on County Road 6, then west onto a private road on Carmeuse property that would be constructed. Site entrance in the northwest portion of the landfill footprint.
Leachate Treatment	An on-site leachate treatment plant.
Landfill Gas Management	Enclosed flaring, with the potential for future development of gas utilization when there is sufficient gas production and in respect of regulations and energy market conditions at that time.

Next Steps

The Preferred Alternatives will be integrated into the proposed design of the Southwestern Landfill proposal, called Facility Characteristics. This proposed design will then be integrated into the draft Technical Work Plans that lay out the Technical Studies to be carried out. The studies will assess potential impacts of the proposed landfill. More information about next steps can be found in Section 8.2 of the Approved Amended Terms of Reference.

Subscribe on our website to receive email updates



You can now select what categories you would like to receive alerts for, regarding the Southwestern Landfill Environmental Assessment.

www.walkerea.com

Notes

Record your thoughts here...



Proposed Southwestern Landfill

What: Landfill for solid, non-hazardous waste created in Ontario.

Where: Mined-out quarry on Carmeuse Lime property in the Township of Zorra.

DID YOU KNOW?

Ontarians send approximately 3.5 million tonnes of waste to the United States each year.

Proposed Facility:

Estimated Total Capacity: 17 million cubic metres

Estimated Annual Waste Intake: 850,000 tonnes per year (plus daily cover material)

Estimated Operating Period: 20 years

What would be included in the landfill?

- Landfill area
- Access roads
- Site entrance where trucks are weighed, inspected and approved to enter
- A buffer (waste free area) around the landfill
- Landfill gas collection and management infrastructure
- Leachate collection and management infrastructure
- Environmental monitoring equipment and installations (e.g. groundwater monitoring wells)



Groundwater monitoring well

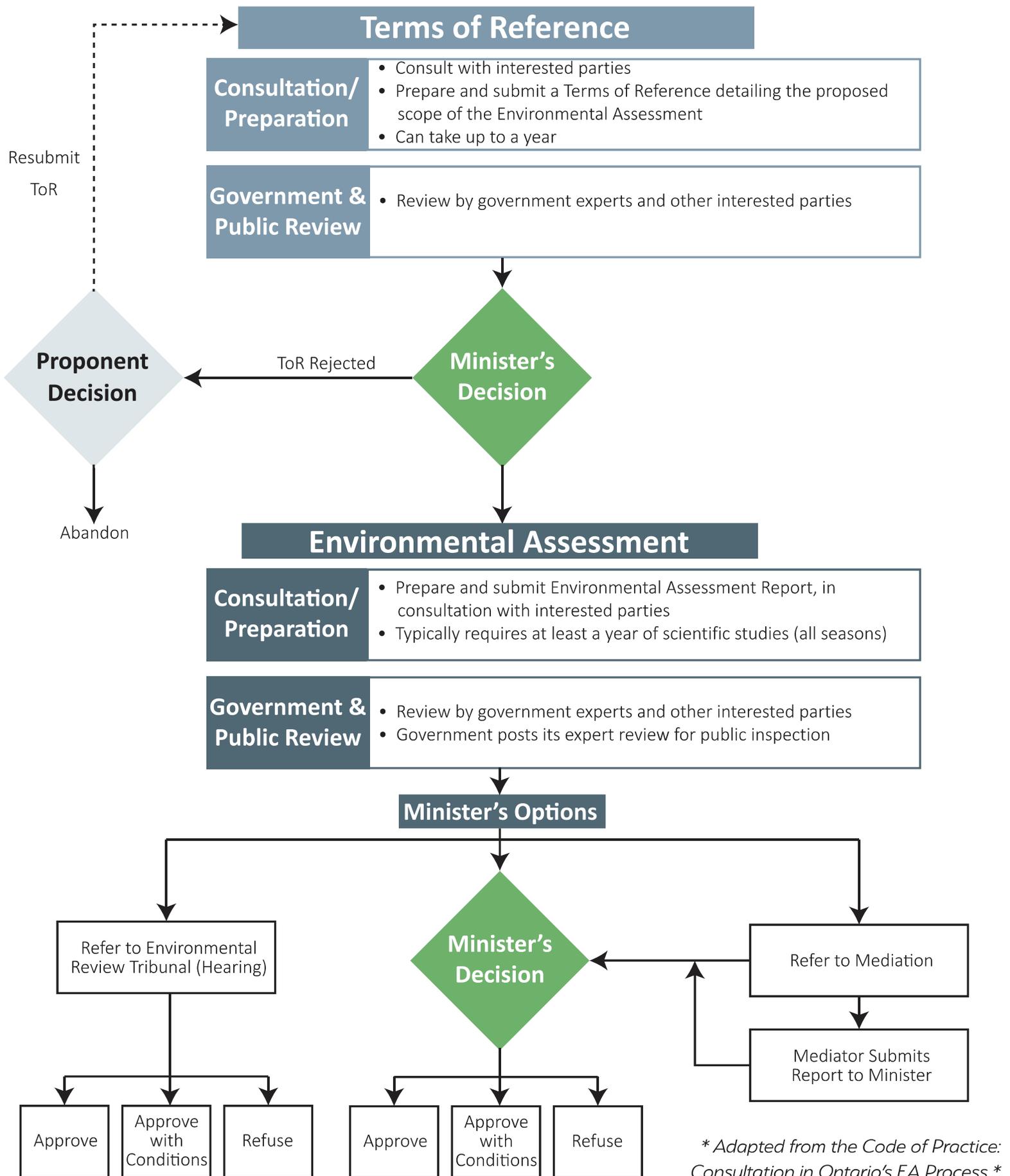


Landfill Scalehouse



Ministry of the Environment and Climate Change

Environmental Assessment Process in Ontario



Community Liaison Committee

Timing:

Usually 4th Wednesday of the month, 6-9 pm

A group including community members, municipal representatives, the Conservation Authority, and Walker team members.

Observers are welcome, just give us a call.

Joint Municipal Coordinating Committee

Timing:

At key milestones

A group comprised of Mayors and Chief Administrative Officers (CAO's) from Zorra, Ingersoll and Southwest Oxford as well as the Warden and CAO of Oxford County.

Input and comments from the JMCC are available on our website or by request.

Public Events

Timing:

At key milestones

Events where anyone who is interested in the project can get information and provide input.

Information will be available ahead of time in our newsletter and on our website.

First Nations Consultation

Timing:

Regular meetings and at key milestones

Visits to First Nations, meetings with staff, councils and Chiefs. Attendance at community events.

First Nations values and input are considered in the Environmental Assessment.

Community Relations & Office

Timing:

Office Hours: Mon - Fri, 9 am - 4 pm

Meetings at key milestones and when requested

Meeting individuals and groups (ie. municipal councils, organizations, neighbours) at our office or in the community.

Give us a call to set up a time for you and your organization to voice concerns and questions.

Mailing List & Website

Timing:

Regular updates, newsletters & other information

Newsletters, company and project information, all project documents, FAQ's, project news and more.

Please visit www.walkerea.com for more information or to subscribe.

Spring 2012 -
Spring 2016

Terms of Reference (ToR)

- The first part of the EA process
- A document that explains how we intend to carry out the second part of the process (the Environmental Assessment)

The Terms of Reference was Approved by the
Minister of the Environment and Climate Change on March 17, 2016

Summer 2016 -
Spring 2017

General Design & Work Plans

- Evaluation of different options for the landfill
- Integrate new information into the technical work plans that were drafted during the ToR.
 - Chosen options for the landfill
 - Official Plan information
 - Climate change predictions

Spring 2017 -
Spring 2018

Scientific Assessment

Experts carry out technical and scientific studies on 13 topics:

- | | | |
|---------------------|--------------------------------|----------------------|
| • Agriculture | • Economic | • Social |
| • Air Quality | • Groundwater/Surface Water | • Traffic |
| • Archaeology | • Human Health Risk Assessment | • Visual |
| • Cultural Heritage | • Noise and Vibration | • Cumulative Effects |
| • Ecology | | |

Spring 2018 -
Summer 2018

Detailed Landfill Design

Results of the studies are used to:

- Refine the landfill design
- Propose measures to prevent and mitigate potential impacts

Summer 2018 -
Fall 2018

EA Document Prep & Review

Walker prepares EA documents that describe:

- The EA process that was carried out
- Consultation activities and community input
- Proposed landfill design
- Identification of any potential impacts
- Proposed impact prevention and mitigation programs

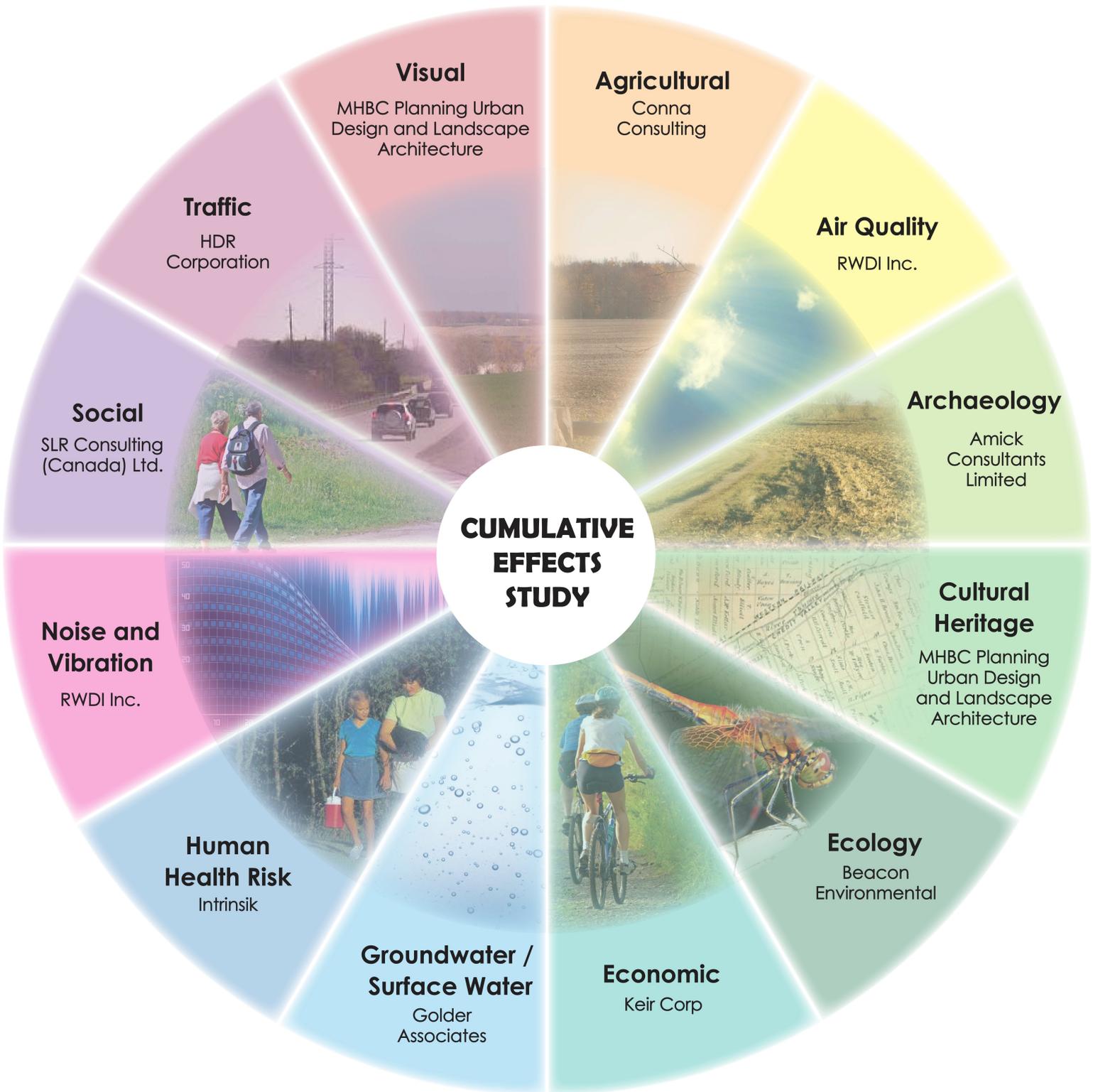
Draft documents are reviewed by the Community Liaison Committee, other interested members of the community and organizations, the expert Peer Review Team for the Joint Municipal Coordinating Committee (JMCC), government and agency reviewers, and First Nations.

Fall 2018

Final EA Submission

Walker makes final edits and submits the final EA documents to the MOECC.

* All dates are estimates only *





walker
environmental

Thank you

**for attending
our public event.**

GUEST SIGN UP SHEET

PUBLIC OPEN HOUSE

Thursday, October 13th, 2016
Colombo Club of Oxford

SESSION ONE

NAME	ADDRESS	CITY	POSTAL CODE	PHONE	EMAIL	MAILING LIST?
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No

We value your privacy

Under the *Freedom of Information and Protection of Privacy Act* and the *Environmental Assessment Act*, unless otherwise stated any personal information such as name, address, telephone number and property location included will become part of the public record files for this matter and will be released, if requested, to any person.

PLEASE SIGN UP FOR OUR NEXT PUBLIC EVENT

TO BE HELD ON: **Wednesday, November 16th, 2016**

Guest Sign-Up Sheet

TO BE HELD AT: **Colombo Club of Oxford**

NAME	ADDRESS	CITY	POSTAL CODE	PHONE	EMAIL	MAILING LIST?
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No
						<input type="checkbox"/> Yes <input type="checkbox"/> No

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Southwestern Landfill Proposal

Working Together to Support More Sustainable Communities

Comment Card

Please provide your input! Your comments and suggestions are important to us.

Date: _____

A Walker Industries Project
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Vol IV Appendix I-6 Public Presentations & Meetings

2016-10-16 Presentation to Carmeuse Lime Staff



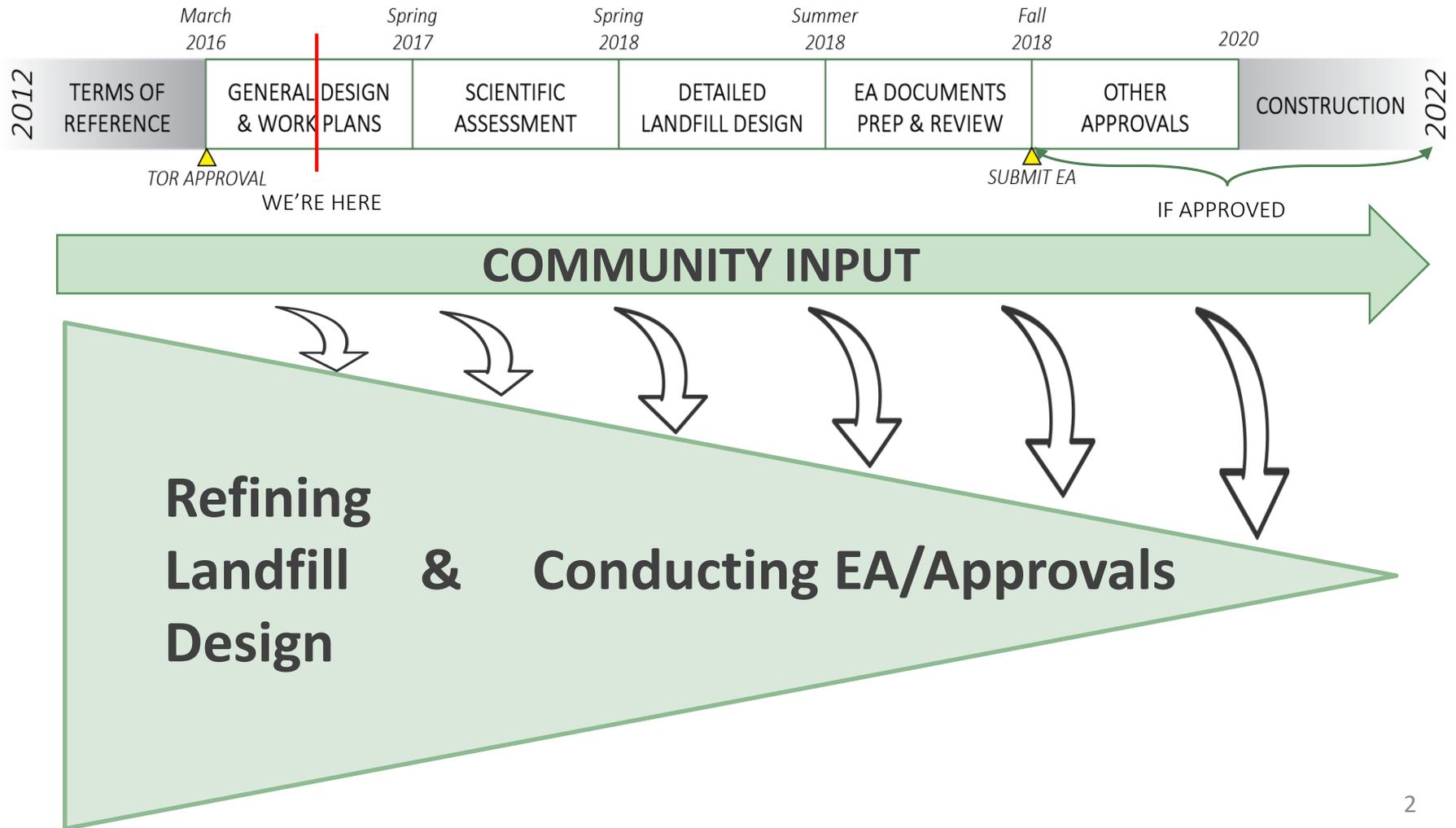
Walker Environmental/Carmeuse Meeting
Presentation Package
October 6th, 2016

SOUTHWESTERN LANDFILL (SWLF) ENVIRONMENTAL ASSESSMENT (EA)

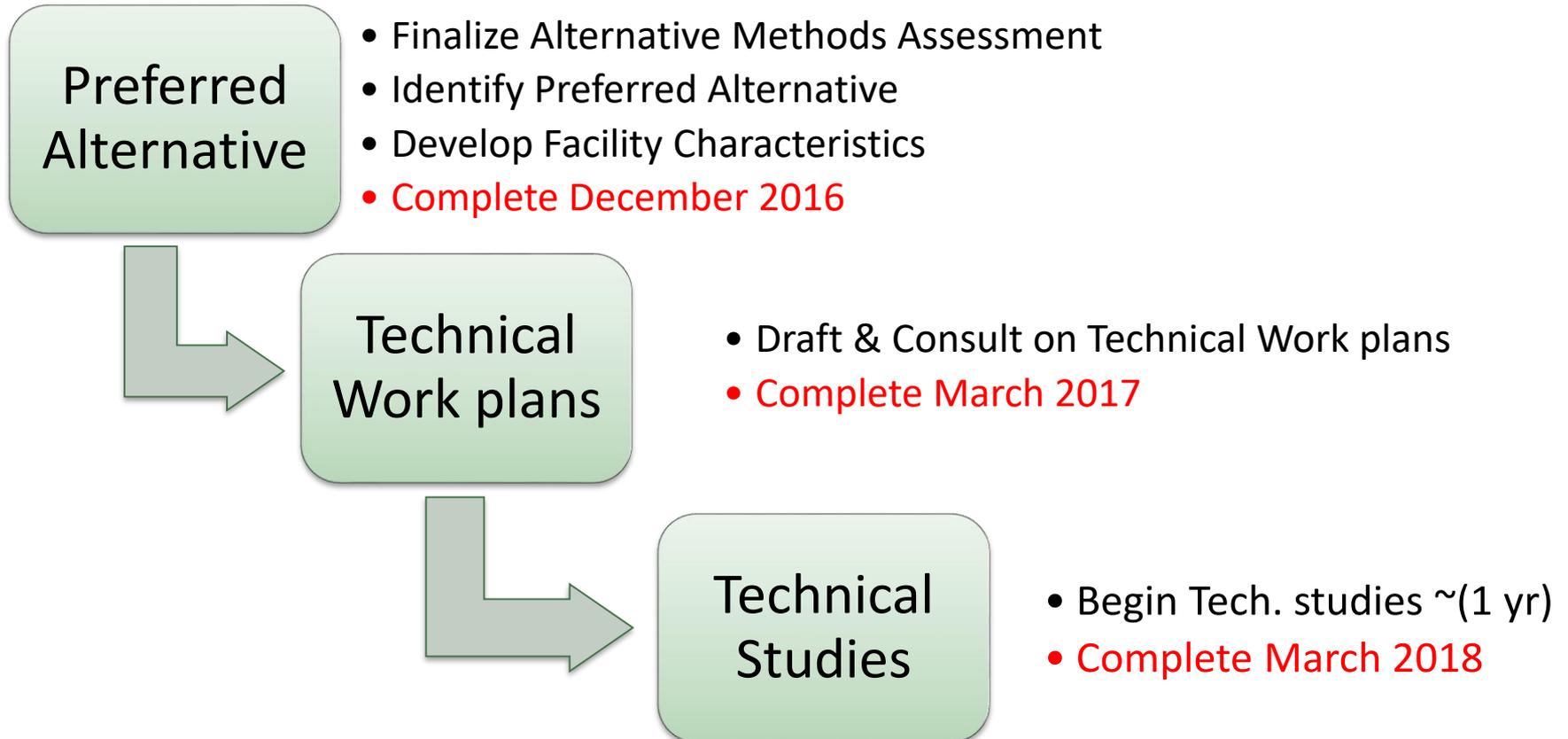
SWLF Timeline Update



Southwestern Landfill EA



Next 9 Months – Key Milestones



Community Engagement

Preparing the EA

Reconnecting by talking to residents, businesses and organizations

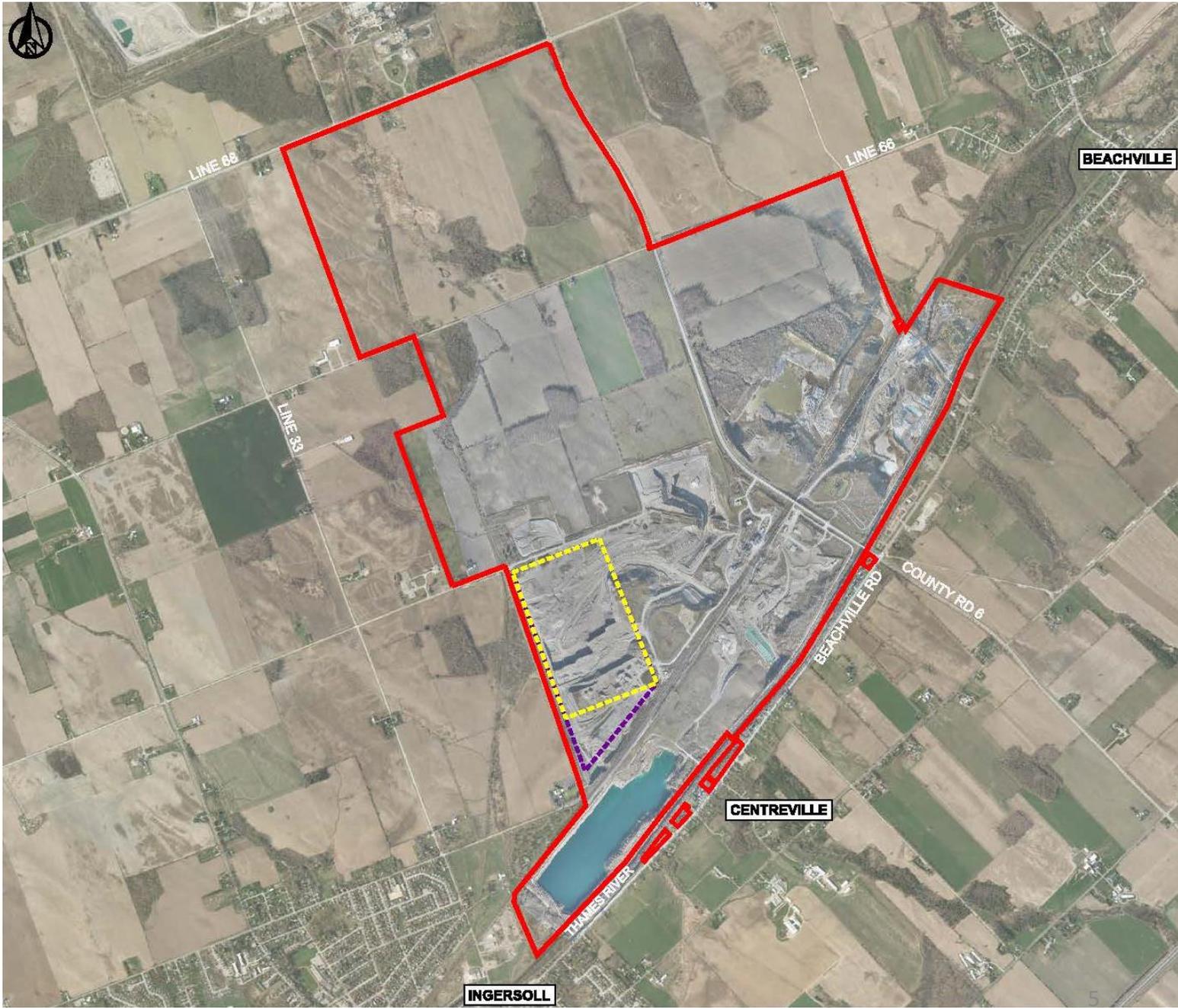
Communicating via updated website, mail outs, newsletter, meetings

Engaging local community, First Nations and interested parties

Consulting local community, CLC, near neighbours, First Nations and organizations

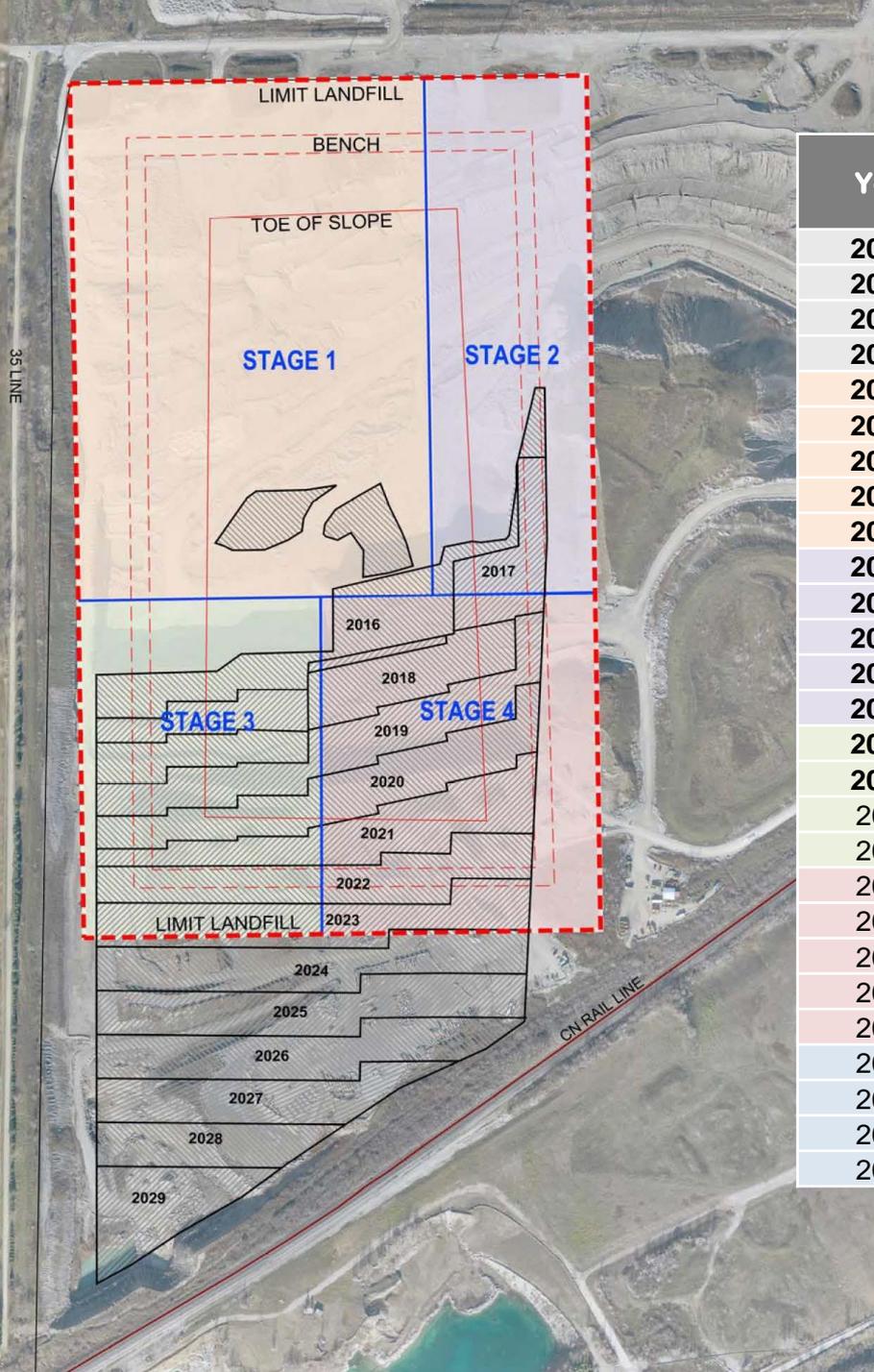
Footprints within Carmeuse Lands

Southwestern Landfill EA



Landfill & Mining Timing

Southwestern Landfill EA

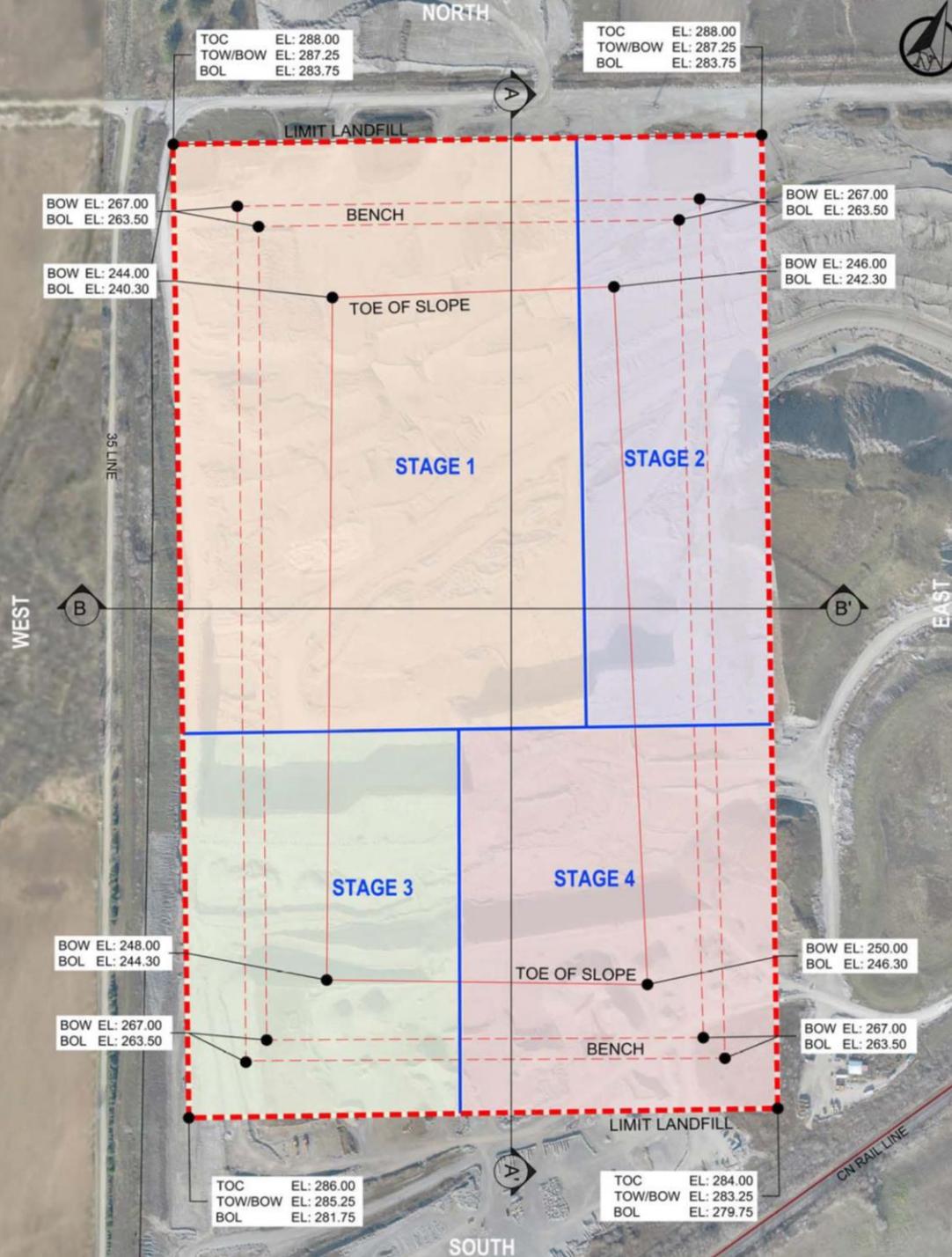


Year	Landfill OVB Works	LF Line Construction
2015*	No Landfill	-
2016*		-
2017*		-
2018*		-
2019*	Stage 1	-
2020*		-
2021*		Cell 1
2022*		Cell 2
2023*	Stage 2	Cell 3
2024*		Cell 4
2025*		Cell 5
2026*		Cell 6
2027*	Stage 3	Cell 7
2028*		Cell 8
2029*		Cell 9
2030*		Cell 10
2031	Stage 4	Cell 11
2032		Cell 12
2033		Cell 13
2034		Cell 14
2035		Cell 15
2036		Cell 16
2037		Cell 17
2038	Stage 5	Cell 18
2039		Cell 19
2040		Cell 20
2041		Cell 21

#*Carmeuse to be mining in SW Pit

Landfill Design Plan View

Southwestern Landfill EA



2019*	Stage 1
2020*	
2021*	
2022*	
2023*	Stage 2
2024*	
2025*	
2026*	
2027*	Stage 3
2028*	
2029*	
2030*	
2031	Stage 4
2032	
2033	
2034	
2035	
2036	
2037	
2038	Stage 5
2039	
2040	
2041	

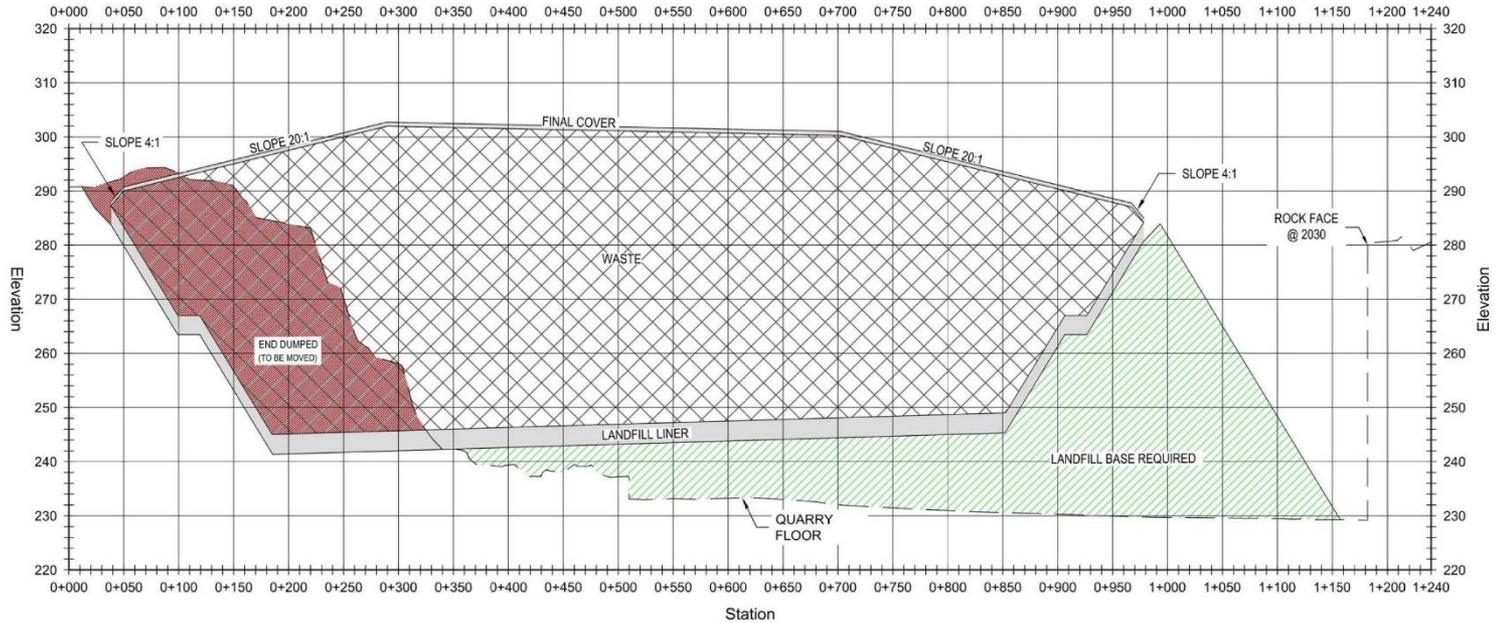
##*Carmeuse mining in SW Pit

DEFINITIONS:

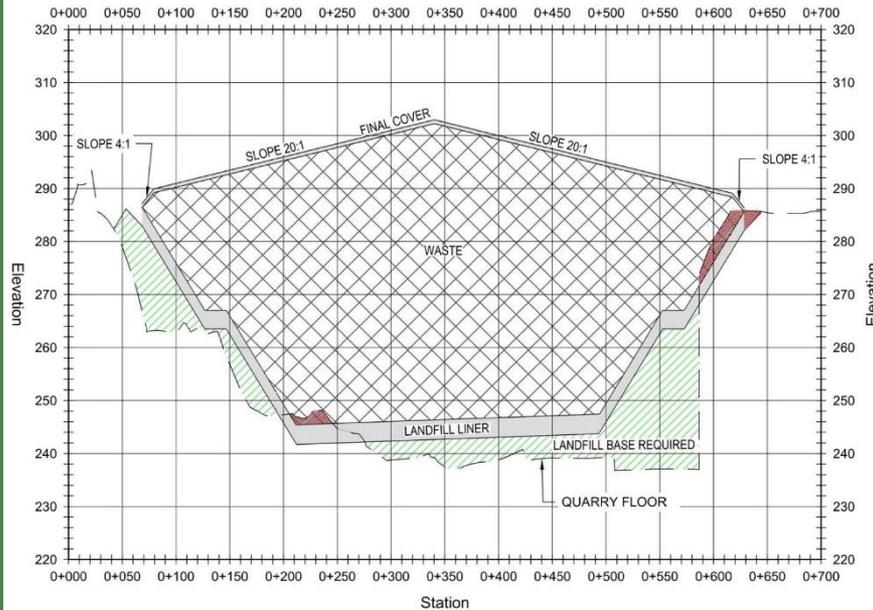
TOC	TOP OF COVER
TOW	TOP OF WASTE
BOW	BOTTOM OF WASTE
BOL	BOTTOM OF LINER

Landfill Design Sections & Specifications

Southwestern Landfill EA



Section B-B'



Design Specifications

- Depth of Landfill is 40 m from existing ground at North West corner of site
- BOL is at EL: 240.30 m low & 250.30 m high
- 3:1 side slopes
- Average depth of 33.26 m
- Waste capacity of 17,500,000 m³
- Landfill base net fill required approx. 5,865,126 m³
- TOW is at 2.5m @ 4:1 slope and remaining @ 1:20 with Final high point EL: 302.61 m
- TOC Final high point EL: 303.61 m
- Landfill has a 20 m bench at EL 267.00 m
- Final cover to be 1m thick
- Landfill base sloped @ 0.5% to NW Corner
- Possible Attenuation depths
 - Min 1.3 m
 - Max 15.3 m
 - Avg 8.3 m

Landfill & Mining Overburden Overview

Southwestern Landfill EA

Year	OVB movement location	Carmeuse Stripped (m ³) A	Stripping Attributed to WEG OVB (m ³) B	Stripping Running Total (m ³) C = A + YEAR ABOVE	Landfill OVB required (m ³)			OVB Balance (m ³) F = Year Above + B - D	
					D.1 (Cut)	D.2 (Fill)	D (Net)		
2015	-4	517,000	295,748	295,748				295,748	
2016	-3	300,000	250,000	545,748				545,748	
2017	-2	300,000	250,000	795,748				795,748	
2018	-1	300,000	290,000	1,085,748				1,085,748	
2019	Year 1	300,000	290,000	1,375,748	3,192,929	60,425	3,132,504	4,508,252	Stage 1
2020	Year 2	300,000	290,000	1,665,748	-	-	-	4,798,252	
2021	Year 3	300,000	290,000	1,955,748	2,856	916,442	(913,586)	4,174,666	
2022	Year 4	300,000	290,000	2,245,748	22,009	38,346	(16,338)	4,448,328	
2023	Year 5	300,000	290,000	2,535,748	900	344,589	(343,689)	4,394,640	
2024	Year 6	300,000	290,000	2,825,748	81,899	296,903	(215,004)	4,469,636	Stage 2
2025	Year 7	300,000	290,000	3,115,748	81,899	296,903	(215,004)	4,544,632	
2026	Year 8	300,000	290,000	3,405,748	81,899	296,903	(215,004)	4,619,628	
2027	Year 9	300,000	290,000	3,695,748	81,899	296,903	(215,004)	4,694,624	
2028	Year 10	327,000	317,000	4,012,748	81,899	296,903	(215,004)	4,796,620	
2029	Year 11	305,074	295,074	4,307,822	5,245	1,141,214	(1,135,969)	3,955,725	Stage 3
2030	Year 12	525,990	515,990	4,823,812	5,245	1,141,214	(1,135,969)	3,335,746	
2031	Year 13	525,990	515,990	5,339,802	5,245	1,141,214	(1,135,969)	2,715,767	
2032	Year 14	525,990	515,990	5,855,792	5,245	1,141,214	(1,135,969)	2,095,788	
2033	Year 15	525,990	515,990	6,371,782	71,387	526,916	(455,529)	2,156,249	
2034	Year 16	525,990	515,990	6,887,772	71,387	526,916	(455,529)	2,216,710	Stage 4
2035	Year 17	525,990	515,990	7,403,762	71,387	526,916	(455,529)	2,277,171	
2036	Year 18	525,990	515,990	7,919,752	71,387	526,916	(455,529)	2,337,632	
2037	Year 19	525,990	515,990	8,435,742	71,387	526,916	(455,529)	2,398,093	
2038	Year 20	525,990	515,990	8,951,732	-	-	-	2,914,083	
2039	Year 21	525,990	515,990	9,467,722	-	-	-	3,430,073	Stage 5
Total		10,008,974	9,467,722	9,467,722	4,006,104	10,043,754	-6,037,649	3,430,073	

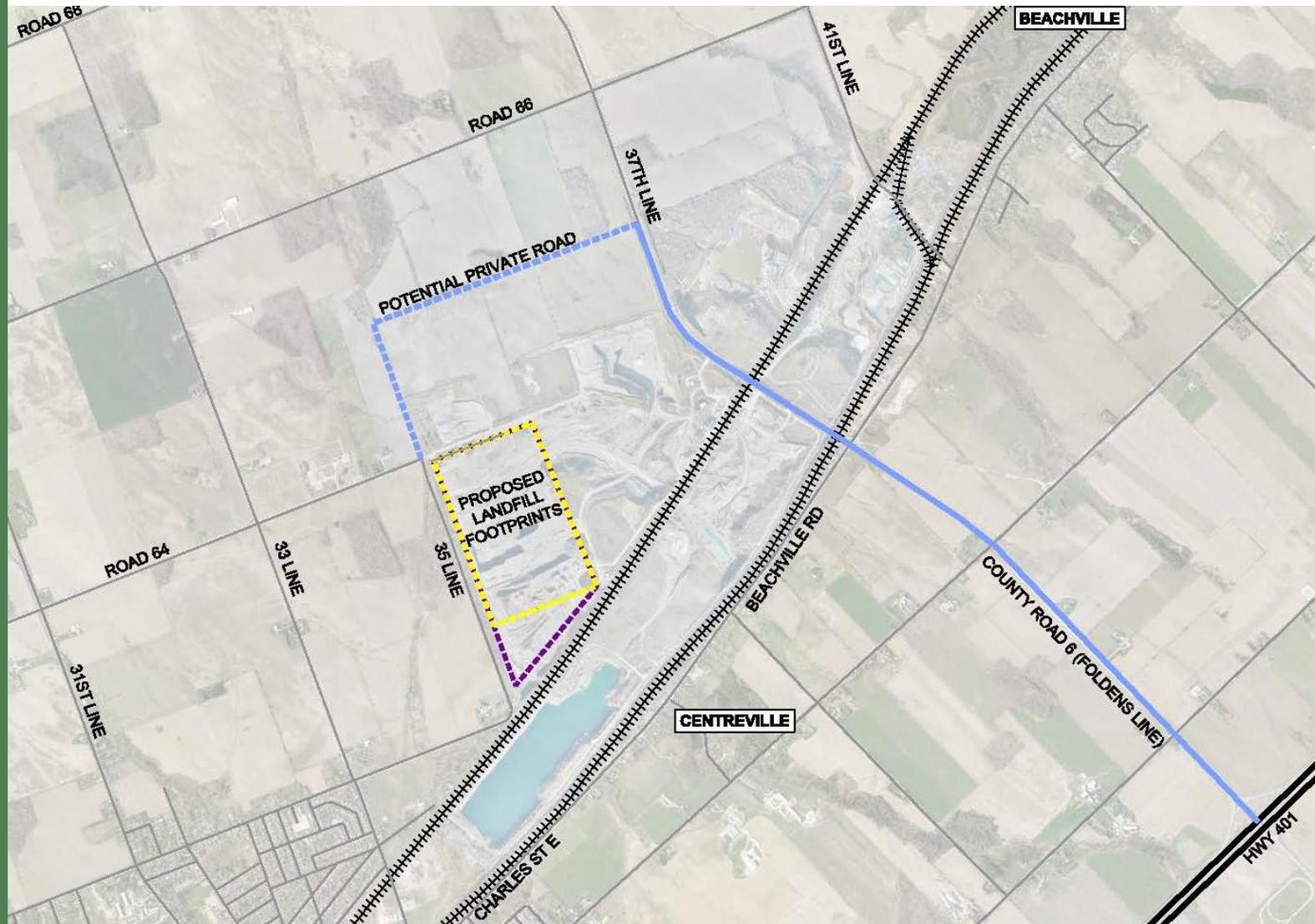
Infrastructure Pad & Design Concept

Southwestern Landfill EA



Potential Haul Route

Southwestern Landfill EA



Vol IV Appendix I-6 Public Presentations & Meetings

2017-04-06 Presentation to Oxford County Federation of Agriculture



Southwestern Landfill Environmental Assessment

Oxford County Federation of Agriculture

Date: April 6, 2017

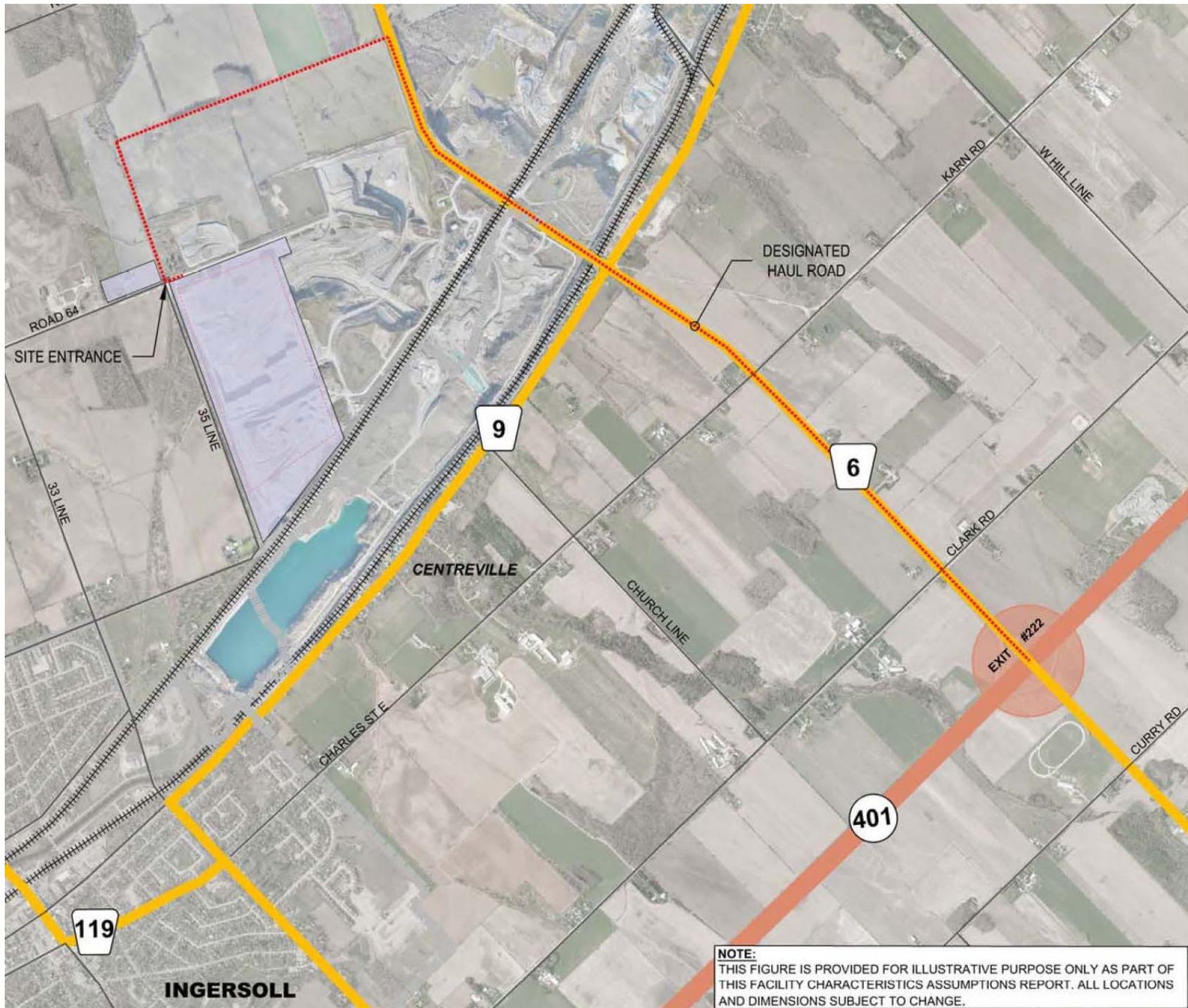
Landfill Lifecycle



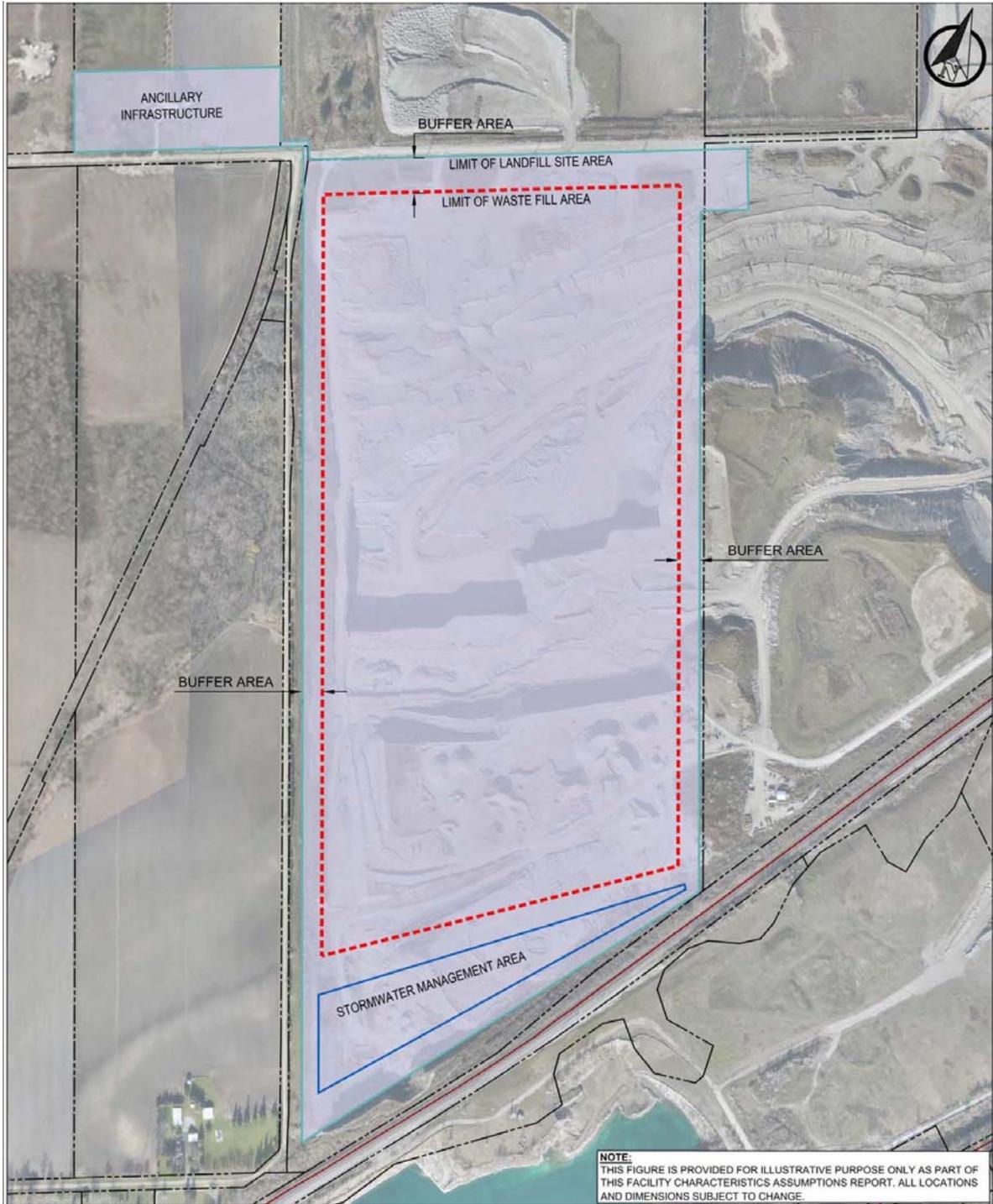
Southwestern Landfill EA

Five phases:

1. Planning (EA, other approvals)
2. Construction
3. Operations
4. Closing the Landfill
5. Repurposing the land (post-closure)



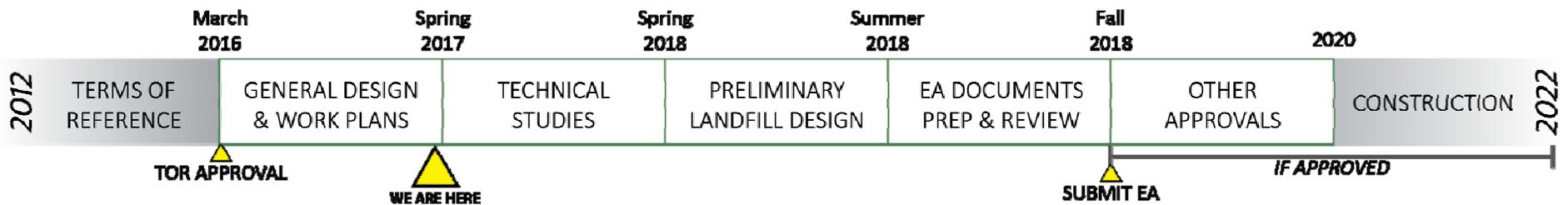
NOTE:
 THIS FIGURE IS PROVIDED FOR ILLUSTRATIVE PURPOSE ONLY AS PART OF
 THIS FACILITY CHARACTERISTICS ASSUMPTIONS REPORT. ALL LOCATIONS
 AND DIMENSIONS SUBJECT TO CHANGE.



EA Timeline



Southwestern Landfill EA



If approved, estimated timelines:

- Construction to start 2022
- Landfilling to begin 2023
- End landfill lifespan 2043 (20 years)

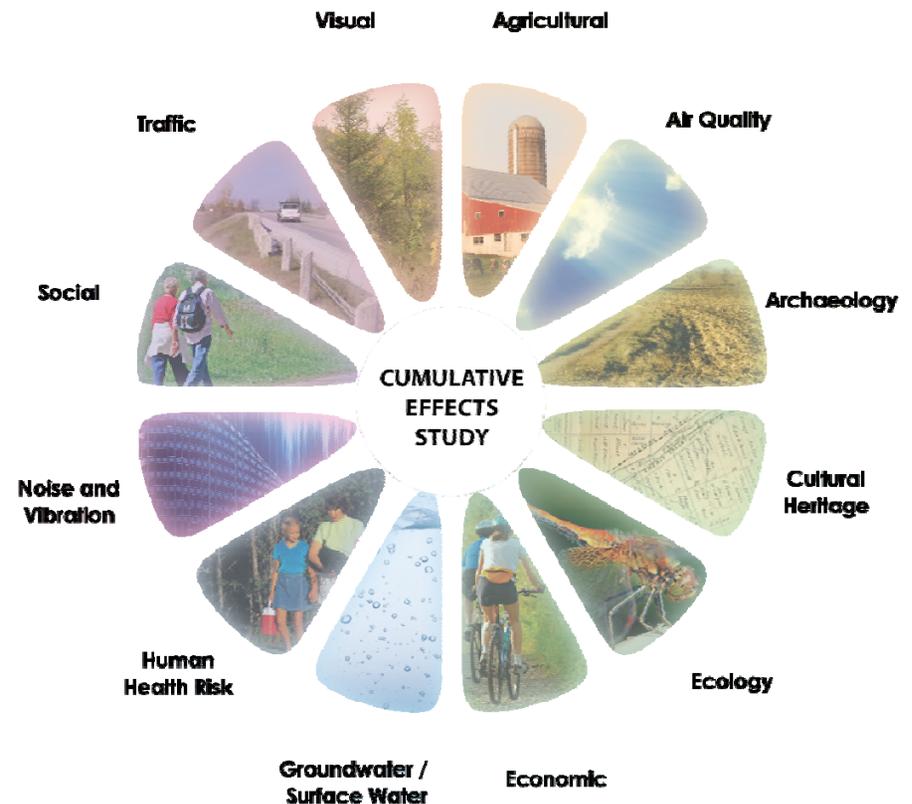
After a landfill is closed, the owner must care for the site (monitoring, water management/treatment, maintenance, any issues).

Finalization of Technical Work Plans



Southwestern Landfill EA

- Technical Work Plans guide the technical studies
- Studies carried out by consultants who are experts in each field
- Studies will take place from Spring/Summer 2017 to Spring 2018 (4 seasons)



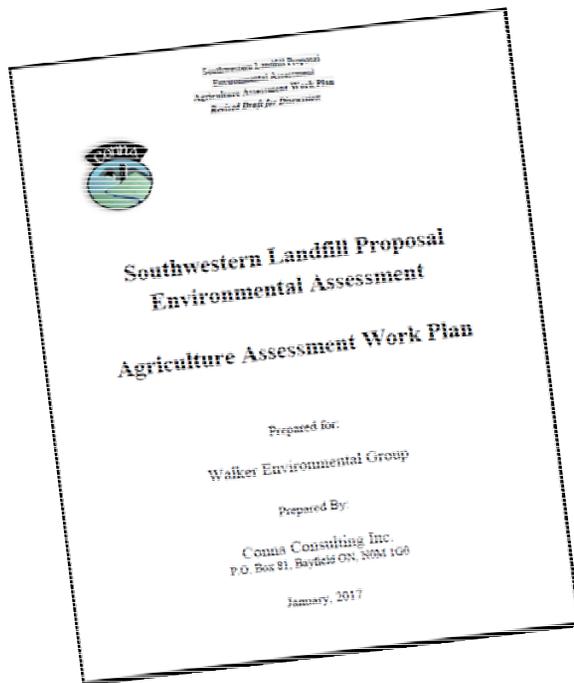
Summary of Agriculture Study



Southwestern Landfill EA

Agriculture study will assess:

- Change in agricultural land use
- Change in farm operations



For agricultural lands and farm properties adjacent and along the haul route as well as agricultural data from the broader area.

Summary of Agriculture Study



Southwestern Landfill EA

What to expect

- *Baseline conditions*: soil topography, soil capability, livestock production.
- *Field data collection*: to map agricultural and non-agricultural uses.
- *Liaison* with landowners and agriculture groups.
- *Evaluate*: nature, capacity and level of production agricultural resources, and any potential for changes or impacts.

Summary of Agriculture Study



Southwestern Landfill EA

Some key considerations:

- Flexible study area to adapt to findings
- Different types of crops, including specialty
- Farm land, facilities & operations
- Agri-business support services & facilities
- Potential economic impacts to farming

Summary of Agriculture Study



Southwestern Landfill EA

Some key considerations (continued):

- Flooding and climate change
- Agri-tourism and public purchasing on-farm
- Farm vehicles or delivery/service vehicles
- Potential for rehabilitation to agricultural land
- Combined effects (landfill & other sources)

Summary of Agriculture Study



Southwestern Landfill EA

What we've heard

- Concern for potential impacts on agricultural lands including flooding or drainage disruption.
- Concern for potential impacts on agricultural activities and production.

Public Event



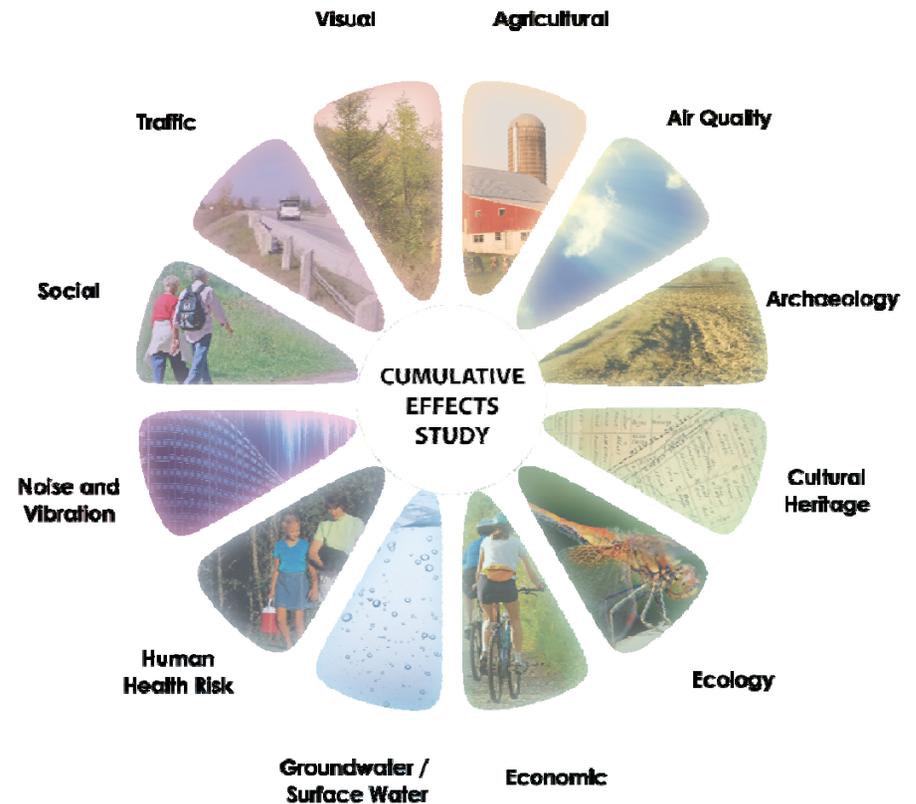
Southwestern Landfill EA

Finalization of Technical Work Plans

Wednesday April 19, 2017

11 am – 2 pm & 5 pm – 8 pm

Colombo Club
434719 West Hill Line,
Beachville, ON



Contact Us



Southwestern Landfill EA

Please feel free to contact us with
any questions or comments.

Stop by our Ingersoll office: 160 Carnegie St.

Call us 1-855-392-5537

Email us info@walkerea.com

Sign up on our website for regular updates
www.walkerea.com

Today's Presenter: Becky Oehler
Community Engagement Manager
boehler@walkerind.com • 905-680-3675

Questions & Input



Southwestern Landfill EA

Potential topics for discussion:

- The proposed landfill design
- Things you would like to make sure are studied
- Your concerns
- The agriculture work plan
- Other work plans
- The Environmental Assessment process
- How Walker prevents impacts at our landfills
- Upcoming public event

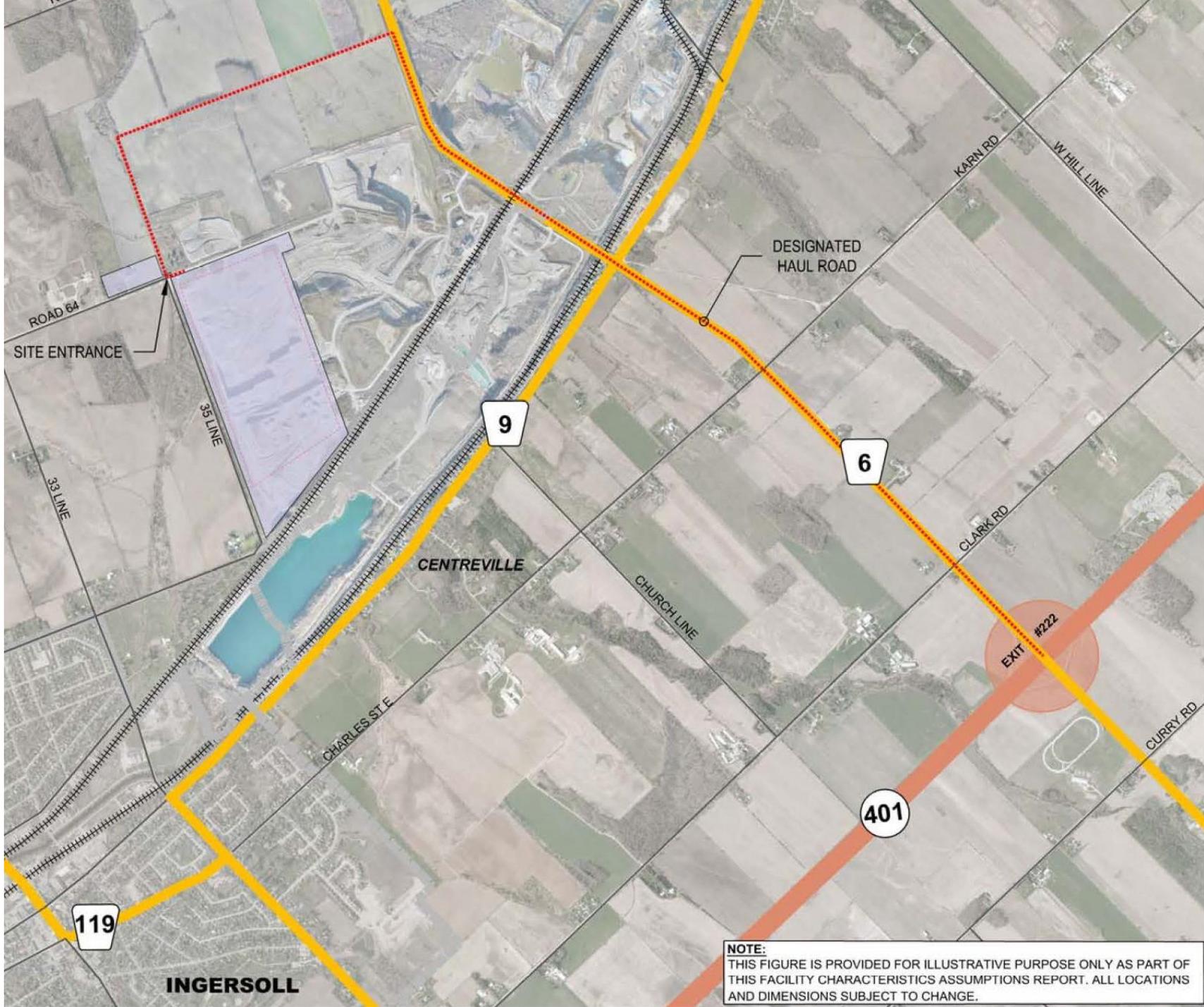
Vol IV Appendix I-6 Public Presentations & Meetings

2017-05-16 Presentation to Ingersoll Chamber of Commerce



Southwestern Landfill Environmental Assessment

Ingersoll Chamber of Commerce Meeting



ROAD 64
SITE ENTRANCE

35 LINE

33 LINE

9

CENTREVILLE

CHURCH LINE

6

CLARK RD

EXIT #222

401

CURRY RD

119

INGERSOLL

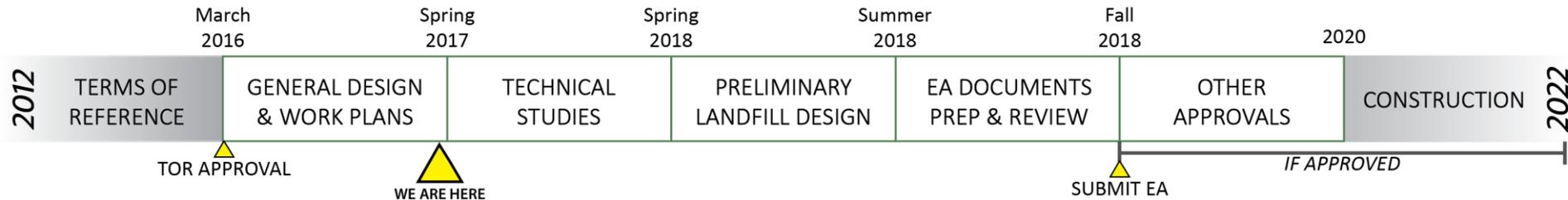
DESIGNATED
HAUL ROAD

KARN RD
W HILL LINE

NOTE:
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EA Timeline

Southwestern Landfill EA



If approved, estimated timelines:

- Construction to start 2020
- Landfill operations could commence 2023
- End landfill lifespan 2043 (20 years)

After a landfill is closed, the owner must care for the site (monitoring, water management/treatment, maintenance, any issues).

Finalization of Technical Work Plans

- Technical Work Plans guide the technical studies
- Studies carried out by consultants who are experts in each field
- Studies will take place from Spring/Summer 2017 to Spring 2018 (4 seasons)



Summary of Economic Study



Southwestern Landfill EA

Economic study will assess:

- Effects on businesses (income and land use)
- Effects on employment
- Public costs and liabilities
- Effects on municipal tax bases and finance
- Effects on the cost of service to customers
- Effects on the provincial and federal tax bases
- Property value effects
- Greenhouse gas emissions (cap & trade)

Summary of Economic Study



Southwestern Landfill EA

What to expect

- Baseline: Review of existing info like economic development reports, real estate records, and StatsCan data.
- Data Collection: Business inventory and interviews with property owners.
- Evaluate & Report: Predictions, estimates and forecasts of economic impacts.

Summary of Economic Study



Southwestern Landfill EA

Community Input To Date:

- Concerns regarding impacts to:
 - Property value (residential and business)
 - Business revenues
 - Attracting & retaining businesses (stigma)
 - Costs to municipalities (ie. road repair)
- Interest in:
 - Local job creation/economic development (direct & indirect)
 - Host community fees
 - Tax base

Reviews & Input on Work Plans



Southwestern Landfill EA

Updated Work Plans (current)

- JMCC Peer Review Team
- Ingersoll Peer Review Team
- Government Review Team
- First Nations group & individual meetings, as well as submitted input
- 5 Community Liaison Committee meetings
- Public Event (April 19, 2017)
- Comments received by mail/email/phone

Contact Us



Southwestern Landfill EA

Please feel free to contact us with
any questions or comments.

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Call us 1-855-392-5537

Email us info@walkerea.com

Sign up on our website for regular updates

www.walkerea.com

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Project Director – Southwestern Landfill
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