

2022

TOWN OF ST. MARYS

# Future Solid Waste Disposal Needs

Vol. I: Amended Environmental Assessment





**BURNSIDE**

**Town of St Marys Future Solid Waste  
Disposal Needs Amended  
Environmental Assessment**

**175 Queen Street East, P.O. Box 998  
St. Marys ON N4X 1B6 CANADA**

**R.J. Burnside & Associates Limited  
292 Speedvale Avenue West Unit 20  
Guelph ON N1H 1C4 CANADA**

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## Executive Summary

### ES1. Introduction

This Amended Environmental Assessment Report (EA Report) documents the investigations and evaluations carried out to identify a preferred approach and design to address the future solid waste disposal needs of the Town of St. Marys (herein referred to as the Town). This is an Individual Environmental Assessment (EA), completed under the *Environmental Assessment Act (EAA), 1990*. This EA has been prepared in accordance with the Terms of Reference (TOR) approved on December 29, 2014.

The Final EA was submitted on August 13, 2021. This document has been amended to address comments by the Government Review Team (GRT), raised during the review period following that submission. For details see Appendix F Comments with Respect to the August 2021 EA Submission.

GRT comments on the Final EA raised several concerns regarding preferred Alternative 3 particularly the proximity to, and the potential impacts of the Cement Kiln Dust (CKD) Pile on the relocated watercourse. To address these concerns, the Town re-engaged with St. Marys Cement (SMC) to discuss the watercourse relocation and how far onto SMC lands it might extend. SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their Aggregate Resources Act license. Reflecting on both the comments on the Final EA and the limitations with respect to SMC lands, the study team revisited the preferred Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to relocate the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a new preferred alternative, Alternative 3A.

The existing St. Marys landfill site (herein referred to as St. Marys Landfill); located at 1221 Water Street South, St. Marys, Ontario, operates under Environmental Compliance Approval (ECA) No. A150203 dated January 10, 2022, issued by the Ministry of the Environment, Conservation and Parks (MECP)<sup>1</sup>. It has an approved capacity<sup>2</sup> of 380,000 m<sup>3</sup> and receives post-diversion waste from within the Town. The St. Marys Landfill is located on a 37-ha property that was part of a former clay pit that was used by St. Marys Cement Co. (SMC) in cement manufacturing. Eight hectares (8 ha) of the 37-ha property are approved for landfilling. Site capacity (waste and daily cover) is

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<sup>1</sup> The Ministry of the Environment and Climate Change (MOECC) was renamed the Ministry of the Environment, Conservation and Parks (MECP) in 2018. In this document, MOECC is referenced as the author on materials published prior to 2018. MOECC is also referenced as the name of the ministry consulted throughout the TOR and much of the EA process. MOECC and MECP are considered synonymous.

<sup>2</sup> In accordance with 13.5 of the June 24, 2010 ECA approval. Non-inclusive of ECA approvals since.

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currently consumed at a rate of approximately 13,500 m<sup>3</sup>/year<sup>3</sup>. The site reached its approved capacity of 380,000 m<sup>3</sup> in January 2016. To maintain operations during preparation of this EA, the Town applied for and received ECA Notices (Amended ECA's are now issued in place of Notices) allowing continued use. The current Amended ECA allows operation through September 30, 2022. As required by the ECA, the Town will apply to the MECP for further operation by July 31, 2022.

The problem which will be addressed through this EA is as follows:

*The Town of St. Marys must identify a solution that addresses the Town's post-diversion municipal solid waste disposal needs over a 40-year planning period in a technically and economically feasible manner while minimizing impacts to the environment.*

It was calculated that the 40-year planning period would require 708,000 m<sup>3</sup> of waste and operational cover disposal capacity.

## **ES2. Environmental Assessment Process**

In Ontario, waste management projects are governed by O. Reg. 101/07, known as the Waste Management Projects Regulation. According to Part II of the regulation, any new landfill site with a capacity over 100,000 m<sup>3</sup> or any changes to an existing landfill site that result in additional volume over 100,000 m<sup>3</sup> is subject to Part II of the EAA, and, as such, is required to undergo an Individual EA.

The Terms of Reference (TOR) for the EA was approved on December 29, 2014 and outlines how the EA will be conducted.

The EA is being conducted in accordance with Section 6.1(3) of the EAA which allows for an EA with a narrow scope, commonly referred to as a "focused EA". The TOR outlined why this was deemed appropriate. In summary, the Town of St. Marys undertook some initial planning work prior to commencement of the EA. Work included a pre-screening of the Alternatives to the Undertaking.

The EA is scoped to focus on the Alternatives to the Undertaking which were remaining after the pre-screening exercise. These Alternatives include:

- Do Nothing (required by EA Act);
- Expansion of the Existing Landfill Site in St. Marys; and
- Exporting Waste to Another Jurisdiction.

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<sup>3</sup> This is the average rate of fill based on detailed site survey data from 2012 to 2018.

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### ES3. Alternatives to the Undertaking

The Alternatives to the Undertaking were:

- **Do Nothing:** As a requirement of the *EA Act*, the ‘Do Nothing’ must be considered. Doing Nothing represents the result of no action being taken to address the Problem Statement and serves as a baseline against which other Alternatives can be compared. The Do Nothing Alternative assumes that waste collection and disposal will continue using current practices as specified under the current ECA and then will cease in September 2022 when the ECA expires.
- **Alternative 1:** This Alternative involves the continued operation of the St. Marys Landfill by the Town following the design, approval and construction of expanded waste disposal areas within the existing 37 ha property.
- **Alternative 2:** This Alternative involves the closure of the St. Marys Landfill for waste disposal. The Bluewater Recycling Association (BRA) would continue to collect municipal waste through their current curbside waste collection program; however, the waste would be transported to another waste disposal site outside the jurisdiction of the Town of St. Marys. For the purposes of this assessment, it was assumed that waste would be taken directly, without using a transfer station, to the Twin Creeks Landfill in Watford, Ontario using existing BRA curbside collection vehicles.

### ES4. Evaluation of the Alternatives to the Undertaking

The evaluation of Alternatives to the Undertaking was carried out as a high-level, qualitative screening, based on information from existing data sources. The evaluation considered impacts under baseline conditions and the net effects of the “Do Nothing” Alternative. Alternatives 1 and 2 were then compared to the Do Nothing Alternative based on a qualitative assessment of net effects. These net effects are then ranked using the following descriptors:

- **Preferred** – preferred over the Do Nothing Alternative.
- **Somewhat preferred** – somewhat preferred over the Do Nothing Alternative.
- **Equally preferred** – equally preferred to the Do Nothing Alternative.
- **Somewhat less preferred** – somewhat less preferred than the Do Nothing Alternative.
- **Less preferred** – less preferred than the Do Nothing Alternative.

The evaluation of net effects relative to Doing Nothing is summarized in Table ES 1. The advantages and disadvantages of the proposed Undertaking and Alternative to the Undertaking are summarized in Table ES 2.

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**Table ES 1: Evaluation of Alternatives to the Undertaking**

Criteria	Comparison to the Do Nothing Alternative	
	Alternative 1: Expand the St. Marys Landfill	Alternative 2: Export Waste to the Twin Creeks Landfill
<b>Natural Environment</b>		
Potential Impacts to Atmosphere	Equally Preferred	Preferred
Potential Impacts to Geology and Hydrogeology	Equally Preferred	Equally Preferred
Potential Impacts to Surface Water	Equally Preferred	Equally Preferred
Potential Impacts to Biology	Somewhat Less Preferred	Preferred
<b>Cultural Environment</b>		
Potential Impacts to Archaeological Resources	Equally Preferred	Equally Preferred
Potential Impacts to Built Heritage	Equally Preferred	Equally Preferred
Potential Impacts to Cultural Heritage	Equally Preferred	Equally Preferred
<b>Socio-economic Environment</b>		
Potential Impacts to Transportation Routes	Equally Preferred	Less Preferred
Land Use	Preferred	Less Preferred
Employment Effects	Somewhat Preferred	Less Preferred
Economic Conditions	Equally Preferred	Less Preferred
Aesthetics/Enjoyment of Life	Equally Preferred	Preferred
<b>Indigenous Connections to the Land</b>		
Traditional and Historic Uses/Land Claims/ Indigenous and Treaty Rights	Equally Preferred	Equally Preferred
<b>Financial Factors</b>		
Capital and Operational Costs	Somewhat Less Preferred	Less Preferred
<b>Technical Factors</b>		
Technical Ability to Carry Out Each Alternative	Preferred	Somewhat Preferred
<b>Overall Preference</b>	<b>Preferred</b>	<b>Less Preferred</b>

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**Table ES 2: Summary of Advantages and Disadvantages**

<b>Do Nothing</b>	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
<b>Advantages</b>		
<ul style="list-style-type: none"> <li>• Does not have any effect on the natural, cultural, or social environment beyond baseline conditions.</li> <li>• Does not have a capital or operational cost.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimal transportation impacts.</li> <li>• Tipping fees are set and controlled by the Town.</li> <li>• Promotes local employment and economy.</li> <li>• Town maintains social and economic benefits of having disposal capacity for current and future residents and IC&amp;I sectors.</li> <li>• Makes efficient use of land that would otherwise have few alternative uses.</li> <li>• Provides a 40-year solution.</li> </ul>	<ul style="list-style-type: none"> <li>• Fewer greenhouse gas emissions over Alternative 1 as Twin Creeks has a landfill gas collection system but St. Marys does not.</li> <li>• Improves noise, dust, and odour concerns for residents adjacent to the St. Marys Landfill.</li> </ul>
<b>Disadvantages</b>		
<ul style="list-style-type: none"> <li>• Does not provide a solution to the Problem Statement.</li> </ul>	<ul style="list-style-type: none"> <li>• Results in a higher emissions potential as a result of the lack of LFG collection when compared to Twin Creeks.</li> <li>• Causes temporary impacts to natural features, including potential habitat for species at risk and aquatic habitat that will require restoration and compensation.</li> <li>• May effect Cultural Heritage Resources.</li> <li>• Requires more permits and approvals and engineering design.</li> </ul>	<ul style="list-style-type: none"> <li>• Does not provide a solution for the full 40-year planning period.</li> <li>• Costs may fluctuate over the planning period and Town does not control cost increases.</li> <li>• May result in the loss of a small number of jobs in St. Marys.</li> <li>• May negatively affect businesses in St. Marys that rely on lower cost waste transportation and disposal at the St. Marys Landfill.</li> <li>• Results in increased trucking emissions and traffic impacts on truck route.</li> </ul>

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### **ES5. Preferred Alternative to the Undertaking**

Based on the scoring and the advantages and disadvantages of each Alternative, it was determined that:

- Doing Nothing does not address the Town's waste management needs and obligations and is not a feasible solution to the Problem Statement.
- Exporting waste to the Twin Creeks Landfill has some advantages in that impacts to the Natural Environment at the St. Marys Landfill site are minimized.
- Expanding the St. Marys Landfill has greater advantages with respect to Socio-economic criteria, Financial Factors, and Technical criteria.
- Both options were equally preferred based on Cultural Heritage criteria.

As such, based on cumulative scoring, the alternative to expand the St. Marys Landfill was found to be preferred.

### **ES6. Alternative Methods for Expanding the Landfill**

This Section has been modified from the final EA document submitted in August 2021. Government Review Team (GRT) comments on the August 2021 EA raised several concerns regarding Alternative 3 particularly the proximity to, and the potential effects of, the Cement Kiln Dust (CKD) Pile on the relocated watercourse. In an effort to address these concerns the Town re-engaged with St Mary's Cement (SMC) to discuss the watercourse realignment and how far onto SMC lands it might extend. As a result of those discussions, SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their *Aggregate Resources Act* license. Therefore, the Town sought another solution.

Reflecting on both the comments on the August 2021 EA and the limitations with respect to SMC lands, the study team revisited Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to realign the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a refinement to the preferred alternative, Alternative 3A which has been added to the evaluation of alternatives.

Six conceptual Alternative Methods for expanding the landfill plus the Do Nothing Alternative were evaluated and all are described in Table ES 3.



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**Table ES 3: Summary of Alternative Methods**

Alternative Methods		Description
	Do Nothing	As a requirement of the EA Act, the 'Do Nothing' Alternative must be considered. Do Nothing represents the result of no action being taken to address the Problem Statement and serves as a baseline against which other Alternatives can be compared.
1	Vertical expansion of the existing landfill	This Alternative involves an expansion in the vertical direction within the existing footprint of the landfill.
2	Horizontal expansion of the existing landfill	This Alternative involves an expansion outside of the existing landfill footprint. The watercourse running through the property would be relocated to the northern boundary of the property.
3	A combination of vertical and horizontal expansion	This Alternative would involve partial vertical expansion along with some horizontal expansion of the landfill footprint. The watercourse running through the property would be relocated to the northern boundary of the property.
3A	A combination of vertical and horizontal expansion (with watercourse realignment)	In response to concerns raised with respect to the proximity of the relocated watercourse to the CKD pile for Alternatives 2 and 3, a refinement to Alternative 3, Alternative 3A, was identified. Alternative 3A is similar to Alternative 3, including both vertical and horizontal expansion. However, rather than relocating the watercourse entirely, a short section (approximately 230m in length) will be realigned slightly to the northeast of its current position.
4	Development of a new landfill footprint	This Alternative involves closure of the existing 8 ha footprint and development of a new landfill footprint elsewhere on the 37 ha Site.
5	Vertical expansion plus a new footprint	This Alternative Method would involve partial vertical expansion along with development of a new landfill footprint elsewhere on the landfill property.

Although each Alternative is technically feasible, Alternatives 1 and 4 do not provide sufficient volume to address the Town's landfill capacity needs. To meet the Town's waste disposal needs for the next 40 years, 708,000 m<sup>3</sup> of landfill capacity is required. Alternatives 1 and 4 provide only 500,000 m<sup>3</sup> and 397,000 m<sup>3</sup>, respectively. Therefore, Alternatives 1 and 4 were discarded as feasible Alternatives as they do not fully address the Problem Statement.

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### **ES7. Evaluation of Alternative Methods for Expanding the Landfill**

The evaluation of Alternatives was carried out in several steps, as follows:

- The effects for each alternative were identified based on a set of indicators. It was assumed that standard landfill mitigation, design and operational measures would be implemented. Only effects remaining after standard mitigation is applied were identified.
- Any additional mitigation measures specific to each Alternative were identified.
- Finally, any net effects remaining after the additional mitigation is applied were identified. The magnitude, duration, frequency, and reversibility of any net effects was also identified to better characterize the net effects.

The net effects of each alternative were then ranked as follows for each environmental component:

- Most Preferred
- 2<sup>nd</sup> Most Preferred
- 3<sup>rd</sup> Most Preferred
- 4<sup>th</sup> Most Preferred
- Least Preferred

The Preferred Alternative overall is the Alternative that is most preferred for most criteria and is identified based on reasoned trade-offs between the alternatives. A summary of the evaluation is provided in Table ES 4

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**Table ES 4: Evaluation of Alternative Methods**

<b>Environmental Component</b>	<b>Do Nothing</b>	<b>Alternative 2: Horizontal Expansion of the Existing Landfill</b>	<b>Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location</b>	<b>Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment</b>	<b>Alternative 5: Vertical Expansion plus a New Footprint</b>
<b>Natural Environment</b>					
Air Quality	Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred
Odour	Most Preferred	4 <sup>th</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred
Noise	Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred
Groundwater	Most Preferred	3 <sup>rd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	Least Preferred
Surface Water Quality	Most Preferred	Least Preferred	Least Preferred	2 <sup>nd</sup> Most Preferred	Least Preferred
Surface Water Quantity	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
Terrestrial Ecology	Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	Most Preferred	2 <sup>nd</sup> Most Preferred
Aquatic Ecology	Most Preferred	Least Preferred	Least Preferred	2 <sup>nd</sup> Most Preferred	Least Preferred
<b>Cultural Environment</b>					
Built Heritage Resources and Cultural Heritage Landscapes	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
Archaeological Resources	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
<b>Impacts to Traffic</b>					
Traffic	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
<b>Impacts to Land Use</b>					
Sensitive Land Uses	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
Aggregate Resources	Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	Most Preferred	Most Preferred
<b>Impacts to Socio-economic Conditions</b>					
Financial Factors	Most Preferred	3 <sup>rd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	4 <sup>th</sup> Most Preferred
Social Impacts	Most Preferred	4 <sup>th</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred
<b>Impacts to Indigenous Communities</b>					
Cultural and Environmental Features	Most Preferred	Least Preferred	Least Preferred	2 <sup>nd</sup> Most Preferred	Least Preferred
<b>Overall Preference</b>	<b>Does not address Problem Statement</b>	<b>4<sup>th</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>Most Preferred</b>	<b>3<sup>rd</sup> Most Preferred</b>

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## **ES8. Preferred Undertaking**

Based on the scoring of each Alternative, it was determined that:

- Doing Nothing does not address the Town's waste management needs and obligations and is not a feasible solution to the Problem Statement.
- Alternative 3A is Most Preferred or 2<sup>nd</sup> Most Preferred for the greatest number of criteria.
- Alternative 3 is 2<sup>nd</sup> Most Preferred. It is similar to Alternative 3A but has additional effects associated with the watercourse relocation. In particular, the water quality in the watercourse may be affected by its proximity to the CKD pile.
- Alternative 5 is 3<sup>rd</sup> Most Preferred. Although the watercourse will remain as is, the entirely new footprint is costly and requires a significant amount of new infrastructure. Risks to ground and surface water quality are high due to potential interactions with the CKD pile.
- Alternative 2 is 4<sup>th</sup> Most Preferred as it has the largest footprint and therefore the greatest quantity of new infrastructure and highest cost. It has effects associated with the watercourse relocation. In particular, the water quality in the watercourse may be affected by its proximity to the CKD pile.

It was determined that Alternative 3A, expanding the St. Marys Landfill both vertically and horizontally with a watercourse realignment, is preferred.

## **ES9. Potential Impacts, Mitigation Measures and Net Effects**

Construction, operation and closure of the landfill expansion are anticipated to affect the natural, cultural, social and built environments. With the standard operating procedures and additional mitigation identified through the evaluation of Alternative Methods, most of the effects of the landfill expansion can be mitigated and minimized such that no net effects are expected. However, the following net effects may occur:

- Minor increase in air emissions and dust, within provincial limits;
- Minor increase in odour, only slightly higher than existing conditions;
- Minor increase in noise experienced at some nearby sensitive receptors and a decrease in noise at others, all within provincial limits;
- Minor increase in the risk of groundwater contamination;
- Minor increase in the risk of surface water contamination;
- Minor risk of disruption to aquatic habitat, associated with watercourse realignment and the increased risk of surface water contamination;

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- Minor increase in effects to enjoyment of life and private property for residences along Water St. S. This increase is associated with potential air quality, odour and noise effects; and,
- Minor risk of affecting the Thames River which is a feature with cultural or environmental significance to Indigenous communities. Effects are associated with the increased risk of surface water contamination.

The landfill expansion is not expected to cause net effects with respect to surface water quantity, terrestrial ecology, built heritage resources and cultural heritage landscapes, archaeological resources, local transportation, or aggregate resources. These environmental components are not expected to change over baseline conditions.

Cumulative effects were also considered. Environmental effects from specific projects do not occur in isolation: other projects and activities in an area may have effects that can combine to create a larger, more consequential effect, or cumulative effect, on those same environments. The adjacent aggregate extraction, agricultural operations and traffic on Water St. S. result in some effects to local air quality, odour, noise and ground and surface water quality. When combined with the effects of the landfill, a minor increase in the magnitude of the effects can be expected. Standard operating procedures and the additional mitigation identified through the evaluation of Alternative Methods are sufficient to address landfill effects and cumulative effects. No additional mitigation is required.

## **ES10. Consultation**

Consultation with the public, Indigenous communities, review agencies and organizations was ongoing throughout the EA process and included:

- Developing of a project contact list, including:
  - Various agencies with an approval or jurisdictional relevance to the project;
  - Various stakeholder groups and organizations with potential interest in the project;
  - Utilities with infrastructure in the vicinity; and,
  - Fifty-two landowners with property within 1km of the existing landfill site.
  - Fourteen Indigenous communities or organizations, including:
    - Caldwell First Nation;
    - Aamjiwnaang First Nation;
    - Chippewas of Kettle and Stony Point First Nation;
    - Chippewas of the Thames First Nation;
    - Delaware Nation (Moravian of the Thames);
    - Haudenosaunee Development Institute;
    - Mississaugas of the Credit First Nation;
    - Munsee-Delaware First Nation;

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- Oneida of the Thames First Nation;
  - Six Nations of the Grand River;
  - Walpole Island First Nation (Bkejwanong Territory);
  - Windsor-Essex Métis Council;
  - Métis Nation of Ontario; and,
  - Association of Iroquois and Allied Indians.
- Publishing Project Notices and mailing notices to those on the project contact list at the following project milestones:
    - Notice of Acceptance of the Terms of Reference and Commencement of the EA (February 9, 2015);
    - Notice of Public Information Centre (PIC) #1 (July 27, 2015);
    - Notice of PIC #2 (May 25, 2016);
    - Notice of first Draft EA for Inspection (July 5, 2017);
    - Notice of revised Draft EA for Inspection (February 26, 2021); and
    - Notice of Submission of the EA (August 5, 2021).
  - Meeting with the Chippewas of the Thames First Nation and Haudenosaunee Development Institute.
  - Holding Public Information Center #1 on August 26, 2015 and Public Information Center #2 on June 23, 2016.
  - Circulating draft documents for review and comment. This included draft technical Work Plans and draft versions of the EA. Documents were sent to applicable government agencies and Indigenous communities and were posted on the Town's website for public review.

A summary of comments received is as follows:

- From the public, comments primarily focused on drinking water quality, traffic, odour and dust.
- From Indigenous communities, comments primarily focused on potential effects to water quality and the natural environment, particularly with respect to the Thames River.
- From agencies, comments primarily focused on the EA process, potential effects associated with the CKD pile, consultation with Indigenous communities, mitigation, and monitoring.

Each comment was addressed through the EA process and played a role in the technical studies undertaken, the evaluation process, identification of environmental effects and future commitments made.

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## **ES11. Commitments and Monitoring**

### **ES11.1. Commitments**

A variety of commitments were made throughout the EA with respect to the detailed design, construction, operation and closure of the St Marys Landfill expansion. Some of the commitments will be carried out by the Town, while others will be the responsibility of various engineering and construction contractors. Any contractor responsibilities will be clearly specified in bid and tender documents to ensure they are carried out. The Town will ultimately be responsible for ensuring that contractors complete all required commitments.

The Town will submit an annual Compliance Monitoring Report to MECP to document how the commitments are being carried out until all of the commitments have been fulfilled.

### **ES11.2. Environmental Effects Monitoring**

Effects monitoring refers to monitoring used to ensure that the magnitude, frequency, and duration of the effects of the construction, operation and closure of the landfill are as expected. Effects monitoring is carried out through the landfill's updated Annual Monitoring Program. This program specifically targets monitoring effects to groundwater and surface water quality due to landfill operations particularly the risk of leachate migration off-site. Monitoring is carried out through water sampling at a number of monitoring wells and stations that have been, or will be, established at the landfill site and surrounding lands.

The updated monitoring program will be carried out for the full operational period of the landfill and will continue into the post-closure period. For the purposes of this EA, the post-closure period is assumed to be 50 years but the actual length will depend on leachate contaminant levels. Effects monitoring will be documented in the landfill's Annual Monitoring Reports, submitted to MECP as a requirement under the landfill's ECA.

### **ES11.3. Adaptive Management Plan**

To ensure the landfill expansion and realignment of the watercourse function as anticipated, an approach to ongoing management is required to identify and assess the need for changes to the project to minimize unanticipated effects. An Adaptive Management Plan will be in place to address unanticipated effects that may arise. The Adaptive Management Plan identifies triggers and responses. Subject to the type of trigger and magnitude of the effect, responses may include additional monitoring, pumping of excess leachate to the Town's wastewater treatment plant, installation measures to separate the cement kiln dust pile from the watercourse and/or initiating a landfill gas monitoring program. Each response will be developed under the guidance of the MECP.

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## **List of Volumes and Appendices**

### **Volume I – Environmental Assessment Report**

- Appendix A – Waste Reduction and Diversion Assessment
- Appendix B – Survey of Landfill Operators
- Appendix C – CKD Stockpile Report
- Appendix D – Supplementary Information in Support of Alternative 3A
- Appendix E – Approved Terms of Reference
- Appendix F – Comments with Respect to the August 2021 EA Submission

### **Volume II – Work Plans**

- Appendix A – Air Quality, Noise and Vibration
- Appendix B – Hydrogeological
- Appendix C – Ecological
- Appendix D – Archaeological and Cultural Heritage
- Appendix E – Socio-Ecological

*(Note: Work Plans were provided as draft reports only. Comments provided by agencies, Indigenous communities and the public were directly incorporated into the implementation as described in Volume I, Section 10.0, Consultation Summary)*

### **Volume III – Technical Reports**

- Appendix A – ESDM Report
- Appendix B – Noise Impact Assessment
- Appendix C – Hydrogeology Study
- Appendix D – Natural Heritage Assessment
- Appendix E – Cultural Heritage Resource Assessment
- Appendix F – Stage 1 Archaeological Assessment
- Appendix G – Socio-Economic Impact Assessment
- Appendix H – Traffic Impact Study
- Appendix I – Leachate Treatment and Disposal Report

### **Volume IV – Record of Consultation**

- Appendix A – Notice of Approval of the TOR and Commencement of the EA
- Appendix B – Public Information Centre #1
- Appendix C – Public Information Centre #2
- Appendix D – Consultation with Federal Agencies
- Appendix E – Consultation with Provincial Agencies
- Appendix F – Consultation with Municipal Authorities
- Appendix G – Consultation with the Conservation Authority
- Appendix H – Consultation with Indigenous Communities
- Appendix I – Consultation with Utilities/Services
- Appendix J – Consultation with Landowners/Interested Stakeholders
- Appendix K – Consultation Summary Table

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## 1.0 Introduction

This Environmental Assessment (EA) Report has been prepared in accordance with the Terms of Reference (TOR) approved on December 29, 2014. It documents the EA process undertaken to review options for addressing the future solid waste disposal needs of the Town of St. Marys (herein referred to as the Town), located in southwestern Ontario, as shown on Figure 1-1.

The Final EA was submitted on August 13, 2021. This document has been amended to address comments by the Government Review Team (GRT), raised during the review period following that submission. For details see Appendix F Comments with Respect to the August 2021 EA Submission.

GRT comments on the Final EA raised several concerns regarding preferred Alternative 3 particularly the proximity to, and the potential impacts of the Cement Kiln Dust (CKD) Pile on the relocated watercourse. To address these concerns, the Town re-engaged with St. Marys Cement (SMC) to discuss the watercourse relocation and how far onto SMC lands it might extend. SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their Aggregate Resources Act license. Reflecting on both the comments on the Final EA and the limitations with respect to SMC lands, the study team revisited the preferred Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to relocate the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a new preferred alternative, Alternative 3A.

The existing St. Marys landfill site (herein referred to as St. Marys Landfill); located at 1221 Water Street South, St. Marys, Ontario, operates under Environmental Compliance Approval (ECA) No. A150203 dated January 10, 2022, issued by the Ministry of the Environment, Conservation and Parks (MECP)<sup>4</sup>. It has an approved capacity<sup>5</sup> of 380,000 m<sup>3</sup> and receives post-diversion waste from within the Town. The St. Marys Landfill is located on a 37 ha property that was part of a former clay pit that was used by St. Marys Cement Co. (SMC) in cement manufacturing. Eight hectares (8 ha) of the 37 ha property are approved for landfilling. The location of the Town and the existing landfill are illustrated on Figure 1-2. Site capacity (waste and daily cover) is currently

---

<sup>4</sup> The Ministry of the Environment and Climate Change (MOECC) was renamed the Ministry of the Environment, Conservation and Parks (MECP) in 2018. In this document, MOECC is referenced as the author on materials published prior to 2018. MOECC is also referenced as the name of the ministry consulted throughout the TOR and much of the EA process. MOECC and MECP are considered synonymous.

<sup>5</sup> In accordance with 13.5 of the June 24, 2010 ECA approval. Non-inclusive of ECA approvals since.



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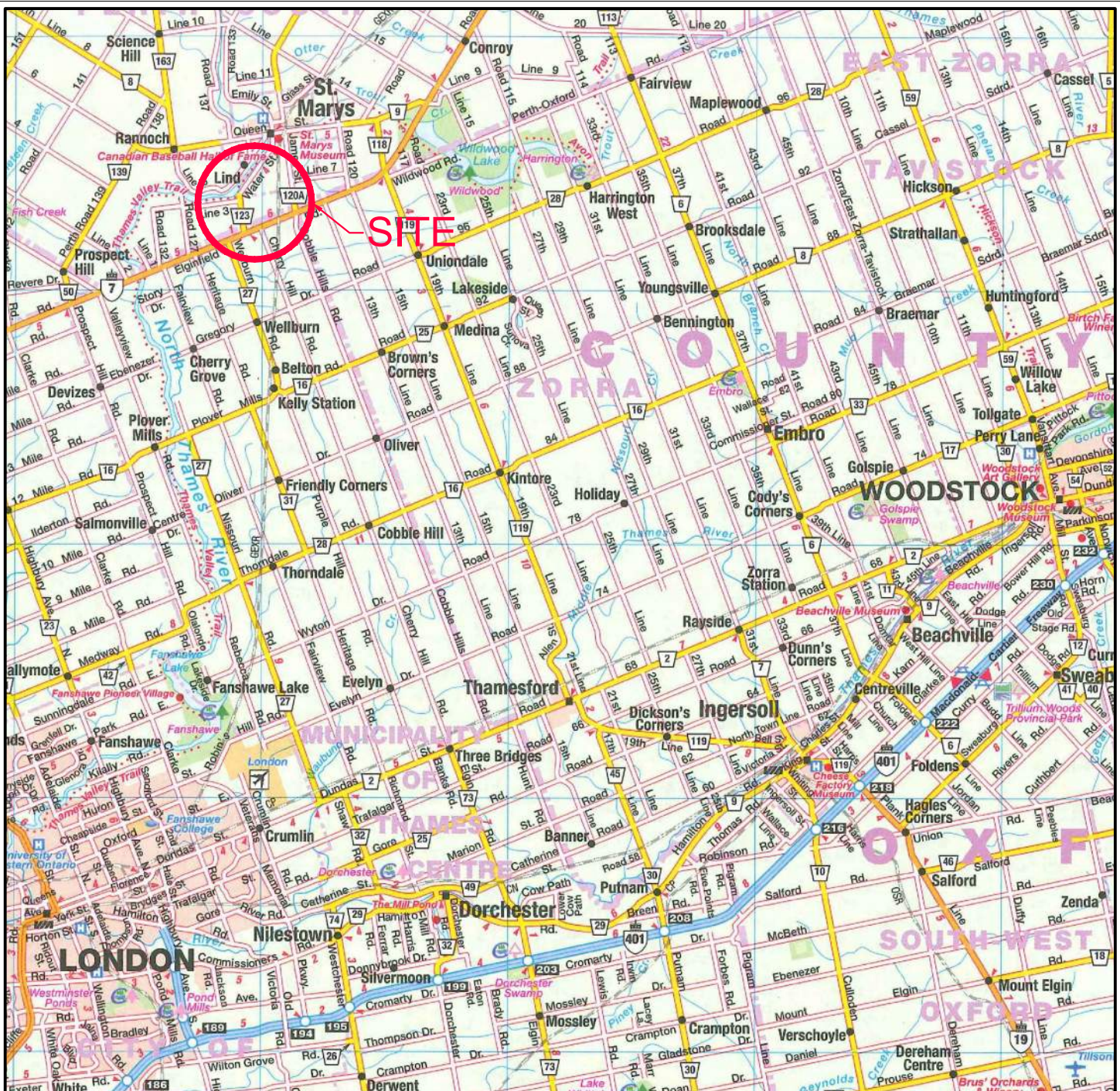
consumed at a rate of approximately 13,500 m<sup>3</sup>/year<sup>6</sup>. The site reached its approved capacity of 380,000 m<sup>3</sup> in January 2016. To maintain operations during preparation of this EA, the Town applied for and received ECA Notices (Amended ECA's are now issued in place of Notices) allowing continued use. The current Amended ECA allows operation through September 30, 2022. As required by the ECA, the Town will apply to the MECP for further operation by July 31, 2022.

For this EA process, measured waste tonnage generation, landfill volumetric survey results and industry standards and trends for waste density were used to determine long-term disposal needs. Long term disposal needs were defined as ensuring post-diversion municipal solid waste disposal capacity for the Town over a 40-year planning period commencing in 2017.

The decision-making process described in this EA Report meets the requirements of the Environmental Assessment Act and Ontario Regulation 101/07, the Waste Management Projects Regulation, made under the EA Act and will address the post diversion waste disposal needs and priorities of the Town over a 40-year planning period.

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<sup>6</sup> This is the average rate of fill based on detailed site survey data from 2012 to 2018 (see Table 3-4).



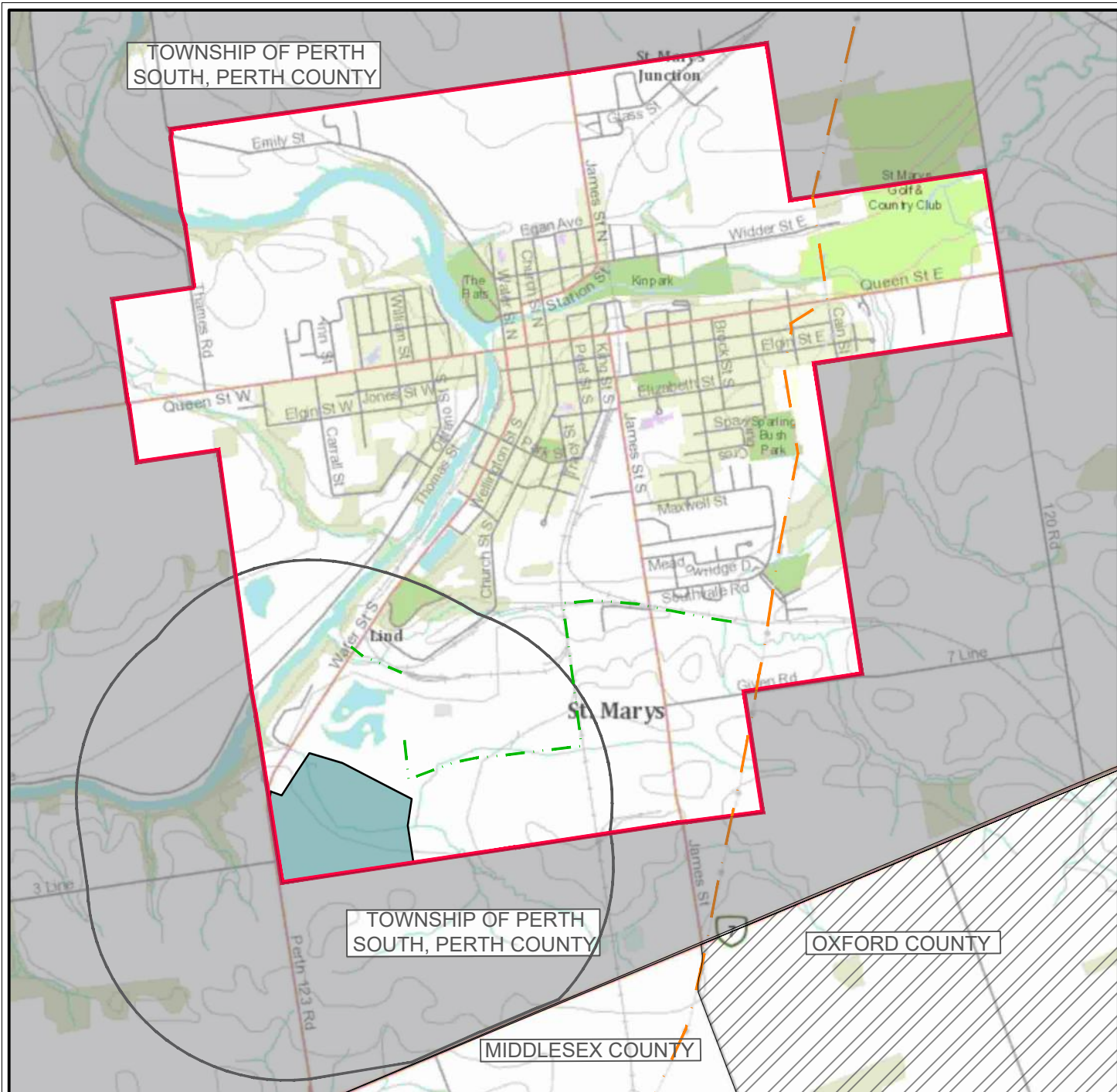
Map Reference: Map Art Publishing, Ontario Road Atlas



KEY MAP OF ONTARIO



Client			
<b>TOWN OF ST. MARYS</b>			
Figure Title			
<b>FUTURE SOLID WASTE DISPOSAL EA</b>			
SITE LOCATION			
Drawn	Checked	Date	Figure No.
SK	TR	JUNE 2022	<b>1-1</b>
Scale	Project No.		
N.T.S.	300032339		



**LEGEND:**

-  ST. MARYS LANDFILL
-  TOWN BOUNDARY
-  ELECTRICAL DISTRIBUTION LINES
-  ELECTRICAL TRANSMISSION LINES

Map Source:  
Background mapping obtained from  
arcgisonline base maps, Natural Resources  
Canada.



Client

**TOWN OF ST. MARYS**

Figure Title

**FUTURE SOLID WASTE DISPOSAL EA**  
**TOWN LIMITS AND ST MARYS LANDFILL**

Drawn  
SK

Checked  
TR

Date  
JUNE 2022

Project No.  
300032339

Figure No.

**1-2**

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This EA has been prepared in accordance with Sections 6(2)(a) and 6.1(3) of the *Environmental Assessment Act* as well as having regard for the following guidance documents:

- “Code of Practice – Preparing and Reviewing Environmental Assessments in Ontario” (MOECC, January 2014).
- “Code of Practice for Consultation in Ontario’s Environmental Assessment Process” (MOECC, January 2014).
- “Guide to Environmental Assessment Requirements for Waste Management Projects in Ontario” (MOECC, March 2007).

During preparation of this EA, the Town has consulted with the MECP, other federal and provincial government agencies, the public, Indigenous communities and other interested persons.

## **1.1 The Proponent**

The proponent of the EA is the Corporation of the Town of St. Marys, which currently and will continue to own and operate the St. Marys Landfill.

### **1.1.1 The Study Team**

The Study Team conducting this EA on behalf of the Proponent consists of R.J. Burnside & Associates Limited (Burnside) staff, specialist sub-consultants, and review personnel from the Town.

## **1.2 Technical Report Volumes and Appendices**

Due to the large number of documents prepared for this EA, documents have been organized into volumes and appendices, as follows:

- Volume I: EA Report
- Volume II: Work Plans <sup>7</sup>
- Volume III: Technical Reports
- Volume IV: Consultation Record

New appendices have been added to Volume I: EA Report since the final EA was submitted. Appendix D: Supplementary Information in Support of Alternative 3A provides additional information about a new Alternative that has been identified. Additional information is provided in Sections 7, 8, 9 and 11 of this EA report. Much of the new information in the Sections and new Appendix D is the result of a field study and updates to existing reports undertaken in response to reviewer concerns with potential water quality impacts of the Cement Kiln Dust

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<sup>7</sup> Work Plans were provided as draft reports only. Comments provided by agencies, Indigenous communities and the public were directly incorporated into the implementation as described in Section 10.0, Consultation Summary.

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(CKD) pile following the August 2021 submission of the Final EA. Appendix E is the approved Terms of Reference and Appendix F Comments With Respect to the August 2021 EA Submission.

Volume III includes technical reports prepared through the EA process. Each report and its location within Volume III is identified in Table 1-1.

**Table 1-1: Reports Prepared Through the EA Process**

<b>Report</b>	<b>Location in EA Appendices</b>
Landfill Expansion Emission Summary and Dispersion Modelling Report	Vol III Appendix A
Landfill Expansion Noise Impact Assessment	Vol III Appendix B
Hydrogeology Study	Vol III Appendix C
Natural Heritage Assessment	Vol III Appendix D
Cultural Heritage Resource Assessment*	Vol III Appendix E
Stage 1 Archaeological Assessment*	Vol III Appendix F
Socio-economic Impact Assessment	Vol III Appendix G
Traffic Impact Study	Vol III Appendix H
Leachate Treatment and Disposal Report	Vol III Appendix I
Record of Consultation	Vol IV

\*Prepared by Archaeological Services Inc. All other reports prepared by Burnside.

In addition, several existing reports created by others were used to help define existing conditions. These reports are not included in the EA documentation but include the following:

- “CKD Stockpile, St. Marys Plant site” (aka: “Cement Kiln Dust Report”, or simply “CKD Report”), prepared for St. Marys Cement by Golder & Associates Ltd., March 3, 2005.
- “County of Perth, Town of St. Marys and City of Stratford. 2010. Perth, St. Marys and Stratford Economic Development Strategy and Action Plan: 2010-2014”, Millier Dickinson Blais Inc., April 2010. <http://www.townofstmarys.com/en/town-services/resources/Documents/Perth-St-Marys-Stratford-Economic-Plan-Final.pdf> (Accessed November 2015).
- County of Perth Planning and Development Department, (2013) Perth County Official Plan. <http://www.perthcounty.ca/OfficialPlanSchedulesofDetailed Maps> (Accessed November 2015).
- “St. Marys Strategic Plan Revision & Update”, January 2017, prepared by Town of St. Marys. <https://www.townofstmarys.com/en/town-services/resources/Documents/FINAL-Strategic-Plan-REV-20170831.pdf> (Accessed October 2019).
- “The Corporation of the Town of St. Marys Waste Reduction & Diversion Assessment”, prepared by the Public Works Department, dated August 2018 (accepted by Council on September 11, 2018).

Additional sources of background information are documented in Section 13.0, References.

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## 2.0 Environmental Assessment Framework

### 2.1 Terms of Reference

The Terms of Reference (TOR) for the EA was approved on December 29, 2014 and outlines how the EA will be conducted.

The EA is being conducted in accordance with Section 6.1(3) of the Environmental Assessment Act (EA Act). This Section allows for an EA with a narrow scope, commonly referred to as a “focused EA”. The TOR outlined why this was deemed appropriate. In summary, the Town of St. Marys undertook some initial planning work prior to commencement of the EA. Work included a pre-screening of the Alternatives to the Undertaking.

The EA is scoped to focus on the Alternatives to the Undertaking which were remaining after the pre-screening exercise. These Alternatives include:

- Do Nothing (required by EA Act);
- Expansion of the Existing Landfill Site in St. Marys; and
- Exporting Waste to Another Jurisdiction.

### 2.2 Environmental Assessment Process

The Terms of Reference outlined a multi-phase process for completing the EA. This process is summarized in Table 2-1. This Table also indicates the location of each step of the process in this report. The remainder of this report follows this outline.

**Table 2-1: EA Process**

EA Process	Location in Report
<b>Phase 1: Evaluation of Alternatives to the Undertaking</b>	
Development of a framework for the Evaluation of Alternatives to the Undertaking, including a description of: <ul style="list-style-type: none"> <li>• The rationale for the proposed Undertaking;</li> <li>• The purpose of the Undertaking; and</li> <li>• The preliminary description of the Undertaking.</li> </ul>	Sections 3.1, 3.2, 3.3
Screening of various options to export waste to another jurisdiction.	Section 3.4
A description of Alternatives to the Undertaking.	Section 3.5
A description of the environment that will be affected or that might reasonably be expected to be affected, directly or indirectly using publicly available data and a landfill operators’ survey.	Section 3.7
An evaluation of the Alternatives to the Undertaking, including:	Section 3.8

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EA Process	Location in Report
<ul style="list-style-type: none"> <li>• Qualitative identification of potential impacts, including their magnitude, frequency, duration and reversibility; and</li> <li>• An evaluation of the advantages and disadvantages to the environment as a result of the Undertaking and the Alternatives to the Undertaking.</li> </ul>	
<b>Phase 2: Re-Assess the Environmental Assessment Requirements</b>	
Review of EA Requirements and need to complete the Evaluation of Alternative Methods.	Section 4.0
<b>Phase 3: Re-Define the Purpose and Rationale for the Undertaking</b>	
Review and redefine the following: <ul style="list-style-type: none"> <li>• The description of the Undertaking; and</li> <li>• The purpose and rationale for the Undertaking.</li> </ul>	Section 5.0
<b>Phase 4: Define the Parameters of the Study</b>	
Define the parameters of the study including: <ul style="list-style-type: none"> <li>• The Study Area;</li> <li>• The timeframe of the Study;</li> <li>• The components of the environment to be studied;</li> <li>• The Alternative Methods to be assessed; and</li> <li>• The evaluation criteria.</li> </ul>	Section 6.1, 6.2, 6.3, 7.1, 7.2
A description of the environment that will be affected or that might reasonably be expected to be affected, directly or indirectly using existing data and information collected through field surveys, modeling and data analysis, in accordance with various Technical Work Plans.	Section 6.4
<b>Phase 5: Assess Alternative Methods for Carrying Out the Undertaking</b>	
A description of: <ul style="list-style-type: none"> <li>• The positive and negative environmental effects that could potentially arise from each Alternative Method;</li> <li>• Measures for mitigating potential negative environmental effects;</li> <li>• Any residual impacts that cannot be fully mitigated; and</li> <li>• The selection of the Preferred Alternative based on the potential impacts of each Alternative, including their magnitude, frequency, duration and reversibility.</li> </ul>	Section 7.0
<b>Detailed Description of the Undertaking</b>	
A detailed description of the Undertaking.	Section 8.0
An assessment of impacts, mitigation, net effects and monitoring requirements.	Section 9.0

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<b>EA Process</b>	<b>Location in Report</b>
<b>Consultation Approach</b>	
A description of the consultation undertaken by the proponent and the results of the consultation.	Section 10.0
<b>Future Commitments</b>	
All future commitments including requirements for future studies, permits and approvals, monitoring and additional consultation.	Section 11.0
A framework for a Compliance Monitoring Plan.	Section 11.2. and 11.3
<b>Compliance with Terms of Reference</b>	
Confirmation that the EA has been completed in accordance with the approved TOR.	Section 12.0



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### **3.0 Phase 1: Evaluation of Alternatives To the Undertaking**

#### **3.1 Project Justification and Rationale**

The existing St. Marys landfill reached its approved capacity in January 2016. To maintain operations during preparation of this EA, the Town applied for and received ECA Notices (amendments) allowing continued use. The ECA has been amended to allow operation through September 30, 2022. As required by the ECA, the Town will apply to the MECP for further operation by July 31, 2022.

The MECP is not expected to extend the site's ECA indefinitely without a long-term plan to manage the Town's waste. The Town is responsible for the management of solid waste generated by the Town, its residents and local industry, businesses and institutions. Wastes generated from other communities or entities are not managed by the Town and there is no intent to accept waste from other communities in the future, as noted in a Town letter, dated December 18, 2019 provided in Volume IV, Appendix A. Therefore, the Town is responsible for developing a long-term waste management plan and is doing so through the Environmental Assessment Act planning process.

To understand the landfilling needs of the Town for the 40-year planning period commencing in 2017, investigations were undertaken to understand the Town's projected growth and predicted waste generation volumes. The following section documents the process used to determine the volume of waste requiring disposal over the next 40 years.

##### **3.1.1 Town Demographics**

The Town of St. Marys is a compact 12.48 km<sup>2</sup> urban centre with a 2016 Census population of 7,265 people. Located in southern Perth County and surrounded by the Township of Perth South, St. Marys is approximately 16 km southwest of Stratford and 25 km northeast of London. Founded in 1841, the Town is a traditional support and service centre for surrounding agricultural areas and has a full range of residential, commercial, industrial, and institutional areas, facilities, and services.

Table 3-1 provides the Town's population for the 25-year period from 1991 to 2016 according to Statistics Canada Census data.

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**Table 3-1: Census Data and Growth Rates for St. Marys**

Census Year	Population Town of St. Marys	Growth Rate†	
		Period	Annual
1991	5,496	8.30%	1.61%
1996	5,952	5.73%	1.12%
2001	6,293	5.20%	1.02%
2006	6,620	0.68%	0.14%
2011	6,665	9.00%	1.74%
2016	7,265		
1991 to 2016		32.19%	1.12%

† Growth Rate is calculated between Census years, for example, 1991 to 1996 growth is 8.3% overall (for the period) and 1.61% annually.

Overall, the population growth in the Town has been 32.19% over that 25-year period, or an average of 1.12% per year.

### 3.1.2 St. Marys Landfill

Historically the Town has provided waste disposal services for Town residents, businesses, and industries within the Town’s boundaries. There are at least two closed landfill sites dating back to the early to mid-1900’s.

The St. Marys Landfill is in the extreme southwest corner of the Town and was originally opened in 1984 on a 16.2 ha parcel of land leased from the adjacent St. Marys Cement Co. (SMC), a major industrial operation and employer in the Town. Prior to its use as a landfill site, SMC mined clays from the site for their cement making process. The Town acquired the 16.2 ha property from SMC in 2009. At that time, additional adjacent lands were also acquired, bringing the total size of the landfill property to 37 ha. The purpose of the acquisition was to allow the Town to continue with the disposal operations and associated waste management activities at the site. To date, 8 ha of the property area approved for waste disposal.

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### 3.1.2.1 Current Waste Diversion

The St. Marys Landfill serves as the sole waste disposal facility for the Town and, in the past decade, it has been modified to introduce waste diversion facilities, including:

- An area for the composting of leaf and yard waste;
- A municipal hazardous and special waste (MHSW) facility; and
- A waste transfer station for acceptance of electronic waste (e-waste), cardboard, scrap metal and blue box recycling materials.

The Town of St. Marys is also a member of the Bluewater Recycling Association (BRA), a non-profit organization based in southwestern Ontario with 20 municipal members. BRA is contracted by the Town to provide curbside collection of household waste and recyclable materials. The Town contracts with another contractor for yard waste pickups.

The Town has a Waste Management By-law No. 101-2019, dated November 26, 2019 (and former By-law No. 2012-71) governing the establishment and maintenance of a system for the collection of garbage, yard waste, recyclable materials and the disposal of waste at the St. Marys Landfill. As a member of BRA, the Town of St. Marys operates a comprehensive waste diversion program for Town residents consisting of several key components, including:

- An automated, user-pay, curbside collection system.
- Residential blue box and blue “wheelie” recycling bins.
- Every other week there is collection of paper (e.g., newspapers, magazines, pizza boxes, cereal boxes, flyers, egg cartons, paper towel rolls and telephone books); glass (e.g., clear and coloured glass food and beverage containers with lids and/or labels); plastic (e.g., wide mouth tubs and rigid screw-top containers, grocery and retail bags); and metal (e.g., aluminum and steel beverage and food cans, empty aerosol containers and empty paint cans, all metal lids).
- Curbside yard waste collection was expanded in 2017. Previously, yard waste was collected for five weeks in the spring and fall (10 weeks total). Collection on an alternating week basis from mid-May to mid-November began in 2017.
- The public is also encouraged to drop-off yard waste at the St. Marys Landfill composting area or at the Municipal Operations Centre located at 408 James Street South. Drop-off at these facilities is available year-round.
- The MHSW depot at the St. Marys Landfill was available until March 18, 2020 for drop-off of hazardous wastes (e.g., automobile batteries, waste oils, compressed gas cylinders, herbicides, aerosols and e-waste).
- Backyard composting, with periodic discounts to Town residents on purchase of back yard composters.

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- In 2005, the Town initiated an e-waste collection program for landfill diversion, thereby prohibiting the disposal of e-waste in the St. Marys Landfill.

The Town is currently investigating textile and mattress diversion programs as well.

Table 3-2 provides a list of all the waste (by tonne) diverted from the St. Marys Landfill as per recent Annual Monitoring Reports.

**Table 3-2: Summary of Waste Diversion from St. Marys Landfill**

Material	Quantity (tonnes)				Receiver
	2015	2016	2017	2018	
Curbside and Convenience Location Collection – Blue Box Recycling	1,070	1,049	1,063	1,050	BRA
Brush Material	196	370.9	69.94	106.77	Town of St. Marys
Leaf & Yard Waste	444	390.1	400.55	496.84	Town of St. Marys
e-waste	38.5†	5.2	21.65	13	Greentech
Wood Waste	85	188.6	114.51	100.1	Town of St. Marys
Scrap Metal	4.3	4.5	1.95	10.93	Robson Scrap Metal
MHSW	6.1	9.2	3.71	4.73	Photech
Aerosols	0.7		N/A	N/A	Environmental
Batteries	N/A		N/A	N/A	Aevitas
<b>Total</b>	<b>1,844.6</b>	<b>2,017.5</b>	<b>1,675.31</b>	<b>1,782.37</b>	

† 7.88 tonnes collected at the landfill; 30.66 tonnes collected at the Pyramid Recreation Centre.

The Town is committed to maintaining and expanding its waste diversion program to the extent possible. The benefits of that ongoing commitment include the reduction of the amount of post-diversion waste requiring disposal at the St. Marys Landfill (with the resulting extension in the life of the site) and the reduction of undesirable materials, such as MHSW, going into the landfill for disposal.

The maintenance and expansion of the Town’s waste diversion programs are efforts intended to proceed along with, but separate from, this EA process. However, the Town will also review and may implement additional waste diversion efforts as a normal course of future activities, beyond this EA. The ability to separate, process and market additional recyclable materials – or otherwise divert material from landfill disposal is expected to change over the 40-year planning period of this proposed *Undertaking*. Hence, the Town will review and implement diversion activities as technologies and opportunities become available.

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### 3.1.2.2 Interim ECAs

When the Town began the EA process ( 2011), the Site operated under ECA No. A150203, dated June 24, 2010. According to Condition 13.5 of the 2010 approval, Phase II/III of the Site had a maximum volume of 276,000 m<sup>3</sup>, while Phase I – which was completed in 1993 – provided 104,000 m<sup>3</sup>. This combines to an approved capacity of 380,000 m<sup>3</sup> for the Site.

As work on the EA progressed, the Town became concerned that the approved capacity would be consumed before all required approvals (EA, EPA, OWRA, etc.) could be obtained. The Town requested Interim ECA's from the MECP to allow continued operation of their landfill while completing the required approvals. Table 3-3 summarizes the ECA amendments received to date and their updated landfill volume allowances. These ECA amendments have been completed annually, recognizing the progress made by the Town toward completion of the EA. It is anticipated that additional interim capacity approvals may be required while the EA process is completed and all required approvals for the Site's expansion are obtained.

**Table 3-3: ECA No. A150203 Amendments and Approved Capacity**

ECA Approval & Notices		Resultant Site Capacity (m <sup>3</sup> )	Cumulative Additional Volume (m <sup>3</sup> )	Comments
	June 24, 2010	380,000		Original ECA (before beginning EA)
1	Dec. 11, 2013	no change		For MHSW Depot (not Interim Capacity)
2	Nov. 16, 2015	395,850	15,850	
3	Sep. 6, 2016	411,950	31,950	
4	Sep. 5, 2017	no change	31,950	
5	Sep. 20, 2018	428,140	48,140	
6	Oct. 4, 2019	434,050	54,050	
	Nov. 16, 2020	440,050	60,050	Issued Complete ECA
	Jan. 10, 2022	453,050	73,050	Issued Complete ECA

Historically, as was the case through Notice 6, the MECP's process for amending an ECA had been to identify only the modification to the ECA. Recently ( 2020), the MECP changed their policy; they now issue a complete ECA document, containing all conditions and revoking previous versions (including Notices). As a result, the St. Marys Landfill Site currently operates under a new Amended ECA (same number – A150203) dated January 10, 2022. The additional cumulative volume approved through ECAs of 73,050 m<sup>3</sup> is accounted for within the required waste capacity sought through this EA.

### 3.1.2.3 Historic Waste Disposal Rates

As a part of the St. Marys Landfill ECA requirements, annual surveys are conducted to determine the rate of fill of the site for the preceding period. In 2012, the Town installed a scale

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system at the St. Marys Landfill, which significantly improved the Town’s ability to accurately quantify waste entering the site. Since the Town installed a scale system the efficiency of its operations as measured by mass/volumetric tracking has improved. This may also be attributed to continued staff training and experience operating the site. The following table (Table 3-4) provides the available annual data for the site.

**Table 3-4: St. Marys Landfill Historic Waste Disposal Rates**

Year	Tonnes Received (t)	Rate of Fill (m <sup>3</sup> /y)	In-Situ Density (t/m <sup>3</sup> )
2010	no data	13,400	
2011	no data	13,690	
2012	4,154	17,315	0.240
2013	6,285	18,439	0.341
2014	5,687	13,662	0.417
2015	4,587	11,076	0.415
2016	5,943	11,457	0.519
2017	4,508	13,161	0.343
2018	5,050	9,246	0.547
2019	5,850	9,359 <sup>(note 4)</sup>	0.626
2020	5,921	7,137 <sup>(note 4)</sup>	0.830

Notes:

1. A tonne (t) is 1,000 kilograms (kg) or about 2,205 pounds (lb).
2. Scale was installed in 2012; no data prior to this date.
3. In-Situ Density is the mass of waste divided by the volume of waste and cover material (cover material mass is not included).
4. Annual Monitoring Reports for 2019 and 2020 only provide estimates for the volumetric rate-of-fill. The resulting In-Situ Density exceeds the 2012-2018 average by more than 55%. The Annual Monitoring Reports do not provide insight for waste stream changes or potential operational variations that explain the drastic improvement of in-situ density.

**3.1.3 Required Disposal Capacity**

The TOR established that 708,000 m<sup>3</sup> of capacity was needed to meet the 40-year planning period for the Town’s waste disposal needs. This was based on the rate of fill experienced at the St. Marys Landfill in 2009, 2010, 2011 and 2012.

As outlined in the TOR, a reassessment of the fill rate has been conducted as a part of this EA process to confirm that the requested capacity represents the Town’s requirements. The following sections describe the results of the fill rate reassessment.

**3.1.3.1 Population Projections**

It is generally accepted that there is a strong correlation between population and waste disposal. As a result, the waste requiring disposal can be assumed to correlate with population growth rates.

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The population growth rate for the Town of St. Marys was 32.19% overall or 1.12% per year, based on Census of Population data for 1991 to 2016. Most recently, between 2011 and 2016, St. Marys grew 9.0% (equal to a 1.74% compounding annual growth rate). The Statistics Canada census data and related calculations of growth – both between surveys and annualized – are provided in Table 3-1.

Projections for the growth of the Town of St. Marys population have been discussed in the following studies and reports:

- In 2010, the firm of Miller Dickinson Blais found that the Town of St. Marys had historically grown at a much higher rate than Perth County.
- BMA Management Consulting Inc.'s *Municipal Study 2012*, projected 25-year growth rates for Southwestern Ontario at an average of 13.9% (0.52% per year) with select counties seeing growth rates as high as 32.6% (1.15% per year). The *Municipal Study 2012* indicated that Perth County growth might be on the lower end of the projection. This generally reflected the Town's census data (Table 3-1) between 2006 and 2011 (0.14% per year), corresponding to the period when BMA's report was created. It does not reflect the more recent 2011 to 2016 census period, where the Town's growth was 1.74% per year – significantly ahead of the BMA projection.
- In 2014, B.M. Ross and Associates Limited (B. M. Ross) presented population growth estimates as part of the *Town of St. Marys Municipal Infrastructure Projects Public Information Meeting*. In that study B. M. Ross projected growth rates between 0.50% and 1.15% annually for the Town based on historic population growth.
- In January 2017, the Town of St. Marys issued their *St. Marys Strategic Plan Revision & Update*. In it, the Town has targeted a growth rate of 1.5% per year through 2027 for its infrastructure development.

Related to population projections (and waste generation), St. Marys has a disproportionately large industrial base for a community of its size. This impacts employment and residency within the Town. The various studies noted above will have considered the industrial base, including impacts of plant closures and proposed new developments.

The St. Marys population growth rate used for this EA has been revised from the TOR to reflect current literature. The long-term historic growth rate (Table 3-1) has also been considered. In selecting growth rates, it was felt that it is more important to select conservative rates given the resulting impact on the infrastructure needs. However, we did not want to select rates that were excessively large. Thus, we have selected two growth rates that reflect the available information for the EA planning period. These are:

- 1.50% per year growth through (and including) 2027; per the *St. Marys Strategic Plan Revision & Update*. We note this is significantly below the 1.74% annual growth between previous Census periods.

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- 1.15% per year growth beginning in 2028 through the end of the EA Planning Period (end-of 2057); per the B. M. Ross estimate. This is in keeping with the Town’s historic growth rate predicted by the Census data (Table 3-5).

By using two population growth rates in projections for the Town’s population from recent studies, there is a greater level of precision for future planning. As noted above, the annual growth rate through and including year 2027 is 1.50%. The growth rate then decreases to 1.15% annually from 2028 to the end of the EA Planning Period of 2057. Growing the 2016 census population in this way results in the following population projections:

**Table 3-5: Resulting Population Projections**

Year	Town Population	Growth Rate (% per year)	Notes
2016	7,265	-	Census value.
2017	7,374	1.5%	<ul style="list-style-type: none"> <li>• Start of Planning Period.</li> <li>• Growth per <i>St. Marys Strategic Plan Revision &amp; Update</i>.</li> </ul>
2022	7,944	1.5%	
2027	8,558	1.5%	End of growth per <i>St. Marys Strategic Plan Revision &amp; Update</i> .
2032	9,062	1.15%	Growth from 2027 per the B. M. Ross estimate.
2037	9,595	1.15%	
2042	10,160	1.15%	
2047	10,758	1.15%	
2052	11,392	1.15%	
2056	11,926	1.15%	Planning Period ends December 31, 2056.

### 3.1.3.2 Climate Change Effects on Landfill Disposal Needs

Climate Change is usually associated with any significant change in long-term weather patterns. Weather patterns can change the composition of the atmosphere, which results in processes that alter global temperature and precipitation. These processes can ultimately lead to increased occurrence of extreme weather events such as floods, droughts, ice storms and heat waves. To mitigate climate change and the effect it can have on the environment, government agencies have created strategies and guidelines to reduce Greenhouse Gas (GHG) emissions into the atmosphere, including carbon dioxide and methane, two primary constituents of landfill gas. According to Environment and Climate Change Canada<sup>8</sup>, emissions from Canadian landfills account for 20% of national methane emissions.

<sup>8</sup> <http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=6f92e701-1>, accessed March 28, 2017.



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The Government of Ontario has committed to reducing GHG emissions to 80% below 1990 levels by 2050 and has established two mid-term targets of 15% below 1990 levels by 2020 and 37% below 1990 levels by 2030 (MOECC, 2015).

The MECP has developed a Climate Change Strategy (MOECC, 2015), which outlines the five areas that Ontario will focus on to achieve the GHG reduction targets, including:

- A prosperous low-carbon economy with world-leading innovation, science and technology;
- Government collaboration and leadership;
- A resource-efficient, high-productivity society;
- Reducing GHG emissions across sectors; and
- Adapting and thriving in a changing climate.

Severe weather events influenced by Climate Change can have a direct impact on landfill utilization. These events can result in increased property damages from excessive wind and precipitation, which can subsequently result in an increase in the amount of materials being received at landfills in the form of damaged goods.

For example, the Town of Goderich was struck by a tornado in 2011. In the year following the event, waste acceptance rates at the municipal landfill were approximately 300% of the previous year<sup>9</sup>, indicating the single storm event resulted in the creation of the equivalent of an additional two years of waste. A tornado strike in St. Marys, made more likely due to Climate Change, could cause similar damage and require similar disposal needs.

More recently, the 2016 wildfires in Fort McMurray, Alberta, resulted in the loss of 2,400 homes and buildings. Subsequent news reports<sup>10</sup> indicated that these fire damaged homes each generate between 97 and 175 tonnes of waste. A fire in the downtown core of St. Marys or at a manufacturing plant, potentially worsened by dry conditions related to Climate Change, could therefore create significant quantities of waste requiring disposal.

Locally, high water levels have occurred historically along the Thames River. The most recent event was in February 2018. While this event did not result in any major property damage, the Upper Thames River Conservation Authority (UTRCA) issued a flood warning for St. Marys. Since portions of the Town lie within the UTRCA Flood Plain, high water levels resulting from severe weather events could result in increased property damage and a resultant increase in waste for disposal.

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<sup>9</sup> *Personal communications between James Hollingsworth (Burnside) and Steve Janes (consultant for Huron County Waste Management Planning), June 2014.*

<sup>10</sup> <http://www.660news.com/2016/07/10/fort-mcmurrays-genial-landfill-manager-surfs-tsunami-of-wildfire-waste/>, accessed July 12, 2016.

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Snow and ice storms are also a concern. Several such events have caused widespread damage to trees, power lines and buildings. The most recent event occurred in Winnipeg, Manitoba, on October 14, 2019.

Severe occurrences such as those mentioned above are unlikely to impact the Town directly during the planning period. However, incremental impacts of storm events and Climate Change related impacts are expected to increase in frequency and severity during the planning period.

In order to assess the potential for waste generation from the Town of St. Marys as a result of Climate Change related severe weather events, the Study Team incorporated the U.S. Army Corps of Engineers debris model for a single Category 1 hurricane. This is intended to represent the cumulative effect of more severe storms and resulting damages (disposal needs) that may occur due to Climate Change. Based on the model, approximately five months or 1% of additional capacity could be utilized in dealing with the storm debris. This has been incorporated into the re-evaluation of the disposal capacity required for the Town of St. Marys.

### **3.1.3.3 Increased Waste Diversion**

Ongoing efforts by businesses and residents impact the rate of waste production and disposal through diversion efforts. This can change the quantity, and qualities of the wastes being disposed of by the Town over the planning period.

As noted previously, the Town of St. Marys is a member of the Bluewater Recycling Association (BRA). The Resource Productivity & Recovery Authority (RPRA)<sup>11</sup> does not break-out diversion information for the Town and instead reports it for all members of BRA as a single result. While it is recognized that urban areas such as the Town of St. Marys typically enjoy higher diversion rates than rural area, because the services provided by BRA are equivalent across its service area, it has been assumed that the reported diversion rate for the Association is representative of the diversion rate for the Town. It may be, however, that the Town's diversion rate is higher than the overall (averaged) rate reported for BRA.

The most recent data (2018)<sup>12</sup> indicated that the total diversion rate is 33.8% for BRA (and the Town), while the municipal group, Rural Regional, average is 44.1% and the provincial diversion rate is 49.7%. BRA ranked 13 out of the 15 municipal programs within their municipal group, and the group ranked third of nine categories behind Large Urban Regional, and Urban Regional programs (which combined account for 76% and 80% of disposal and diversion by mass, respectively). It is noted that the Town of St. Marys is directly responsible for diversion of brush material, leaf and yard waste, e-waste, wood waste, scrap metal and MHSW. They also recycle concrete and asphalt in the Town's ongoing construction projects. This diversion information is not provided by the Town to BRA and is therefore not considered in the RPRA (and former Waste Diversion Ontario (WDO)) Datacall results.

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<sup>11</sup> In November 2016, the RPRA replaced Waste Diversion Ontario.

<sup>12</sup> <https://rpri.ca/wp-content/uploads/2017-Residential-Waste-Diversion.xlsx>, accessed November 1, 2019.

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Based on the differences between the Ontario average diversion rate (49.7%) and the Large Urban systems (52.8%) versus the rate obtained by BRA (lower by 12.1% and 15.2%, respectively), there is a clear opportunity for the Town (and the Province) to obtain higher diversion. However, we note that larger communities are capable of more rapidly adapting to emerging trends, and hence obtain better diversion rates sooner. It is reasonable that as additional technologies are developed and because of continuing education, the diversion rate for St. Marys will increase toward rates experienced elsewhere.

As explained in *The Evolving Tonne of Recyclables*<sup>13</sup>, several waste management companies and municipalities have also detected changes in the waste stream in the last few years. In September 2020 (based on a 2019 report) the Continuous Improvement Fund (CIF) noted<sup>14</sup> the tremendous global growth in the use of flexible packaging<sup>15</sup> as industry attempts to light-weight their products.

Industry has been working to light-weight their packaging for many years now. In particular, packaging has been redesigned to provide the same level of product protection while containing less material – such as through more rigid, thinner walled plastic protective shells, and, to a lesser extent, by optimizing the products themselves. This reduces production and transportation costs for the products. However, these materials typically have the similar volumes as the predecessors. As a result, receiving facilities (for both waste disposal and recyclables) have noticed a decrease in the mass (weight) being handled without a corresponding decrease in handled volumes. Unilever, a multinational consumer goods company, notes<sup>16</sup> “Since 2010 we’ve reduced the weight of our packaging by 20% through light-weighting and design improvements.” This trend may continue as implementation of the *Waste Free Ontario Act* and the *Resource Recovery and Circular Economy Act* proceeds.

Overall – through the 40-year planning period – it is predicted that the mass of waste produced on an annual per capita basis will decrease through continuing diversion efforts. This will occur as programs in rural and small urban areas are established mimicking those of larger urban areas. In addition, we anticipate manufacturers will continue and enhance their efforts to reduce materials used in production and packaging. However, with the current trend towards rigid, lightweight materials, the reduction in per capita disposal requirements on a volume basis will lag mass reductions. This trend may continue as the Province proceeds with implementation of the *Waste Free Ontario Act* and the *Resource Recovery and Circular Economy Act*. In fact, it may continue due to similar pressures external to Ontario.

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<sup>13</sup> [http://www.solidwastemag.com/downloads/165/download/SWR\\_D15J16\\_LR.pdf](http://www.solidwastemag.com/downloads/165/download/SWR_D15J16_LR.pdf), accessed December 9, 2016.

<sup>14</sup> <https://thecif.ca/understanding-flexible-packaging-for-recycling/>, accessed November 23, 2020.

<sup>15</sup> From the CIF report, flexible packaging is used for “a wide array of products such as coffee, laundry detergent, baby food, cat litter, single-serve juices, motor oil, toothpaste and even more. Packages can be made with a single layer, a mono-material laminate (i.e. multiple layers from the same polymer) or the more complicated, multi-material laminate (made from multiple layers from different polymers). Flexible packaging can also include papers and metals as key components, closures using zips, spouts or reseal adhesives, and various additives.”

<sup>16</sup> <https://www.unilever.com/sustainable-living/reducing-environmental-impact/waste-and-packaging/>, accessed November 23, 2020.

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MECP's (Nov. 2018) Preserving and Protecting our Environment for Future Generations – A Made-In Ontario Environment Plan identifies the need for action to be taken to reduce waste being generated and to increase diversion. Reduction of waste can occur at all levels, from the end-users to the producers. As Ontario begins to move towards a Producer Responsibility model to replace the Blue Bin program, it is expected that innovations will be made to reduce single-use plastics and create markets for diverting additional waste streams. The Plan identifies the Province's commitment to work with producers and municipalities to educate residents on the importance of reducing the amount of waste generated, increase waste diversion, and managing food/organic waste (composting). Unfortunately, it is unknown how or when Plan implementation by the Province, waste generators and members of the public will impact the local disposal needs of the Town.

Future diversion rates have not been projected due to the transition of the Blue Box program to Expanded Producer Responsibility (EPR) under the *Resource Recovery and Circular Economy Act*. The regulations for EPR have not been developed and the role of the municipality in the program remains uncertain at this time.

#### **3.1.3.4 Disposal of Industrial, Commercial, and Industrial Waste**

The Town has approximately 777 ha of total developed land, of which approximately 410 ha, about 53%, is Industrial, Commercial and Institutional (IC&I). The Town is not responsible for waste collection or disposal from IC&I users however, many of these IC&I users have their waste delivered to the St. Marys Landfill for disposal. To ensure that disposal needs of IC&I users are factored into the overall required capacity, the waste disposal rate calculated for the St. Marys population includes waste disposed by IC&I users, which is subject to annual population growth. As a percentage of the total waste disposed at the St Marys Landfill over the past six years (2015 to 2020, inclusively), an average of 60% originates from the IC&I sector. When comparing the amount of waste disposed by residential and IC&I users verses the land area used for each, there is a clear correlation. It is expected that as the Town experiences growth in population, the IC&I sector will similarly experience growth – this has been accommodated within the required disposal capacity.

#### **3.1.3.5 Waste Reduction and Diversion Assessment (2018)**

The *Waste Reduction and Diversion Assessment* (2018) created by St. Marys states that IC&I waste may be largely reduced within the community by following the *Strategy for a Waste Free Ontario: Building a Circular Economy* document. The Town has interest in following guidelines set forth in the *Strategy for a Waste Free Ontario* document, being a long-term initiative toward waste diversion. Also stated in the *Waste Reduction and Diversion Assessment* (2018), there are eight waste diversion and reduction programs operating within the Town, which have successfully diverted approximately 5,500 tonnes of waste from the landfill site over the period of 2015 to 2017 (inclusive). Including 2018 data, shown in Table 3-6, the Town has diverted a total of 7,320 tonnes. These programs include the following:

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- Automated Curbside Collection
- Municipal Hazardous and Special Waste Depot
- Leaf and Yard Waste Collection
- Scrap Metal Recycling
- Blue Box Recycling
- Electronic Waste
- Concrete and Asphalt Recycling
- Wood and Brush Grinding

Additional details regarding the programs can be found within the Assessment document, included as Appendix A.

Eight additional waste reduction or diversion programs have been identified for Town future consideration, including the following:

**Table 3-6: St. Marys Proposed Potential Diversion Programs**

<b>Program</b>	<b>Description</b>
Food and Organics Collection	In line with 'Ontario's Food and Organic Waste Framework Action Plan', which strives to reduce food waste, recover resources from food and organic waste, promote beneficial uses and support resource recovery infrastructure.
Cigarette Waste Recycling Program	St. Marys is evaluating implementing a Cigarette Waste Recycling Program using TerraCycle, which cannisters' accept all portions of the cigarette. The cigarette waste is then shipped for recycling, which are then remodeled to create industrial products.
Asphalt Shingles Recycling Program	Currently being considered by the municipality to increase diversion from the landfill site. The Town has consulted with industry leaders in shingles recycling and other municipalities who currently operate an asphalt shingle recycling program, to understand how it would be incorporated within the Town's waste management system.
Mattress and Box Spring Program	Mattresses and Box Springs are a bulky waste stream currently accepted at the landfill, presenting another avenue to increase waste diversion. Compaction of these wastes can cause issues due to the metal springs becoming entangled within equipment, increasing maintenance requirements. Neighbouring municipalities redirect this stream to third party processors.
Landfill Optimization	The in-situ density of waste is less than what is anticipated with the use of compaction equipment. Further improvement to operations at the landfill will increase density values. St. Marys has been in discussion with local industry regarding diverting waste specific streams from the landfill. Additionally, the Town is investigating additional earth moving equipment at the landfill, which is currently done utilizing compaction equipment.
Backyard Composting Initiatives	Having success in the past, backyard composting is a cost-effective means to increase diversion of food wastes. St. Marys is evaluating The Green Cone, a backyard composting

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Program	Description
	system, which digests all types of food wastes and does not attract animals due to its enclosed design.
Textile Recycling	St. Marys offers multiple location where residents can dispose of their clothing around the Town. The Town is looking at potentially implementing systems for textile material not in a condition to be donated, to increase diversion of this stream.
IC&I Diversion	<p>Based on the Provincial goal of creating a circular economy, the IC&amp;I sector will be required to focus on the following:</p> <ul style="list-style-type: none"> <li>• Using fewer raw materials to reduce waste;</li> <li>• Design products and packaging to be more durable and recyclable;</li> <li>• Businesses should coordinate with differing sectors to reduce greenhouse gas production; and</li> <li>• Companies should implement programs for the reuse, repair or recycle their products at the end of their life-cycle.</li> </ul>

Initiatives have been developed to fit near-term and long-term goals, including additional incentive programs for backyard composters and consideration of implementing a food and organics collection program, respectively. These programs, in addition to the implementation and timeline of the Provincial government’s frameworks, goals and programs, may play a role in the long-term reduction of divertible items entering the landfill. The proposed expansion volume is conservative, in order to account for uncertainties regarding the overall timeline of future provincial/Town diversion programs.

As reported within the Assessment document, in 2017 the implemented diversion programs accounted for approximately 44% of wastes being diverted from the landfill. This rate is consistent with the reported diversion rates as calculated in the report from 2010 to 2017, which have an average rate of 47%, not trending in an increased fashion. However, it is difficult to project the future effects on the Town’s diversion rate, due to the uncertainty of the timeline and impact of Provincial programs on the Town’s waste management practices. The significant impacts of IC&I waste will likely be reduced, due to the government’s circular economy approach.

It is reasonable to assume gradual implementation of the Town’s and Provincial government initiatives will show improvement over the planning period – reducing the mass of waste requiring disposal. However, the extent that these improvements will reduce the *volume* of waste entering the landfill is unknown. The unquantifiable nature of waste reduction is discussed further below (particularly Section 3.1.3.7, which discounts anticipated disposal requirements by 2.4%).

### 3.1.3.6 Effect of Provincial Policies

The *Waste-Free Ontario Act* (2016), enacts the *Resource Recovery and Circular Economy Act* (2016) (RRCEA). For the Town of St. Marys, the primary impact of the RRCEA will be the

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transition of responsibilities for the (current) Blue Box recycling program. Producers, as defined in the RRCEA, are to assume responsibility for recycling from the Town. The mechanism for this has not yet been developed, but implementation is currently expected to occur between 2023 and 2025, as stated in the *Strategy for a Waste-Free Ontario: Building a Circular Economy* (2017) and the Minister's August 15, 2019 direction letters to Stewardship Ontario (SO) and the Resource Productivity & Recovery Authority (RPRA).

It is believed that the shift to producer responsibility will increase Ontario's overall recycling rates. Simultaneously, it will promote innovation by producers; they will seek less costly, more eco-friendly packaging materials/methods. Disposal tonnages may also drop in future years due to stricter packaging regulations, limiting manufacturers from incorporating a greater amount of plastic or non-recyclable material within their packaging (see also the discussion on *The Evolving Tonne of Recyclables* in Section 3.1.3.3).

There may also be additional benefits to the Town if product stewardship programs are extended to more materials/products than currently covered by existing diversion programs. However, there are two initial concerns relative to the Town of St. Marys and disposal requirements:

- Will the producers achieve the collection (diversion from disposal) targets that will be set by the province? A producer may decide to pay penalties instead of putting forth the effort to achieve the diversion target.
- Will producers concentrate their collection (diversion from disposal) efforts in large-population centres? Such centres offer efficiency-of-scale benefits to the producers.

Should either (or both) occur, the Town may need to dispose of more material than has historically been landfilled.

As a landfill operator, the Town is also concerned about the relationship between disposal mass (tonnage) and landfill volume (cubic metres). As described in *The Evolving Tonne of Recyclables* in Section 3.1.3.3, lighter material may arrive for disposal. Lighter material might not be packed into an equally smaller volume then the space required in the landfill will not decrease. Annually reported disposal densities (tonnes per cubic metre) at the St. Marys landfill have varied drastically in the last several years. This may be a symptom of producers moving to light-weight packaging material.

Ontario's Food and Organic Waste Policy Statement<sup>17</sup>, issued under Section 11 of the *Resource Recovery and Circular Economy Act, 2016*, provides direction to provincial ministries, municipalities, industrial, commercial and institutional establishments, and the waste management sector to increase waste reduction and resource recovery of food and organic waste. In the policy statement's section entitled "Increasing Residential Resource Recovery in Southern Ontario", it indicates that municipalities that do not already provide curbside collection of source separated food and organic waste will only be required to start a collection program if

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<sup>17</sup> <https://www.ontario.ca/page/food-and-organic-waste-policy-statement> (accessed October 2019).

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their population exceeds 20,000 (there are other criteria, but this is a simplified explanation; full details can be found in the policy statement). The Town of St. Marys population was 7,265 according to the 2016 Census. Food and organic waste collection is therefore not required by the Province's policy.

The Ontario government is also placing a large emphasis on reducing food wastes from our landfills, proposing to ban the source altogether. Released in November of 2018, the *Made-in-Ontario Environmental Plan* outlines future actions which will work to divert and reduce organic and food waste from landfills. This plan is expanded upon in the associated document, *Reducing Litter and Waste in Our Communities: Discussion Paper* (2019). The discussion paper outlines the creation of a future proposal for a food waste ban from landfills. It states that municipalities are to implement their own promotion and education programs aimed at preventing food waste. The subject of food rescue is also included in the statement, though is more so directed towards shopping establishments, restaurants and manufacturers. Further, it mentions the shift towards a greater amount of compostable packaging, which may further reduce packaging wastes in landfills. The statement says that all commercial locations (involving restaurants) that generate 300 kg or more of organic waste per week shall be responsible for source separation. This is likely not applicable to commercial locations in St. Marys, due to the small size of the community. These changes to the acceptance of food waste will not be applicable to St. Marys, again due to its small population not meeting the participation threshold. The policy statement mentions that local municipalities with a population of greater than 50,000 residents and a population density of greater or equal to 300 persons per square kilometer are required to participate. St. Marys does not meet the population threshold requiring participation.

Following *Ontario's Food and Organic Waste Framework Action Plan* (2018) may have a significant impact on the town's diversion, as the IC&I sector accounts for roughly 45% of organics waste in Ontario. The community also plans to service additional waste streams by establishing a sustainable diversion program for shingles and textiles, as well as ban mattresses and box springs from the landfill in the future. A pilot program for textile diversion was recently issued<sup>18</sup> but no program is yet in place.

As discussed above, Town of St. Marys is a member of the Bluewater Recycling Association (BRA). BRA collects waste and recyclables for member communities (and some non-member municipalities). BRA does not currently collect food and organic waste. This service may become available in the future, at which time St. Marys may decide to implement food and organic waste collection. Such a program has been envisioned in the Town's August 2018 *Waste Reduction & Diversion Assessment*.

The Town of St. Marys is committed to reviewing their operations and applicable diversion programs every 10 years and implementing diversion targets set out in provincial policy. Through this, we anticipate but cannot quantify future waste reduction and diversion effects.

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<sup>18</sup> Per the St. Mary's Request for Proposals document for a textile diversion program; RFP-PW-16-2019, August 2019.



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For planning purposes (that is, to be conservative in our assumptions) the impact of future waste reduction and diversion on the required disposal capacity (volume) is assumed to be minor.

### 3.1.3.7 Calculated Capacity for the 40-Year Planning Period

During preparation of the TOR, the capacity for the 40-year planning period was calculated based on:

- a) The landfill volume consumed between January 1, 2009 and December 31, 2012<sup>19</sup>. This was averaged, arriving at a value of 13,500 m<sup>3</sup> per year.
- b) Population growth, estimated at 1.0% per year, will correspond with the need for disposal capacity.
- c) That the new disposal capacity would be required as of January 1, 2017 (i.e., this is the start of the EA planning period, so 40-year planning period would end on December 31, 2056).

Combined, it was calculated that the 40-year planning period would require 708,000 m<sup>3</sup> of waste and operational cover disposal capacity.

The reassessment of capacity requirements undertaken during the EA has updated the method of calculation to consider:

- d) The per-capita waste disposal volume: 1.888 m<sup>3</sup>/person-year. This is calculated from:
  - Total volume used between January 1, 2012 to December 31, 2018<sup>20</sup>: 94,356 m<sup>3</sup> (approximately 13,500 m<sup>3</sup>/year), per volumetric surveys – see Table 3-4.
  - Total population that generated the waste volume: 49,964 person-years, calculated from Census data – see Table 3-1.
- e) Approximate volumes of waste and operational cover placed in 2017 through 2020 (inclusive)<sup>21</sup>: 38,903 m<sup>3</sup> – see Table 3-4.
- f) Projections of Town population for 2021 through 2056 (inclusive): 353,310 person-years, per:
  - Census data in Table 3-1.
  - Population growth rate estimates in Section 3.1.3.1.

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<sup>19</sup> The 2013 annual rate of fill was unknown at the time of TOR preparation.

<sup>20</sup> The accuracy of disposal volumes for 2019 and 2020 is unknown and therefore not incorporated into the per-capita fill rate calculation (see note on Table 3.4).

<sup>21</sup> Despite inaccurate 2019 and 2020 disposal volumes, they are included in our estimate of volume consumed to date. This does not impact disposal requirements for the planning period.

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- g) Summing the above and adding 1% to account for potential climate change disposal needs, per Section 3.1.3.2.

All of this results in a total disposal requirement of 713,013 m<sup>3</sup> for the 40-year planning period (2017 through 2056, inclusive).

Diversion of waste through programs offered by the Town are not included in the waste disposal volumes. The volumes used to calculate the total disposal requirement is residual waste; therefore, increases in waste diversion is considered in the overall disposal requirement for the planning period.

Considering the unquantifiable nature of some of the factors discussed in earlier sub-sections, the planning timeframe and ongoing changes to the waste management industry, the Town has decided to continue the EA process using the 708,000 m<sup>3</sup> proposed in the TOR. This is 1% less than the total disposal requirement calculated above (713,013 m<sup>3</sup>). Based on the data presented, it is believed that this represents a reasonable, conservative estimate. It allows the Town to meet its current requirements while still planning for the projected growth in a manner that solid waste infrastructure does not become a limiting factor.

### 3.1.3.8 Interim Fill and Planning Period Capacity

The Town has chosen, and the TOR approved, a planning period of 40-years, starting January 1, 2017, and ending December 31, 2056. The capacity consumed from the approved interim ECA's through EA Approval is removed from the capacity requested by the EA.

Per the previous section, the Town is seeking 708,000 m<sup>3</sup> of total waste and operational cover (disposal) capacity for the *full* 40-year planning period. The various interim ECAs in place since the initial ECA have permitted ongoing disposal of 73,050 m<sup>3</sup> of waste (see Table 3-3). Therefore, as of September 2022, the capacity requested by this EA is:

708,000 m <sup>3</sup>	Planning Period disposal requirements (per Section 3.1.3.7)
<i>minus</i>	
73,050 m <sup>3</sup>	Volume consumed from interim ECA's.
<b>634,950 m<sup>3</sup></b>	<b>Remaining Planning Period Requirements</b> (through December 31, 2056)

Additional capacity will be consumed as this EA Report is approved and other approvals are sought.. The volume consumed by interim disposal during 2022 (and beyond) is not currently known and will not be reported herein. Further, the base data and evaluations completed for this EA predate the interim operation approvals (ECA's). As a result, this report and it's supporting documents refer to 708,000 m<sup>3</sup> as the planning period required capacity. We recognise the volume consumed during the EA approval process, and subsequent approvals, will be accounted for when determining the design capacity of the landfill.

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### 3.2 Preliminary Problem Statement

The problem which will be addressed through this EA is as follows:

*The Town of St. Marys must identify a solution that addresses the Town's post-diversion municipal solid waste disposal needs over a 40-year planning period in a technically and economically feasible manner while minimizing impacts to the environment.*

This Problem Statement is reviewed and refined upon completion of the Evaluation of Alternatives to the Undertaking.

For further clarity, the 40-year planning period is defined as **January 1, 2017** through **December 31, 2056**.

### 3.3 Preliminary Description of the Undertaking

The following describes the proposed Undertaking:

- The Undertaking will include the proposed changes that are made to address the Town's future municipal waste disposal needs.
- The Undertaking will need to address the Problem Statement defined above. The description is purposely broad at this stage to allow for consideration of the range of Alternatives identified in the Terms of Reference. The description of the Undertaking will be refined as the EA progresses.

### 3.4 Screening of Waste Export Options

#### 3.4.1 Screening Methodology

As noted in Section 2.0, the initial evaluation of *Alternatives to the Undertaking* evaluates the following:

- Do Nothing;
- Alternative 1: Expanding of the St. Marys Landfill; and
- Alternative 2: Exporting Waste to Another Jurisdiction.

Several options exist regarding how, and to where, waste could be exported. During the TOR phase, a list was developed of alternative receiving locations for exported waste from the Town of St. Marys. At the TOR phase, the Study Team was considering two primary jurisdictional areas for waste export, private and municipally operated landfills. The options identified were:

- Waste Export to Local (Municipal) Landfill Sites;

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- Green Lane Landfill (Southwold Township, Ontario)<sup>22</sup>;
- Mitchell Domestic Landfill (Municipality of West Perth, Ontario);
- Logan Landfill (Municipality of West Perth, Ontario); and
- Blanchard Landfill (Township of Perth South, Ontario).

Waste Export to Private Landfill Sites:

- Twin Creeks Landfill (Warwick Township, Ontario);
- Carleton Farms Landfill (Sumpter Township, Michigan, USA); and
- Proposed Southwestern Landfill<sup>23</sup> (Zorra Township, Ontario).

The TOR noted that other options may be identified during the EA process. During the EA phase, the Study Team identified additional municipal and private landfill options and undertook a screening of these potential options to determine the preferred option for the Town of St. Marys. The additional landfills and screening methodology are presented in the following section.

### 3.4.1.1 Data Collection

To collect data supporting the evaluation of the *Waste Export Alternatives*, the Study Team developed two surveys, one for municipalities and one for private waste haulers, transfer station and landfill operators.

#### Municipal Survey

The municipal survey was sent to 14 municipalities that operate landfills within approximately 100 km of St. Marys, including the following:

- County of Wellington;
- Oxford County;
- Regional Municipality of Waterloo;
- Municipality of South Huron;
- Township of Perth South;
- City of Toronto;
- Municipality of West Perth;
- City of Stratford;

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<sup>22</sup> Green Lane was listed in the TOR as a private landfill. However, it was purchased by the City of Toronto in 2007 and is, therefore, a municipally owned landfill.

<sup>23</sup> The Southwestern Landfill proposed by Walker Environmental Group Inc. is undergoing an EA process for approval.

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- Municipality of North Perth;
- Township of Perth East;
- County of Brant;
- Municipality of Thames Centre;
- Township of Adelaide Metcalfe; and
- Municipality of Southwest Middlesex.

The survey asked whether the municipality would be interested in accepting St. Marys' waste. A follow-up question asked how the answer had been determined (i.e., had there been a discussion about providing waste capacity to St. Marys amongst council, Committee of the Whole, with the County Warden/Mayor/Chief Administrative Officer etc.). A copy of the survey is provided in Appendix B to this report.

### **Private Hauler, Transfer Station and Landfill Operator Survey**

Three private landfill sites were identified in the TOR. Through the EA process it was determined that additional private options exist, including the following:

- Use St. Marys curbside collection vehicles to deliver waste directly to a private landfill.
- Use St. Marys curbside collection vehicles to deliver waste to a transfer station and then use a private hauler to transfer waste to a private landfill.

In addition to private landfills, disposal at the Emerald Energy from Waste site in Mississauga was considered.

A questionnaire was created to obtain comparative data from private trucking, transfer station and disposal facility operators. The questionnaire included a wide range of questions including tipping rates, maximum length of contracts, rate increases in the last five years, remaining capacity of the landfill and whether they are currently licensed/permitted to receive waste from St. Marys, among other questions. A copy of the questionnaire can be found in Appendix B.

## **3.4.2 Screening Findings**

### **3.4.2.1 Export to a Municipal Landfill**

Of the 14 municipalities who received a survey, 10 responded indicating that they would not be interested in receiving St. Marys' waste. Four did not respond to the survey. Copies of responses are provided in Appendix B. Based on this information it was determined that export to another municipal landfill is not a feasible option. This option was not considered any further in the study.

### **3.4.2.2 Export for Private Disposal**

The Private Waste Service Providers Survey was distributed to:

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- Six private landfill and/or transfer station operators:
  - Walker Environmental Group (Niagara Landfill, Smithville, Ontario);
  - Waste Management of Canada Corporation (Twin Creeks Landfill, Watford, Ontario);
  - Republic Services Inc. (Carleton Farms Landfill, Michigan, U.S.A.);
  - BFI Canada Inc.<sup>24</sup> (Ridge Landfill, Blenheim, Ontario);
  - Brooks Road Environmental (Brooks Road Landfill, Cayuga, Ontario); and
  - Emerald Energy from Waste Inc. (Thermal waste disposal site in Mississauga).
- Nine waste haulers:
  - Challenger Motor Freight;
  - Wasteco;
  - GFL Environmental Inc.;
  - Bluewater Recycling;
  - Progressive Waste Solutions;
  - TRY Recycling;
  - Green Valley Recycling;
  - Clean Harbours; and
  - ECL Carriers.

It is noted that the TOR indicated that the Southwestern Landfill proposed by Walker Environmental Group Inc. in Zorra Township would be considered. As this proposed landfill was not approved at the time of the survey, it was determined that it should not be included in the screening. However, as noted, a variety of alternative private landfills were assessed.

Of the six private landfill and transfer station operators contacted, five completed the survey. Of the nine waste haulers contacted, five provided responses. The full survey and responses can be found in Appendix B.

A summary of the private landfill and thermal treatment sites costs and ability to receive waste from St. Marys is presented in Table 3-7. The four final disposal and treatment sites which provided responses to the survey questions include:

- Walker Environmental (Niagara Landfill);
- Waste Management of Canada Corporation (Twin Creeks Landfill);
- Republic Services Inc. (Carleton Farms Landfill); and
- Emerald Energy from Waste Inc. (an incinerator in Peel Region).

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<sup>24</sup> Now known as *Waste Connections of Canada*.

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**Table 3-7: Responses to Private Landfill/Thermal Treatment Fee and Capacity Questions**

Questions	Walker Environmental (Niagara Landfill)	Waste Management of Canada Corporation (Twin Creeks Landfill)	Republic Services Inc. (Carleton Farms Landfill)	Emerald Energy from Waste Inc.
Is your site licensed/permitted to receive waste from St. Marys? (Y/N)	Y	Y	Y	Y
Do you have capacity to receive 2000 to 5000 tonnes/year from St. Marys? (Y/N)	Y	Y	Y	Y
What is the estimated remaining capacity at your site (in m <sup>3</sup> and years)?	Volume: 14.5 Mm <sup>3</sup> Life: 13 years	Volume: 20 Mm <sup>3</sup> Life: 25 years‡	Volume: 60 Mm <sup>3</sup> Life: 75 years	N/A
What is the current gate tipping rate?	\$45 to 55/tonne	\$45 to 50/tonne	\$18/tonne	\$90/tonne
What is the maximum contract duration you are willing to negotiate?	10	25	10	20
How have tipping rates changed in last 5 years?	± 5% continual decline with par dollar and cheap fuel, stabilizing now with lower Canadian dollar	Rates have decreased to compete with Michigan landfill rates.	Have not increased in last 5 years.	No response provided.
Distance from St. Marys <sup>†</sup>	157 km	80 km	250 km	144 km
Preferred Private Landfill/Thermal Treatment Site	Not preferred: high tipping fees, short lifespan remaining and short contract duration.	Preferred for proximity and contract duration.	Not preferred: distance and border crossing required.	Not preferred: high tipping fees and distance to the site.

Notes:

† One-way travel distance, from St. Marys to the disposal site.

‡ Rate-of-Fill revised in 2017, resulting in an estimated 15 years of remaining capacity.

No response received for the Ridge Landfill (Blenheim, Ontario) or the Brooks Road Landfill (Cayuga, Ontario).

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BFI Canada Inc. provided a survey response that indicate their transfer station would send waste to the Ridge Landfill. They did not answer the landfill related questions featured in Table 3-7. As such, only four of the five respondents have been included.

Based on the information provided, the Twin Creeks Landfill in Watford and Carleton Farms Landfill in Michigan are the highest rated opportunities.

The Twin Creeks Landfill has the following advantages:

- At least 25 years of capacity remaining at the site.
- Willingness to negotiate a 25-year contract.
- Relatively close distance from St. Marys.

The advantages of taking the Town's waste to Carleton Farms Landfill in Michigan include:

- 75 years of capacity remaining at the site (this is the only landfill with sufficient capacity to fully address the 40-year needs of St. Marys).
- A low tipping fee (cost).

Although the option to deliver waste to Michigan offers some advantages, in August 2006<sup>25</sup> Ontario's Environment Minister and US Senators for Michigan, Debbie Stabenow and Carl Levin, agreed to stop cross-border shipments of municipally-managed waste, from Ontario into Michigan by 2011. The agreement does not cover waste under private contract that the Ontario government and its municipalities do not control. The agreement was focussed on the larger Ontario municipalities that were, at the time, shipping their waste to Michigan landfills, namely the City of Toronto and the Regions of Durham, Peel and York. Today some Ontario municipalities are utilizing private waste collection, transfer stations, and/or haulage to send their waste to Michigan landfills. As such, for this option to be feasible, the Town would need to use a private hauler or deliver waste to a private transfer station with the necessary permissions/approval to transport waste across the border into Michigan. Through the survey, Waste Management of Canada Corporation noted the following:

*St. Marys waste volume is small. Therefore, roll-off and curbside collection vehicles should haul direct to a disposal site. A depot should be set up for local volume service in front-load bins.*

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<sup>25</sup> <https://www.theglobeandmail.com/news/national/agreement-to-phase-out-shipments-of-ontario-garbage-to-michigan/article1102634/>, accessed September 30, 2019.



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As such, it was determined that using a private hauler would be required to make use of the landfill in Michigan, while it is preferable to use curbside collection vehicles to deliver waste directly to the Twin Creeks Landfill.

### **3.4.2.3 Conclusion**

Based on the discussion and comparative analysis provided above, delivery to the Twin Creeks Landfill was determined to be the Preferred Alternative for waste export. This *Alternative* will be carried as *Alternative 2* in the evaluation of the *Alternatives to the Undertaking*.

## **3.5 Alternatives to the Undertaking**

The TOR indicated that the Alternatives to the Undertaking would include a “Do Nothing” option, expansion of the St. Marys Landfill and an option to export waste to another jurisdiction. Based on the screening presented in Section 3.4, the Alternatives to the Undertaking are as follows:

### **Do Nothing**

As a requirement of the *EA Act*, the ‘Do Nothing’ must be considered. Doing Nothing represents the result of no action being taken to address the Problem Statement and serves as a baseline against which other Alternatives can be compared. Do Nothing has thus been carried forward for comparison to the Proposed Undertaking and Alternative 1 during the EA. The Do Nothing Alternative assumes that waste collection and disposal will continue using current practices as specified under the current ECA and then will cease in September 2022 when the ECA expires.

### **Alternative 1: Expanding the St. Marys Landfill**

This Alternative involves the continued operation of the St. Marys Landfill by the Town following the design, approval and construction of expanded waste disposal areas within the existing 37 ha property. The Town plans to continue to contract BRA to undertake the curbside collection program.

For the purposes of this portion of the EA, this Alternative is assumed to have the following characteristics:

- The expansion would be located entirely within the Town-owned property at 1221 Water Street South (the existing landfill property);
- The landfill expansion area would be designed to have a leachate collection system and stormwater management system, in accordance with typical Environmental Compliance Approval (ECA) requirements;
- Setbacks from property lines will be included; and

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- Typical nuisance control measures will be in place, including:
  - Applying daily cover to control odour and reduce blowing litter;
  - Providing visual barriers, such as berms or tree plantings to block sightlines;
  - Applying dust control measures, as required;
  - Conducting regular inspections by landfill staff to observe and record any operational issues and implementing corrective actions; and
  - Continuing the existing program to record and respond to public complaints and take corrective actions.

### **Alternative 2: Exporting Waste to the Twin Creeks Landfill**

For the purposes of this EA, *Alternative 2* would involve the closure of the St. Marys Landfill for waste disposal. The Bluewater Recycling Association (BRA) would continue to collect municipal waste through their current curbside waste collection program; however, the waste would be transported to another waste disposal site outside the jurisdiction of the Town of St. Marys. For the purposes of this assessment, it was assumed that waste would be taken directly, without using a transfer station, to the Twin Creeks Landfill in Watford, Ontario using existing BRA curbside collection vehicles.

While the Town is not responsible for Industrial, Commercial and Institutional (IC&I) collection or disposal, IC&I users have their waste delivered to the St. Marys Landfill. If it were to close, then all IC&I users would need to have their collection contractors take their wastes to another disposal facility. This could be the Twin Creeks Landfill or another facility.

The Twin Creeks landfill is 301 ha in size with a permitted landfill footprint of 101.8 ha. This site is operated under Environmental Compliance Approval (ECA) No. A032203. The site's name and address were updated by ECA Notice 24, dated May 24, 2019 to:

Twin Creeks Environmental Centre  
5768 Nauvoo Road (Watford)  
Warwick Township, County of Lambton

As noted through the initial screening survey described in Section 3.4, there is substantial available capacity at the landfill. The Twin Creeks Landfill is approved to accept waste from St. Marys. Therefore, it is assumed that no additional permitting or approvals are required by Waste Management of Canada, the owner and operator of Twin Creeks, should this Alternative be selected.

It is assumed that the St. Marys landfill site would continue to operate as a public waste drop-off and composting site for St. Marys residents.

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### **3.6 Study Area**

During preparation of the TOR a specific landfill to be used for exporting waste was not identified. As such, the Study Area for this portion of the EA was not defined.

A reasonable Study Area has been defined by the spatial extent of the proposed Alternatives and the surrounding lands within 120 m of the footprint of each of the Alternatives. This includes the existing St. Marys landfill, the lands around the St. Marys landfill where the expansion could take place, the Twin Creeks Landfill and the travel route between St. Marys and the Twin Creeks Landfill, as shown on Figure 3-1.

Lands immediately adjacent to these features are also included in the Study Area.

### **3.7 Description of the Existing Environment**

The TOR indicated that the evaluation of Alternatives To the Undertaking would be qualitative, based on information from existing data sources or from information to be gathered through the landfill operators' survey. As such, the description of the environment for this phase of the EA is based on publicly available data sources and the survey, described in Section 3.4.1. The TOR indicated that, with respect to Alternative 1, Expansion of the Existing Landfill, data sources will include, but will not be limited to:

- Official Plan documents;
- Background air, surface and groundwater quality reports, studies and previous monitoring results;
- Various operational and technical reports documenting existing landfill operations;
- Complaints history;
- Employment records;
- Statistics Canada data sets; and
- Other sources as identified during the assessment process.

With respect to Alternative 2, Export Waste to Another Jurisdiction, data will primarily be derived from a survey to be administered to the operators of a number of potential waste disposal facilities, expected to be mainly landfills, which may be able to accept the Town's waste.

The TOR also indicated that during the EA, additional field investigations would be undertaken to characterize the environment in greater detail. This more detailed description of the environment is provided in Section 6.6.

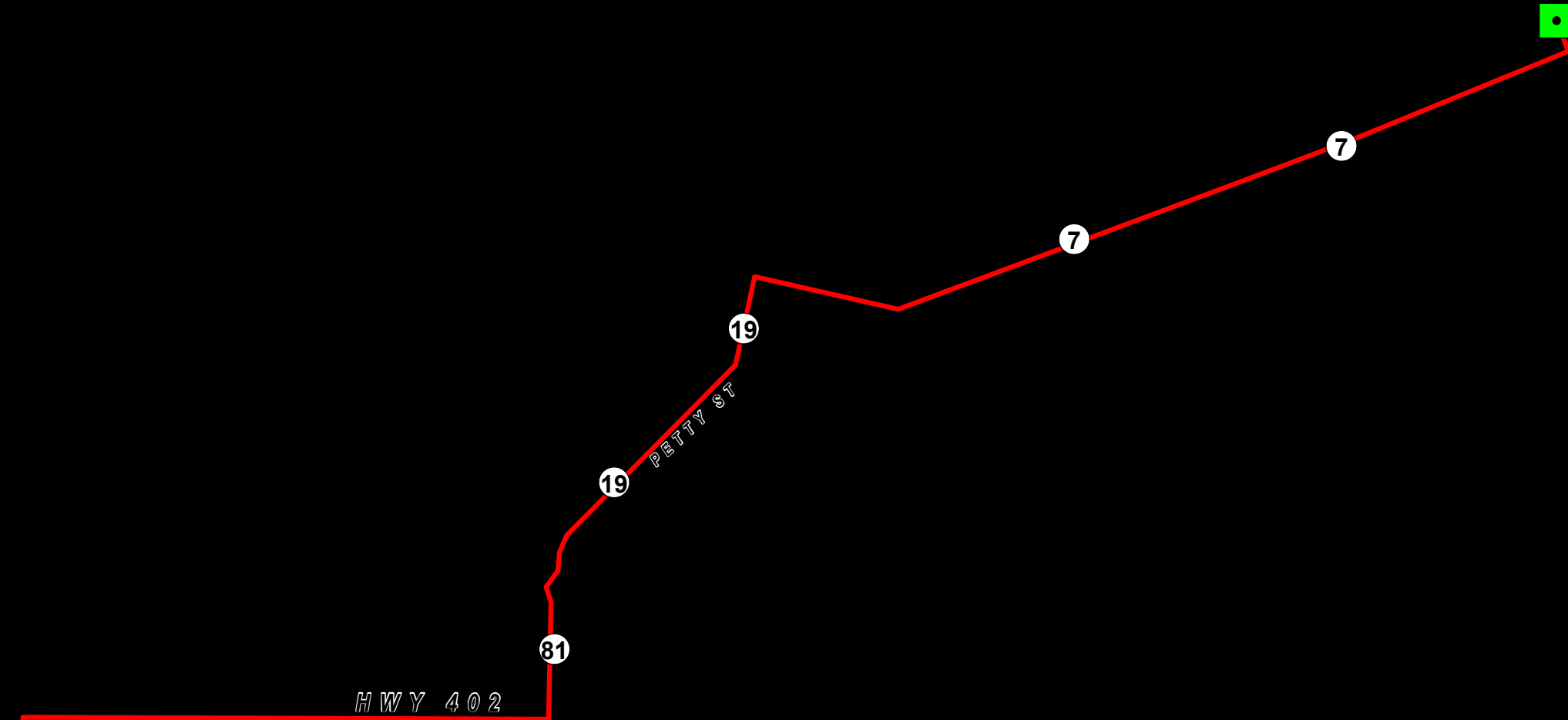
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According to the EA Act, and EA must include, among other items, “a description of... the environment that will be affected or that might reasonably be expected to be affected, directly or indirectly.” Section 6.1(1).

LAKE  
HURON

ST. MARYS  
LANDFILL

TWIN CREEKS  
LANDFILL



Landfill Location



Proposed Route between Landfills

Sources:

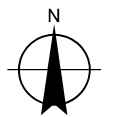
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2. Natural Resources Canada © Her Majesty the Queen in Right of Canada.

Disclaimer:

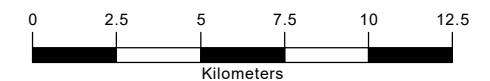
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This map is the product of a Geographic Information System (GIS). As such, the data represented on this map may be subject to updates and future reproductions may not be identical.

Datum: North American 1983	
Coord. System: NAD 1983 UTM Zone 17N	
Projection: Transverse Mercator	
Central Meridian: 81°0'0.00"W	
False Easting: 500,000m	False Northing: 0m
Page Orientation: 0°	Scale Factor: 0.99960



Grid North



Client

TOWN OF ST. MARYS

Figure Title

FUTURE SOLID WASTE DISPOSAL EA  
STUDY AREA

Drawn	Checked	Date	Figure No.
SK	TR	JUNE 2022	
Scale		Project No.	3-1
H 1:225,000		300032339	

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In Section 1(1) of the EA Act, the “environment” is defined as:

- i) Air, land or water,*
- j) Plant and animal life, including human life,*
- k) The social, economic and cultural conditions that influence the life of humans or a community,*
- l) Any building, structure, machine or other device or thing made by humans,*
- m) Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or*
- n) Any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.*

As such, this phase of the EA characterizes the “environment” in accordance with this definition.

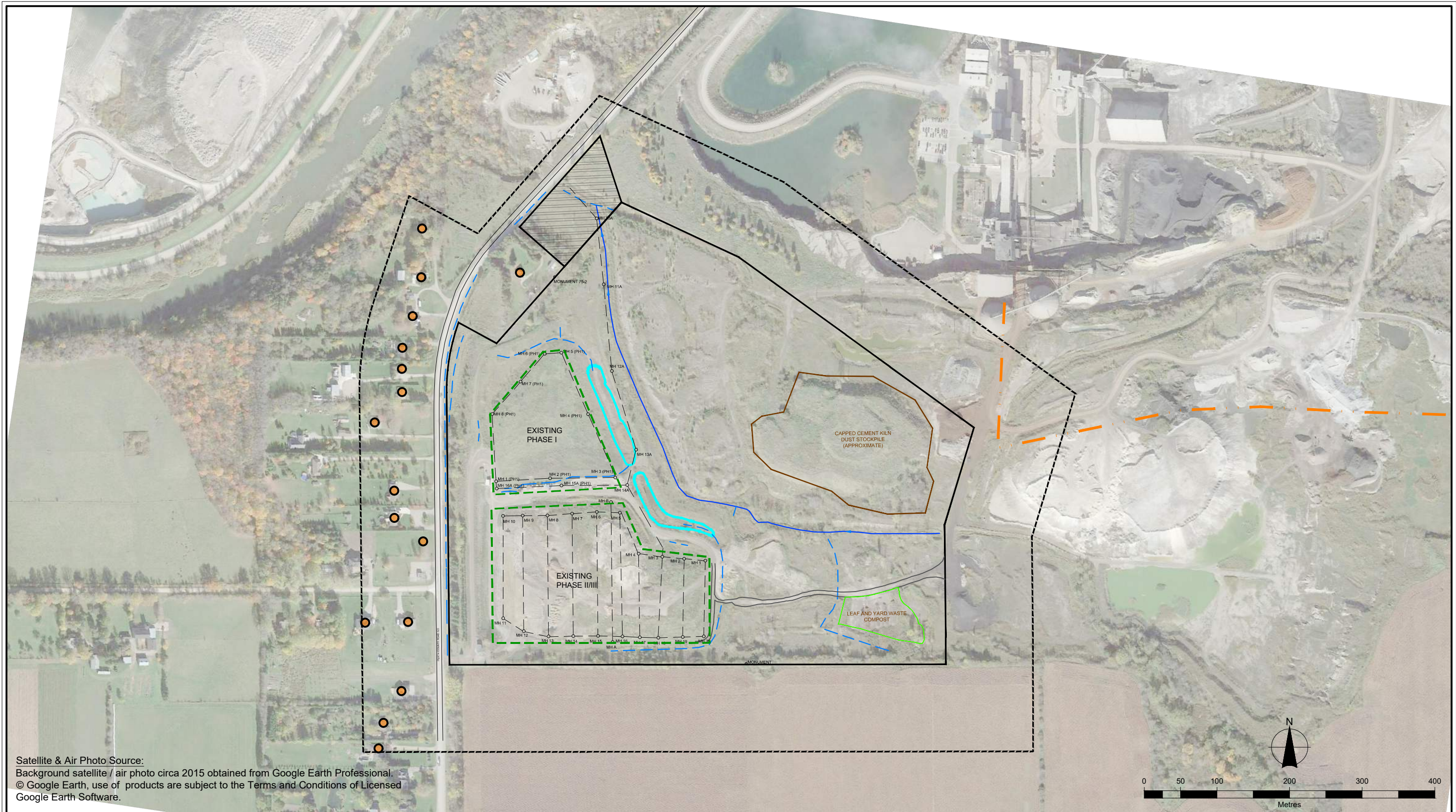
Accordingly, the following sections document the existing environment in the Study Area. The components of the environment, listed above, are organized into the following headings:

- **Built Environment:** including, any building, structure, machine or other device or thing made by humans, any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities.
- **Natural Environment:** including air, land or water, plant and animal life, including human life.
- **Social and Cultural Environment:** including the social, economic and cultural conditions that influence the life of humans or a community.

The following sections describe the existing environment, under these headings, within the Study Area, including the lands associated with the existing St. Marys Landfill property, the Twin Creeks Landfill property and the haul route between St. Marys and Twin Creeks.

### **3.7.1 Existing St. Marys Landfill**

Existing conditions at the St. Marys landfill are shown on Figure 3-2.



Satellite & Air Photo Source:  
 Background satellite / air photo circa 2015 obtained from Google Earth Professional.  
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LEGEND	
	PROPERTY BOUNDARY
	120M BUFFER
	EXISTING WASTE FOOTPRINT
	WATERCOURSE
	DRAINAGE SWALE
	LEACHATE COLLECTION SYSTEM
	STORM WATER MANAGEMENT BASIN

	LEACHATE COLLECTION SYSTEM MANHOLE
	COMPOST AREA
	ELECTRICAL DISTRIBUTION LINES
	RESIDENCE WITHIN 120M OF LANDFILL PROPERTY
	CAPPED CEMENT KILN DUST STOCKPILE (APPROXIMATE)
	RIGHT-OF-WAY AND SEWER EASEMENT



Client  
**TOWN OF ST. MARYS**

Figure Title			
<b>FUTURE SOLID WASTE DISPOSAL EA</b>			
EXISTING LANDFILL AND ADJACENT FEATURES			
Drawn SK	Checked TR	Date JUNE 2022	Figure No.
Scale 1:5000	Project No. 300032339		<b>3-2</b>

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### **3.7.1.1 Built Environment**

#### **Past Uses and Disturbances**

The St. Marys landfill is in the southwestern portion of the Town. The site was originally owned by St. Marys Cement Co. (SMC) now a wholly-owned subsidiary of Votorantim Cimentos based in Sao Paulo, Brazil. Founded in 1912, SMC offices and the cement plant are still located north of the landfill in an area that was formerly a quarry.

Prior to the development of the landfill, the property was licenced by the Ministry of Natural Resources as part of the SMC quarry. Historical aerial photographs show that soil was stripped from the north end of the Site and possibly some rock quarried. The surficial clay was also mined on portions of the Site for use in the cement production. More recently, the north end of the Site was used to stockpile soils and materials associated with cement production.

In 1979, the Town began investigating the feasibility of using a portion of a former clay pit owned by SMC as a municipal landfill site (CRA, 1982). The 16.2 ha property was smaller than the current Site. The property was leased from SMC. At the time, the long-term end use planned for the Site was to become part of a greenbelt buffer zone surrounding the SMC plant (CRA, 2011).

The Site was approved in 1983, landfilling began in December 1984 in the area known as Phase I. The proposed bottom elevation was 315 masl (CRA, 1982 Plan 2). Phase I was completed and finished with final cover in the summer of 1993 (CRA, 2012).

Phase II/III was divided into eight stages, which corresponded with the development of a leachate collection system from east to west. Stage 7 was constructed in the fall of 2010 and began receiving waste in December 2010. A weigh scale was installed in 2012 to assist in operations and filling control. Stage 8 was constructed in late summer 2013 and began receiving waste in September 2013 (Burnside, 2013). Phases I and II/III are shown on Figure 3-2.

The Town purchased additional property from SMC in 2009. ECA No. A150203 dated January 10, 2022 reflects Site ownership by the Town and incorporated additional land from SMC to bring the Site to its current size. The Site is now a 37 ha waste disposal Site with an 8 ha landfill area.

#### **Cement Kiln Dust (CKD) Stockpile**

As described above, the northeast portion of the landfill property was purchased by the Town from SMC in 2009. The land in this area contains a Cement Kiln Dust (CKD) stockpile from historic SMC operations, as shown on Figure 3-2. The CKD stockpile has been in place for approximately 30 years. The CKD stockpile was studied by Golder in 2005. A copy of the report is provided in Appendix C. The study found that the total



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volume of CKD is estimated to be approximately 350,000 to 400,000 m<sup>3</sup>. Golder compared samples of the material to the 2004 *Soil, Groundwater and Sediment Standards; Table 3: Full Depth Site Conditions in Non-Potable Groundwater, Industrial/Commercial Use*. The results indicated that the material generally did not exceed the Table 3 standards for petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCB) or polycyclic aromatic hydrocarbons (PAH). There was one minor exceedance for cadmium; however, all other metals were below specified limits. Groundwater samples taken from two monitoring wells in the CKD stockpile were tested for inorganics, PCB and PAH. Samples were found to be alkaline with a pH of 10 and high in sulphate, chloride, potassium and sodium. There were no exceedances of Table 3 standards apart from selenium and silver in which the exceedance was due to a detection limit higher than the standard. One groundwater sample was submitted for TCLP analysis with no exceedances.

### **Approved Waste Collection**

The ECA approved the Site for the collection and diversion of recyclable waste including Waste Electrical and Electronic Equipment (WEEE), acceptance and transfer of Municipal Hazardous or Special Waste (MHSW), and the composting of leaf and yard waste.

### **Leachate Collection**

The Phase I leachate collection system is a perimeter system consisting of perforated collector pipes connected between manholes. It was installed as a contingency system to control mounding within the waste.

The Phase II/III collection system incorporates perimeter collectors as well as lateral collectors passing beneath the waste. The system was extended as each new Phase was constructed. Both the perimeter system of Phase I and the underdrain system of Phase II/III restrict the movement of leachate beyond the landfilling footprint and control the leachate mound within the waste.

Initially, leachate from Phase I was collected in a holding tank near maintenance hole number 1 in Phase I (MH1, PH1). Leachate from Phase II/III was collected in a holding tank near MH3. In 1997, a sewer was installed to gravity drain the leachate directly from the leachate collection systems to the Town's sanitary sewer system. The Phase I leachate holding tank was decommissioned in 2008. The Phase II/III leachate holding tank was used to connect the Phase II/III leachate collection system to the gravity sewer. It contains a valve to shut off leachate flow for maintenance of the sewer line. There is no dedicated leachate storage tank on-site; however, the site itself can provide leachate storage as does the collection system. Leachate is directed to the Town's wastewater treatment plan (WWTP). The actual amount of leachate directed to the WWTP is small relative to the capacity of the plant. It is estimated that Phase I and Phase II/III produce

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an average of 24.5 m<sup>3</sup>/day of leachate. By comparison, the WWTP has a Rated Capacity of 5,560 m<sup>3</sup>/day. This means the landfill leachate is approximately 0.4% of the WWTP's rated capacity.

#### Drainage and Stormwater Features

The topography of the site today is a result of not only the landfill, but historical activities connected to SMC operations. These activities include clay mining over most of the site, overburden stripping and stockpiling east of the watercourse, cement kiln dust stockpiling and rerouting of the watercourse.

The Site has been impacted by industrial activity since the 1960's. It was around that time that the quarry operation to the north began encroaching into what is now the landfill Site. It is likely that there were impacts to the groundwater prior to that time from quarry dewatering. Most of the Site was then disturbed by the SMC borrow pit that mined clay for cement manufacturing. SMC personnel indicate that borrow pit operations at the Site ended in 1977. By this time none of the site was in a natural state.

The highest elevation on the Site today is the CKD stockpile at around 334 m amsl at its highest point. The elevations of the fill areas are approximately 327 m for Phase I and 326 m amsl in Phase II/III. The lowest elevations on the Site occur along the watercourse. This channel enters the east side of the Site at an elevation of approximately 310 m amsl and exits at the northwest end below 309 m amsl. The elevation changes between SP1-10, the surface water station at the east side of the Site and SP3-93, near the north end, is approximately 1.5 m. This is over a distance of about 660 m resulting in a grade of 0.2%.

Water Street S<sup>26</sup> is a topographic ridge on the west side of the Site and acts as a drainage divide. West of the ridge, runoff flows west toward the Thames River. East of the road, runoff is eastward toward the stormwater retention basins and the watercourse.

Surface water from the complete landfill areas is directed through a series of perimeter ditches and swales around the landfills and along the interior roadways. The ditches and swales convey the runoff to two stormwater retention basins. These stormwater basins attenuate the peak flows during storm events and allow sedimentation. The 2012 Annual Report noted that riser pipes were replaced, and sediment was removed from both stormwater basins during the landfill earthworks in October and November 2007. As part of the Site's ongoing monitoring, swales, culverts and outlets are inspected regularly to ensure surface water flow.

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<sup>26</sup> Water Street S. runs through the Town of St. Marys and becomes Perth Road 123 roughly 470 m north of the landfill entrance. However, the landfill's address is listed as Water St. S. and the stretch adjacent to the landfill is locally referred to as Water St. S. Therefore, for the purposes of this EA, the stretch of road along the western boundary of the landfill is referred to as Water St. S.

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The stormwater basins outlet to the watercourse via control features. The watercourse leaves the Site by a culvert under Water St. S. It eventually discharges into the Thames River, approximately 500 m downstream of the Site.

Upstream of the Site, this watercourse divides into two branches (see Figure 3-2). The north branch skirts the south edge of the SMC quarry and drains industrial properties and agricultural fields east of the Site. The south branch occupies a vegetated channel between the agricultural fields and the excavated/filled areas on the SMC property. It drains industrial and agricultural land further south and east before crossing James Street and Elginfield Road (Highway 7). In total, approximately 370 ha of land drain through the watercourse on the landfill property.

Site reconnaissance in 2015 indicated that site drainage is less defined east of the watercourse. Surface water runoff from the relatively steep slopes of the CKD stockpile flows radially in all directions, including west toward the watercourse and north toward the quarry. There are relatively flat areas between the stockpile and the watercourse with isolated water-filled depressions, some of which contain cattails.

### **Site Size**

Currently, the landfill property is 37 ha in size with 8 ha approved for landfilling. Waste for disposal is accepted from the Town of St. Marys only. The majority of waste collected is from the large IC&I base within the Town as well as from household curbside collection. Private waste companies generally dispose of waste at the St. Marys Landfill with the exception of some specialized waste that is taken to other diversion or disposal locations within the region.

There is current no landfill gas collection system in place.

### **Traffic Conditions**

The haul routes for the site are primarily from the north and south along Water St. S./Perth Road 123

- Adjacent to the landfill and south of the landfill, Water St. S. (also referred to as Perth Road 123) is a two-lane arterial road, which has a posted speed of 80 km/hr in the landfill access area. This road is under the jurisdiction of the County of Perth.
- Roughly 470 m north of the landfill entrance, the road becomes under the jurisdiction of St. Marys. The road has a posted speed of 50 km/hr.

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The above haul routes connect to the tar and chip driveway<sup>27</sup> which serves as the St. Marys Landfill access route, located on the east side of Water Street S. The entrance of the access road works to form a T-intersection with Water Street S and is stop-sign controlled.

### 3.7.1.2 Social and Cultural Environment

#### Population

The Town of St. Marys has a population of a 7,265 according to the 2016 Census. Census data indicates that from 2001 to 2006, the Town grew from 6,293 to 6,617 residents (Statistics Canada, 2006). Between 2011 and 2016, the Town population changed from 6,655 to 7,265 (Statistics Canada, 2016).

#### Land Use

The site is surrounded by the SMC plant to the northeast and northwest, agricultural fields to the south, and a number of rural residences and farms to the west.

The landfill property is identified as an Environmental Constraint area, in accordance with the Town's Official Plan. Surrounding land uses within the Town include Extractive Industrial uses to the north, northeast and west that encompass the operations of SMC. One residence is situated on the east side of Water Street S. This residence is surrounded on its north, east and west property limits by the landfill property. This property is identified for Extractive Industrial purposes, according to Schedule A, Land Use Plan of the Official Plan. A small area of floodplain lands lies on either side of the Thames River.

The Township of Perth South lies adjacent to the western and southern boundaries of the landfill. The Township does not have its own Official Plan and, instead, defers to the County of Perth Official Plan. According to Schedule A of the Perth County Official Plan, lands to the immediate south and east are designated as Licensed Quarry Pit/Limestone Resource and Agricultural Lands with a small amount of Natural Resources/Environment adjacent to the Thames River.

In total, there are 16 residences within 120 m of the landfill. These are rural residential properties, as shown on Figure 3-2.

Until recently, SMC maintained an aggregate extraction license for a portion of the lands it had sold to the Town. Per the SMC Surrender of Land document, under Aggregate License 4494 dated September 21, 2016, the surrendered lands were 19.45 ha and

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<sup>27</sup> The driveway was upgraded to tar and chip in 2019. The air modelling for the Site was based on the previous gravel driveway surface conditions. The tar and chip driveway is an improvement compared to the modelled conditions.

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4.37 ha in size for the existing and potential landfill areas, respectively. This surrender was approved under Section 16(2) of the *Aggregate Resources Act* by the Ministry of Natural Resources and Forestry on November 8, 2016. The entire St. Marys Landfill property is now unencumbered by the aggregate extraction license.

### **Economic Conditions**

The landfill currently employs one full-time staff position, one part-time staff position and six staff who work occasionally, as follows:

- Site Attendant – a full-time position;
- Compactor Operator – a regular part-time position;
- (Five) Equipment Operators – as occasionally needed;
- Environmental Services Supervisor – a full-time position that provides site operations supervision; and
- Supervisor of Operations – as occasionally needed.

The Town of St. Marys 2016 budget attributed total staff salary for these employees as approximately \$106,000. For clarity, the Supervisor of Operations spends only a portion of their time dealing with the existing landfill operations. This is also true for others noted “as occasionally needed”. As a result, only a portion of their salaries are attributed to the landfill operations in the budget. The full amount of the site attendant’s salary is included.

St. Marys is home to a significant industrial sector, which represents a substantial employment and economic driver at the local and regional level. St. Marys is strategically located, being approximately 40 km from London (2011 Census population 366,150) and 20 km from Stratford (2011 Census population 30,886). This means there is a large commuter base in the area. As a result, the Town is an important contributor to the economic and social stability of the surrounding municipalities and Southwestern Ontario.

Economic drivers in the Study Area primarily include the SMC operation and agricultural uses to the south and west of the landfill site. SMC is a key industry for the Town. The company was founded in 1912 and is now part of a global consortium. As stated in The Town of St. Marys Economic Prosperity Community Improvement Plan (2015), SMC is an anchor business within the Town and the Region, attracting clients throughout the Great Lakes Region. The Town’s economic stability is strengthened by the presence of this industry as well as a strong agricultural sector. As noted in the Town’s Community Improvement Plan, the Town believes that these are two key areas that can be built upon to retain and attract firms from other diverse sectors. These industries are therefore crucial sectors and all potential impacts to these must be considered when determining future developments.

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### **Archaeological and Cultural Heritage Features**

There are no known archaeological sites on, or in the vicinity of, the landfill property, according to Town records. Schedule D of the Town's Official Plan identifies a number of Heritage Conservation Sites. None are near the landfill, as shown in Figure 3-3. Additional cultural heritage features may be present and will be studied further should expansion of the St. Marys Landfill be selected as the preferred alternative.

### **Treaties and Traditional Territory**

Indigenous peoples made use of the lands in the Study Area for thousands of years before European contact. The Thames River was of particular importance as a travel and trade route and source of fish. The landfill property has not been used directly by Indigenous communities in recent times; however, its location in close proximity to the Thames River gives it historical significance. Any specific evidence of past use has been erased by current quarry and landfill alternations to the landscape. It can be assumed that the landfill site could have been used for hunting, gathering and/or access to the Thames River. There are no records or evidence of specific occupation by a permanent or seasonal village.

There are no current uses of the landfill property for traditional purposes or resources. However, The Thames River and its banks continue to be used by Indigenous communities for hunting, gathering of traditional and medicinal plants and for spiritual purposes.

The St. Marys Landfill is within the lands covered by Treaty 29 (1827). The modern signatories to this treaty are:

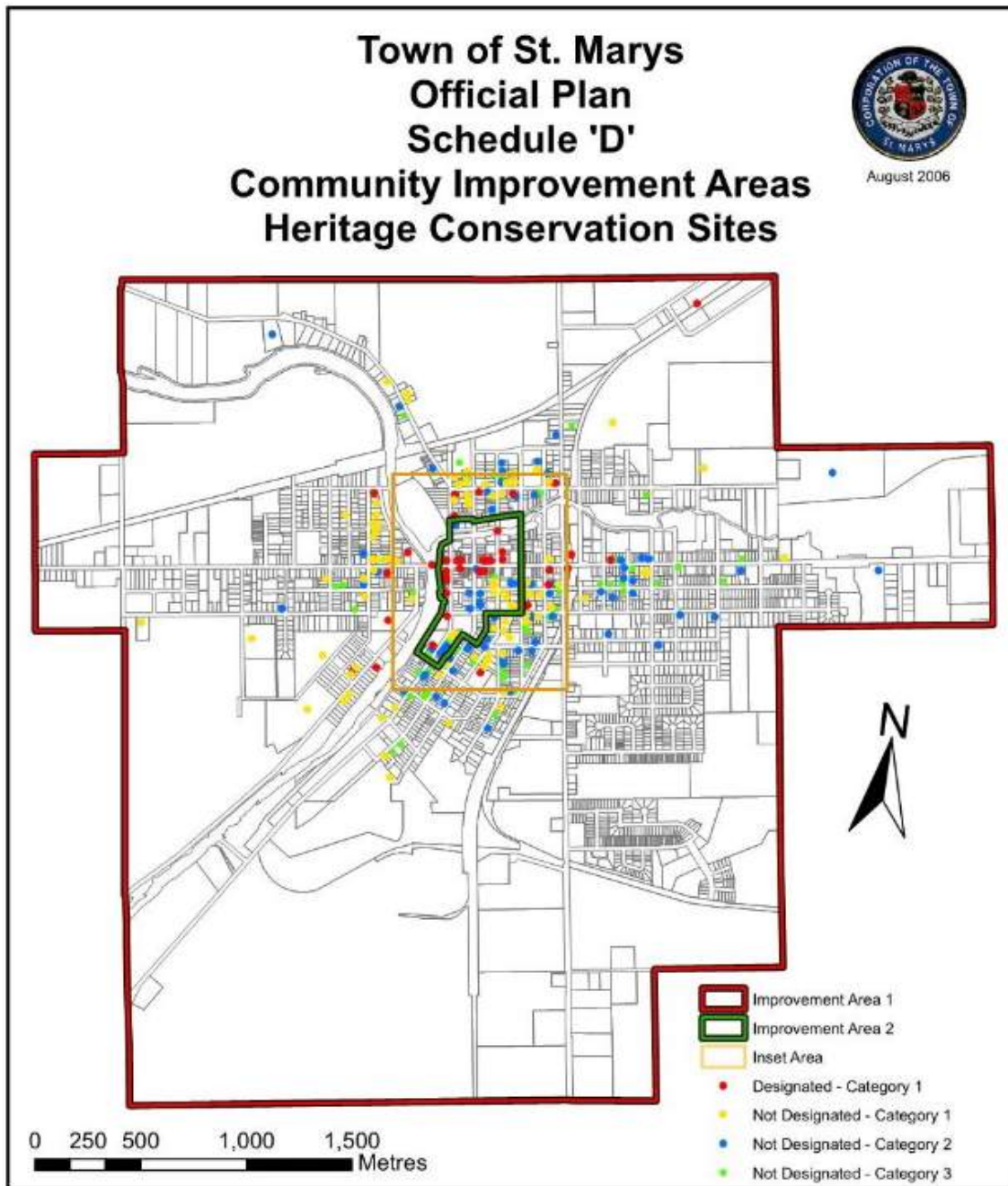
- Aamjiwnaang First Nation (formerly Chippewas of Sarnia First Nation);
- Caldwell First Nation;
- Chippewas of Kettle & Stoney Point;
- Chippewas of the Thames First Nation; and
- Walpole Island First Nation.

The Haudenosaunee Development Institute (representing the Haudenosaunee Confederacy) and Six Nations of the Grand River also have an interest in the Site due to its location within the area covered by the Nanfan Treaty.

The Indigenous communities listed above are believed to have Indigenous Rights, Treaty Rights, or both, affecting the subject property. However, this list may not be exhaustive.

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Figure 3-3: Schedule D of the Town of St. Marys Official Plan



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### **3.7.1.3 Natural Environment**

The Thames River is located approximately 250 m to the northwest of the site. An unnamed watercourse runs through the centre of the site and discharges to the Thames River. There is a large, perched culvert along the unnamed watercourse at Water Street, limiting fish migration from the Thames River into the watercourse. The Thames River provides habitat for a Species Concern mussel species, several kilometers downstream of the unnamed watercourse outlet. Farther downstream, additional critical habitat for an Endangered mussel species is also present. The unnamed watercourse provides indirect fish habitat.

As noted, the northeast portion of the landfill property was purchased by the Town from SMC in 2009. The land in this area contains a CK) stockpile from historic SMC operations. The CKD stockpile has been in place for approximately 30 years. The cap and side slopes are well vegetated, and no erosion has been noted. The unnamed watercourse wraps around the south and west sides of the stockpile. Water quality samples from the watercourse since 1985 (as part of the landfill monitoring) have not detected an impact from the landfill or the CKD stockpile. The water quality upstream and downstream is typically similar. Monitoring of benthic invertebrates had been part of the landfill's annual monitoring program until 2008. At that time, it was determined that benthic monitoring would no longer be required because upstream and downstream conditions were similarly impaired and there was no clear value in continuing the program. Details are provided on page 2 of the cover letter to the Town's application to amend the site's Certificate of Approval in 2008. A copy of the letter is provided in Volume IV, Appendix B.

Several small-treed areas and wet depressions are scattered throughout the landfill site. Other natural features on, and around, the site are limited due to the nature of the existing landfill and the historic extraction operations. Some grassland areas are present on inactive and closed landfill cells. These grassland areas may provide habitat for Eastern Meadowlark, a Threatened species. Protection under the ESA applies to grassland habitat for Eastern Meadowlark. Authorization under the ESA (conditional exemptions under O.Reg. 830/21) is required for any impacts to Eastern Meadowlark or its habitat.

Natural woodland areas are present along the Thames River, beyond the Site itself.

### **Source Water Protection**

The St. Marys Landfill is in the Thames-Sydenham & Region Source Protection Area. Mapping supplied by the Upper Thames River Valley Conservation Authority showed that the landfill is not within any Wellhead Protection Areas or Intake Protection Zones for municipal water supplies. There are no Significant Groundwater Recharge Areas mapped on the site. An area in the northeast corner of the landfill site is mapped as



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Highly vulnerable Aquifer. This is likely the result of the SMC quarry to the north having removed the protective overburden above the bedrock aquifer during the quarry operation.

The landfill monitoring program includes five residential wells on neighbouring properties. No concerns with drinking water quality have been identified to date by the landfill's monitoring program.

### **Air Quality**

The air quality around the facility is typical of a small landfill. There are 16 residences ("receptors") along the west side of Water Street S. with additional receptors further away to the north and south. To the east, the nearest residential receptors are on James Street South which is more than 1 km from the landfill.

According to landfill records, the residents around the landfill complain about odours infrequently. Road dust is controlled and dust from the working face does not impact the neighbours. All contaminants meet their regulated criteria at the property line, based on annual monitoring report findings.

#### **3.7.2 Twin Creeks Landfill**

The existing conditions at the Twin Creeks landfill are shown on Figure 3-4.

This site is operated under Environmental Compliance Approval (ECA) No. A032203. The site's name and address were updated by ECA Notice 24, dated May 24, 2019, to:

Twin Creeks Environmental Centre  
5768 Nauvoo Road (Watford)  
Warwick Township, County of Lambton

##### **3.7.2.1 Built Environment**

The Twin Creek landfill is located outside of the community of Watford. The landfill began operation in 1972. Waste Management of Canada Corporation (WM) has owned and operated the landfill since 1996. In 2008, after a nearly 12-year technical study and public consultation period, the previously named Warwick Landfill was approved for expansion. Construction of the infrastructure for the Expansion Site began in August of 2008 and continued into the fall of 2009. Waste was first deposited into the Expansion Site in November of 2009.

The landfill property is 301 ha with an approved landfilling area of 101.8 ha. The site accepts residential and ICI-related waste from across Ontario. According to the MECP's

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Large Landfill Site list<sup>28</sup>, The Twin Creeks Landfill was the second largest landfill in Ontario in 2011, with an approved disposal capacity of 26,508,000 m<sup>3</sup>.

For comparison, the St. Marys Landfill property is 37 ha (12% of Twin Creeks), the existing waste footprint is 8 ha (8% of Twin Creeks) and the existing approved disposal capacity, including all ECA Notices, is 453,050 m<sup>3</sup> (1.7% of Twin Creeks). The expansion envisioned by this EA would result in a total St. Marys landfill capacity of 1,088,000 m<sup>3</sup> or 4.1% of Twin Creek's capacity.

According to the information provided by Waste Management of Canada Corporation through the private landfill operators survey, described in Section 3.4, the Twin Creeks Landfill includes the following features:

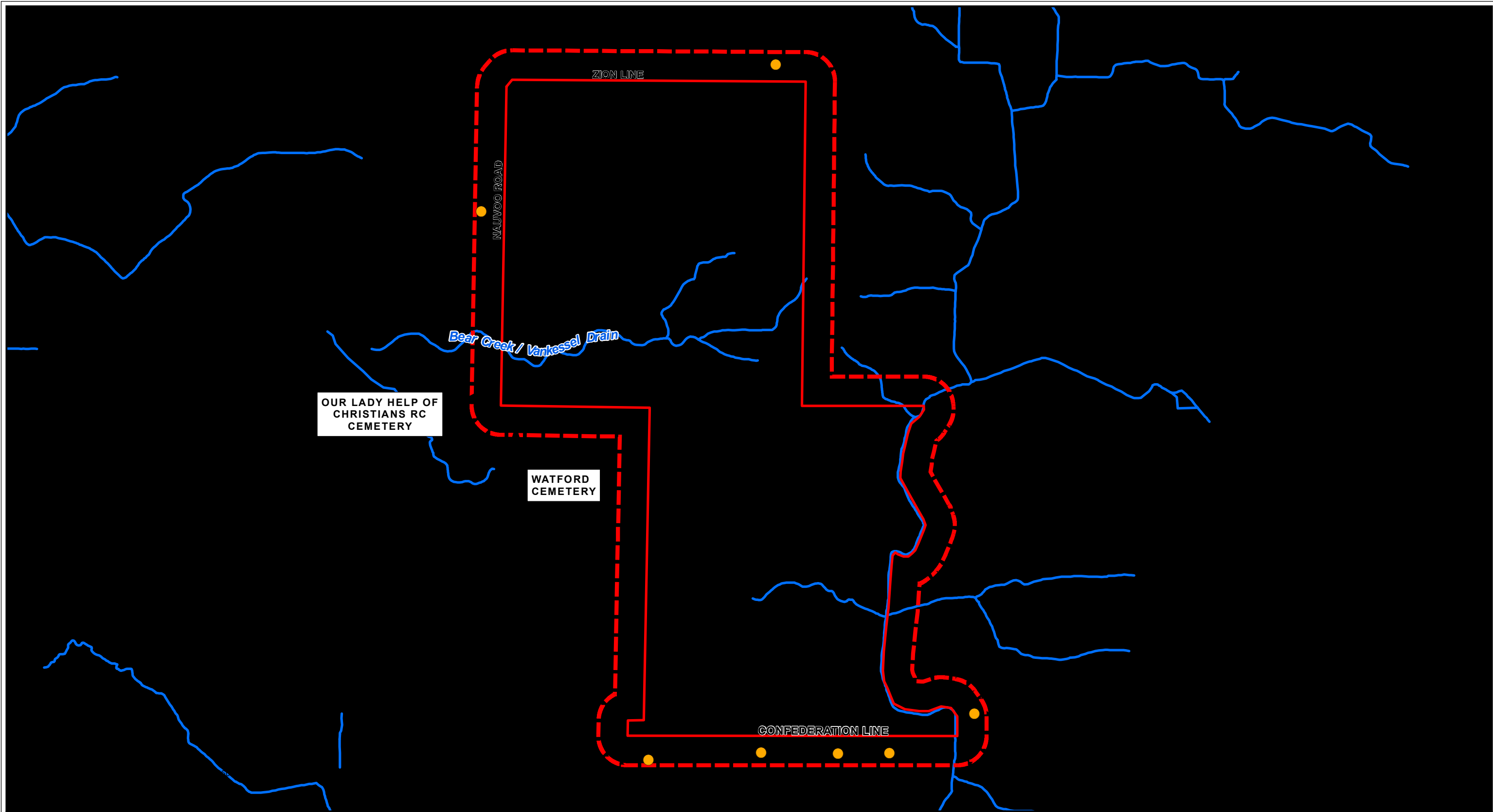
- Full landfill gas collection, including permanent and temporary vertical and horizontal wells. Collection efficiency is estimated at 85%.
- The current landfill gas destruction system is a flare; however, a landfill gas to energy system is in the planning stages.
- Leachate is collected and disposed to willing municipal licensed receivers. There is also seasonal disposal to an onsite poplar plantation.

It is noted that the survey sent to Twin Creeks operators was completed in April 2015. At that time, it was estimated that the landfill had 25 years of capacity remaining. In 2017 the landfill has received an ECA Notice allowing for double its previous fill rate. The Environmental Screening Report<sup>29</sup> completed to support the increased fill rate indicates that the landfill will now reach its approved capacity by 2034 rather than 2047. Thus, at the date of this report, the Twin Creeks Landfill has only 15 years of capacity remaining.

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<sup>28</sup> <https://www.ontario.ca/data/large-landfill-sites>, data current to October 21, 2011 (accessed October 30, 2019).

<sup>29</sup> Source: [http://twincreekslandfill.wm.com/documents/Environmental%20Screening%20Report%20-%20Twin%20Creeks%20Landfill%20Proposed%20Fill%20Rate%20Increase%20\(March%202017\)%20\(1\).pdf](http://twincreekslandfill.wm.com/documents/Environmental%20Screening%20Report%20-%20Twin%20Creeks%20Landfill%20Proposed%20Fill%20Rate%20Increase%20(March%202017)%20(1).pdf)



**Legend**

- Residence within 120m of Landfill Property
- Property Boundary - 120m Buffer
- Property Boundary
- Watercourse



Figure Title  
**FUTURE SOLID WASTE DISPOSAL EA  
 TWIN CREEKS LANDFILL  
 EXISTING ENVIRONMENT**

Client  <b>TOWN OF ST. MARYS</b>	Drawn	Checked	Date	Figure No.
	SK	TR	JUNE 2022	
	Scale H 1:15,000	Project No. 300032339		<b>3-4</b>

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### **3.7.2.2 Social and Cultural Environment**

#### **Land Use and Socio-economic Conditions**

Surrounding lands are primarily agricultural with a small number of commercial properties along Nauvoo Road. Two small cemeteries are located to the immediate southwest of the site. There are approximately seven residences within 120 m of the landfill, as shown on Figure 3-4.

According to the information provided by Waste Management of Canada Corporation through the private landfill operators survey, described in Section 3.4.1, the Twin Creeks Landfill has a number of agreements in place to provide benefits to stakeholders, including:

- A Community Host Agreement with Warwick Township;
- Impact Benefit Agreement with Walpole Island First Nation;
- Impact Benefit Agreement with landfill neighbours;
- Property Value Protection; and
- A local liaison committee.

Employment levels at the landfill are unknown.

#### **Archaeological and Cultural Heritage Resources**

With the exception of the two cemeteries adjacent to the landfill, the presence of archaeological or cultural heritage resources is unknown. It is assumed that because the landfill has been approved any concerns with archaeological and cultural resources have been addressed.

#### **Treaties and Traditional Territory**

Indigenous peoples made use of the lands in the Study Area for thousands of years before European contact. Bear Creek was likely used a travel and trade route and source of fish. The landfill property has not been used directly by Indigenous communities in recent times; however, its location in close proximity to Bear Creek gives it historical significance. Bear Creek and surrounding natural areas may continue to be used by Indigenous communities for traditional purposes.

Similar to the St. Marys Landfill, the Twin Creeks Landfill is also within the lands covered by Treaty 29 (1827). The modern signatories to this treaty are:

- Aamjiwnaang First Nation (formerly Chippewas of Sarnia First Nation);
- Caldwell First Nation;

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- Chippewas of Kettle & Stoney Point;
- Chippewas of the Thames First Nation; and
- Walpole Island First Nation.

The Haudenosaunee Development Institute (representing the Haudenosaunee Confederacy) and Six Nations of the Grand River also have an interest in the Site due to its location within the area covered by the Nanfan Treaty.

The Indigenous communities listed above are believed to have Indigenous Rights, Treaty Rights, or both, affecting the subject property. This list may not be exhaustive.

- Traffic Conditions

The landfill is accessed through an entrance off County Road 79. The landfill currently results in 19 landfill-related vehicles per hour travelling along various haul routes. It is assumed that between 1/3 and half of these would travel from the west along Highway 402 to the landfill<sup>30</sup> along a similar route that would be taken by St. Marys waste collectors, should this alternative be selected.

### **3.7.2.3 Natural Environment**

A watercourse, known as the Vankessel Drain runs from the landfill to the west, where it discharges to the Bear Creek system. Current water quality conditions in the Vankessel Drain are not known. Bear Creek is known to provide critical habitat for a number of Endangered mussel species.

There are several large woodlands to the southeast and southwest of the landfill, with portions on the landfill site itself.

### **Source Water Protection**

The Twin Creeks Landfill is located in the Thames-Sydenham and Region Source Protection Area. Mapping for the 2015 Assessment Report shows that the landfill is not within any Wellhead Protection Areas or Intake Protection Zones for municipal water supplies. There is a large Significant Groundwater Recharge Area with a vulnerability score of 2 mapped east of the site and covers the southeastern part of the landfill property.

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<sup>30</sup> Based on a discussion of increased truck traffic in Section 1.3 of the Environmental Screening Report (2017).

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It is assumed that some of the neighbouring residences may have individual wells as a potable water source. Impacts to drinking water quality are not known; however, it is assumed that if any concerns have been identified, they have been addressed as required under the landfills' ECA.

### **Air Quality**

According to the Twin Creeks Landfill Emission Summary and Dispersion Modelling (ESDM) Report, dated March 1, 2017 prepared by RWDI as part of an Environmental Compliance Approval (ECA) amendment application, predicted ground level concentrations for the contaminants emitted at the Twin Creeks landfill do not exceed 50% of the MECP criteria and majority are well below 10%. At the time of the ESDM report, there were no odour complaints from the surrounding residents. However, there were several odour related complaints in 2018 and 2019. Once these issues are resolved at the Twin Creeks landfill, an addition of the waste from St. Marys landfill will have little impact on the emissions considering the size of the Twin Creeks landfill.

#### **3.7.3 Haul Route Between St. Marys and the Twin Creeks Landfill**

Existing conditions along the haul route were shown on Figure 3-1.

The most likely route to the Twin Creeks facility would follow Hwy 7 to Ailsa Craig then County Road 19 to Hwy 402 with a final turn on County Road 79 S to the waste facility. The route is approximately 79.5 km. Except for the collection routes through the Town of St. Marys, the route noted includes County Roads maintained by Perth and Lambton Counties and Hwy 402, a Provincial highway.

### **Land Use and Socio-economic Conditions**

The route is entirely through rural landscapes with agricultural and agricultural-related businesses being the primary economic driver. A small number of other uses are present (i.e., a golf course, churches, a group home, small businesses and restaurants, bed and breakfast establishments and a campground). The route also passes through the communities of Ailsa Craig and Nairn in the Municipality of North Middlesex.

### **Archaeological and Cultural Heritage Resources**

The presence of any archaeological or cultural heritage resources along the haul route is unknown.

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### **Traffic Conditions**

Approximately 389,400 tonnes of waste will require disposal during the 40-year planning period (see Section 3.1.3.7). It is estimated that approximately 90 trucks per week would be required to deliver waste to the Twin Creeks Landfill. BRA's trucks currently travel from their depot in South Huron, to St. Marys, to the St. Marys Landfill and then back to the depot. This is a distance of 36 km if we ignore the collection route and assume the truck does not complete additional collections in St. Marys or in other BRA communities after tipping at the St. Marys Landfill. Delivering to the Twin Creeks Landfill adds 107 km to each collection vehicle's trip. Based on trucking industry estimates <sup>31</sup>, at least 21,000 tonnes of CO<sub>2</sub>e would be generated; similar <sup>32</sup> to the greenhouse gases emitted by 4,470 cars operated for a year (or 112 cars operated for each year of the EA Planning Period).

### **Natural Environment**

The route crosses the Thames River and a number of other smaller watercourses. Some woodlots and wetlands are present along the route. No Provincially Significant Wetlands, Areas of Natural and Scientific Interest, Conservation Areas or other designated features are present along the route.

### **Source Water Protection**

The haul route begins and ends in the Thames-Sydenham & Region Source Protection Area, with the centre section (from approximately Elginfield to the 402) crossing the Ausable-Bayfield Source Protection Area. The haul route does not cross any Wellhead Protection Areas or Intake Protection Zones. It passes through some Significant Groundwater Recharge Areas.

### **Air Quality**

There are no significant industries along the haul route. Emissions primarily emanate from traffic and agricultural operations in the area. Air quality is typical of Southern Ontario conditions.

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<sup>31</sup> Estimates are based on <http://www.equipmentworld.com/owning-and-operating-costs-8> (accessed April 28, 2017), "Guidelines for Measuring and Managing CO<sub>2</sub> Emission from Freight Transport Operations", Cefic and ECTA, March 2011, and [http://data.ec.gc.ca/data/substances/monitor/canada-s-official-greenhouse-gas-inventory/Emission\\_Factors.pdf](http://data.ec.gc.ca/data/substances/monitor/canada-s-official-greenhouse-gas-inventory/Emission_Factors.pdf) (accessed November 4, 2019).

<sup>32</sup> <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references> (accessed November 4, 2019).

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### 3.8 Evaluation of the Net Effects of the Alternatives to the Undertaking

The evaluation of *Alternatives to the Undertaking* is summarized in the following sections.

#### 3.8.1 Evaluation Criteria

The TOR identified the environmental components and criteria that could be used in both the evaluation of Alternatives To and the evaluation of Alternative Methods. The TOR specifically noted that the *Alternatives to the Undertaking* will be subject to a qualitative screening based on the following criteria:

- Natural Environment, including:
  - Atmosphere (air quality, odour, noise, etc.);
  - Geology and hydrogeology;
  - Surface water (quality and quantity); and
  - Biology (terrestrial, aquatic).
- Cultural Environment<sup>33</sup>, including:
  - Archaeological resources;
  - Built Heritage; and
  - Cultural Heritage Landscapes.
- Socio-Economic Environment:
  - Transportation routes;
  - Land use;
  - Employment effects;
  - Economic conditions (local business with a direct link to the landfill or its operations); and
  - Aesthetics/Enjoyment of life.
- Indigenous Connections to the Land:
  - Traditional uses;
  - Historical uses;
  - Land claims/treaty rights/Indigenous rights; and
  - Other areas of interest.
- Financial Factors:
  - Capital costs; and
  - Operational and maintenance costs.

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<sup>33</sup> Criteria listed in the TOR were “Buildings, Viewscapes and Archaeological Resources”. Criteria were changed upon advice from MTCS (Now MHSTCI).



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- Technical Factors:
  - Technical ability to carry out each alternative.

Detailed indicators and evaluation metrics were not identified in the TOR as the assessment was intended to primarily be a high-level, qualitative screening, based only on information from existing data sources and information to be gathered through a short survey. As such, a qualitative discussion regarding each of the above noted criteria is provided in the following sections. The evaluation considers impacts under current conditions (i.e., baseline) and the net effects of the “Do Nothing” Alternative.

Alternatives 1 and 2 are then compared to the Do Nothing Alternative based on a qualitative description of the number of post-mitigation impacts of high magnitude, long duration, repetitive frequency and which have a limited chance to be reversed. These net effects are then compared using the following descriptors:

- **Preferred** – preferred over the Do Nothing Alternative.
- **Somewhat preferred** – somewhat preferred over the Do Nothing Alternative.
- **Equally preferred** – equally preferred to the Do Nothing Alternative.
- **Somewhat less preferred** – somewhat less preferred than the Do Nothing Alternative.
- **Less preferred** – less preferred than the Do Nothing Alternative.

The preferred alternative overall is the Alternative that was identified based on the sum of the rankings in each category. No criteria were given greater weight or significance than others.

The qualitative screening is provided in the following sections.

### **3.8.2 Natural Environment**

#### **3.8.2.1 Potential Impacts to Atmosphere**

Potential impacts to the atmosphere, including impacts associated with air quality, dust, odour, and noise are as follows:

Alternative 1: Expand the St. Marys Landfill:

- With the alternative to expand the St. Marys landfill, the quantity and rate of waste to be landfilled will not change in the short-term. As population increases over the next 40 years, some additional increase in waste is expected as a result of population growth. As such, emissions and noise are not expected to increase in the short-term and will increase minimally in the long-term. Thus, greenhouse gas emissions as well as other MNOCs, dust and particulates are expected to be maintained at current levels which cause few complaints and meet regulatory criteria. There have been no noise complaints recorded in the Annual Monitoring reports for 2013 through 2018

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(inclusive). A single noise complaint was received in 2019 according to Town records. Although there may be a minimal increase in noise and dust during the construction period associated with the expansion, noise impacts overall are expected to be minimal.

- Current air quality and odour conditions at the St. Marys Landfill are below acceptable limits set by the Province. As the rate of waste disposal will only minimally increase in the future, this is not expected to change. There are approximately 16 residences in proximity to the St. Marys Landfill. There have been occasional odour and dust complaints in recent years. As time progresses, the working face will move eastward, away from the residents on Water Street S., so the number of complaints is expected to decrease.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- The atmosphere in the vicinity of the St. Marys Landfill environment will have fewer emissions, dust, odour, and noise than current conditions. However, ongoing emissions from the adjacent aggregate industries may limit this improvement. Similarly, ongoing use for public waste drop-off and composting at the St. Marys Landfill site may further limit any improvements. There will be a minor short-term increase in work on the site associated with closure of the St. Marys Landfill. This work is not expected to increase dust or noise levels significantly.
- Hauling waste from St. Marys to Twin Creeks will add an additional 160 km roundtrip travel for each collection vehicle (90 vehicles per week). Approximately 1/3 of the trip would be along Hwy 402. Impacts to air emissions along the highway would be negligible. The remaining 2/3 of the trip would be along County and local roads through rural communities and landscapes. The additional traffic along these routes would contribute to a minor increase in emissions from current conditions.
- The waste from St. Marys is a relatively small volume compared to the total amount of waste received by Twin Creeks. This amount will not significantly change operations at Twin Creeks and emission, odour and noise levels in the vicinity are not expected to change by any perceptible amount.
- No landfill gas (LFG) collection system is currently in place at the St. Marys Landfill, and one is not expected to be constructed as part of the expansion. An LFG collection system is in place at Twin Creeks, collecting approximately 85% of the LFG. Thus, this Alternative will result in lower emission of landfill gases relative to Alternative 1.
- The Twin Creeks Landfill has experienced an increased number of complaints associated with odour since the landfill received approval to increase its fill rate in 2017. The addition of waste from St. Marys is not expected to result in an increased number of complaints.

In summary, impacts to the atmosphere are expected to be minimal as a result of both Alternatives 1 and 2.

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## **Mitigation**

Mitigation can be applied to minimize any effects associated with both Alternatives, including the following:

- Both landfills have operational plans in place to manage dust, odours, and noise. It is expected that these plans would be continued should either alternative be selected.
- All haul trucks would be expected to be maintained in good working conditions and to haul full loads to the extent possible to minimize vehicle emissions and vehicle-related noise associated with hauling waste to Twin Creeks.
- Construction activities associated with expanding or closing the St. Marys Landfill would occur during business hours only, respecting the Town's noise by-laws.

## **Net Effects**

Under baseline conditions (i.e., the Do Nothing Alternative), air quality and odour across the Study Area (i.e., at St. Marys Landfill, Twin Creeks Landfill and haul route in between) are within provincially set limits.

No changes from baseline conditions are expected with the Do Nothing option.

Under Alternative 1: Expand the St. Marys Landfill, net effects after mitigation include:

- Ongoing emission of landfill gases.
- Minor emission of dust, odour, and noise associated with St. Marys Landfill operations within acceptable provincially-set limits.
- Minor emission of dust and noise during construction of the landfill expansion.

Under Alternative 2: Export Waste to the Twin Creeks Landfill, net effects after mitigation include:

- Ongoing emission of a relatively small amount of landfill gases that escape the LFG collection system.
- Minor emission of dust, odour and noise associated with Twin Creeks Landfill operations within acceptable provincially-set limits.
- Emissions from vehicles used to haul waste from St. Marys to the Twin Creeks Landfill.
- Minor emission of dust and noise during closure of the St. Marys Landfill.

The magnitude, frequency, duration, and reversibility of these net effects are summarized in Table 3-8.

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**Table 3-8: Net Effects to the Atmosphere**

	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Magnitude	Low/Moderate – Air emissions and odour emitted at levels below provincial limits; however, no greenhouse gas collection system is in place. This alternative has lower vehicle related emissions compared to Alternative 2 and fewer receptors potentially affected. Noise levels are below provincial limits. Construction activities will add to current noise levels.	Low – Air emissions and odour emitted at levels below Provincial limits with landfill gas emission reduced through the site’s flaring system. Truck emissions along haul routes create a minor increase in air emissions. Noise levels are below provincial limits. Additional truck traffic along haul routes creates a minor increase in noise in addition to a minor increase associated with work to close the St. Marys Landfill.
Duration	Long-term – Contaminants, greenhouse gases, dust, and odour will be emitted for the full duration of the 40-year planning period and beyond. Noise will be created for the full duration of the 40-year planning period and beyond. Construction-related noise will occur in the short-term only as new cells are developed in the landfill	Long-term – Contaminants, greenhouse gases, dust, and odour will be emitted for the full duration of the 40-year planning period and beyond. Noise will also be created for the full duration of the 40-year planning period and beyond.
Frequency	Continuous – Emissions from landfilling will be continuous while emission from truck traffic will be repetitive during business hours. Noise from landfilling activities will be continuous during business hours.	Continuous – Emissions from landfilling will be continuous while emission from truck traffic will be repetitive during business hours. Noise from landfilling and hauling activities will be continuous during business hours.

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	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Reversibility	Non-reversible – Some impacts associated with contaminants and odour can be reversed once landfilling has ceased. Other emissions such as methane will continue for some time beyond the closure of the landfill. Effects associated with noise are reversible immediately upon ceasing landfilling and hauling activities.	Non-reversible – Some impacts associated with contaminants and odour can be reversed once landfilling has ceased. Other emissions such as methane will continue for some time beyond the closure of the landfill. Effects associated with noise are reversible immediately upon ceasing landfilling and hauling activities.
Preference Relative to the Do Nothing Alternative	Equally Preferred	Preferred

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### 3.8.2.2 Potential Impacts to Geology and Hydrogeology

Potential impacts to geology and hydrogeology are as follows:

Alternative 1: Expand the St. Marys Landfill:

- Leachate is created as a result of landfilling activities. Leachate from an expanded landfill would be collected and disposed to the Town's sanitary sewer system and treated at the Town's wastewater treatment plan. The current leachate collection system at the St. Marys Landfill is effective and it is expected that an expansion of the system would continue to appropriately manage leachate. No significant impacts to groundwater quality are expected.
- As discussed in Section 3.7, there is a CKD stockpile in the northwestern corner of the St. Marys Landfill property from historic SMC operations. There appears to be sufficient acreage at the St. Marys landfill property to expand the landfill without directly affecting the CKD pile. There is potential that the small watercourse through the site may need to be relocated to accommodate a landfill expansion. If the watercourse needs to be relocated, some work in proximity to the CKD pile may be required. There is some risk that disturbing the pile could release contaminants into ground and surface water. However, channel relocation also offers the opportunity to improve conditions, separating the channel from potential impacts from the CKD stockpile and the landfill, and creating a more robust buffer to filter surface runoff to the watercourse.
- The St. Marys Landfill is not within any Wellhead Protection Areas or Intake Protection Zones, and therefore, there will be no impacts to municipal drinking water sources. There are a number of residents who received potable water from individual wells. Regular groundwater monitoring has not identified concerns with drinking water quality in neighbouring wells. The current leachate collection system at the St. Marys Landfill is effective and it is expected that an expansion of the system would continue to appropriately manage leachate. Monitoring will be ongoing. No significant impacts to groundwater quality or drinking water are expected.
- The potential for spills is similar to current conditions. Spills are possible if the leachate collection system fails.
- The geology of the area is not expected to be affected. The aggregate extraction licence held by SMC has been relinquished and there are no aggregate resources present on the landfill property.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- With closure of the St. Marys Landfill, the existing leachate system will continue to be in place and maintained in accordance with all provincial requirements. Over time, it

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is expected that the leachate strength and production will decline as no further waste is disposed and the fill areas are capped.

- With respect to the Twin Creeks Landfill, leachate is collected and disposed to willing municipal licensed receivers. There is also seasonal disposal to an on-site poplar plantation. It is assumed that the leachate collection system functions properly in accordance with provincial requirements.
- The Twin Creeks Landfill is not within any Wellhead Protection Areas or Intake Protection Zones and the landfill is not a threat to municipal drinking water sources.
- There is some potential for spills during the transport of the St. Marys waste along the haul route. There is also potential for spills at the Twin Creeks landfill, should the leachate collection system fail or potential for spills related to vehicle accidents in moving leachate to area municipalities for treatment.
- No significant geology or aggregate resources are present at the Twin Creeks landfill site and no impacts to geology are expected.

### **Mitigation**

Mitigation can be applied to minimize effects, including the following:

- Both landfills have leachate monitoring, collection, and treatment systems in place as well as spill response plans and emergency procedures.
- With expansion of the St. Marys Landfill, a new leachate collection system will be installed with consideration to the existing infrastructure. An expanded monitoring program to take in account expansion areas will also be developed.
- A plan to manage and monitor the CKD stockpile will be developed should work be required in its vicinity. Any work in its vicinity will include measures to minimize contaminants from the stockpile reaching surface or groundwater.
- It is not expected that any additional mitigation will be required at the Twin Creeks Landfill beyond existing measures.
- All haul trucks would be expected to have appropriate equipment to properly manage the waste load. Drivers must be trained in spill response procedures in accordance with regulations.

### **Net Effects**

Under baseline conditions (i.e., the Do Nothing Alternative), impacts to geology and hydrogeology are managed at both landfills, primarily through leachate collection and treatment.

No changes from baseline conditions are expected with the Do Nothing option.

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Under Alternative 1: Expand the St. Marys Landfill, net effects after mitigation include:

- Minor potential for leachate spills and groundwater contamination on the landfill property.
- Minor potential for unexpected release of contaminants from the CKD pile, if disrupted.

Under Alternative 2: Export Waste to the Twin Creeks Landfill, net effects after mitigation include:

- Minor potential for leachate spills and groundwater contamination on the landfill property.
- Minor potential for spills along the haul route with low potential to contaminate groundwater resources.

The magnitude, frequency, duration, and reversibility of these net effects are summarized in Table 3-9.



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**Table 3-9: Net Effects to Geology and Hydrogeology**

	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Magnitude	Low – Effects on groundwater are expected to comply with all provincial requirements. The risk is low with appropriate spill prevention and response measures in place. Risks associated with the CKD pile can be reduced.	Low – Effects on groundwater are expected to comply with all provincial requirements. There is potential for spills along the haul route and at the landfill. The risk is low with appropriate spill prevention and response measures in place.
Duration	Short/Long-term – Spills occur in the short-term. There is potential for longer term effects from leachate spills at the site.	Short/Long-term – Spills occur in the short-term. There is potential for longer term effects from leachate spills at the site.
Frequency	Rarely – Spills are not expected to occur.	Rarely – Spills are not expected to occur. There is a slightly higher risk with the length of travel required to transport waste.
Reversibility	Generally Reversible – Any spills will be cleaned up in accordance with provincial requirements. There is potential for longer term effects that are not immediately reversible from leachate spills at the site.	Generally Reversible – Any spills will be cleaned up in accordance with provincial requirements. There is potential for longer term effects that are not immediately reversible from leachate spills at the site.
Preference Relative to the Do Nothing Alternative	Equally Preferred	Equally Preferred

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### 3.8.2.3 Potential Impacts to Surface Water

Potential impacts to surface water (quality and quantity) are as follows:

Alternative 1: Expand the St. Marys Landfill:

- An unnamed watercourse is present on the St. Marys landfill property site. The watercourse discharges to the Thames River. Surface water runoff from the landfill site could cause contaminants to enter both watercourses.
- With the option to expand the St. Marys landfill, the watercourse may need to be relocated. Construction could negatively affect water quality; however, channel relocation also offers the opportunity to improve conditions, separating the channel from potential impacts from the CKD stockpile and the landfill, and creating a more robust buffer to filter surface runoff to the watercourse.
- The potential for spills is similar to current conditions. Spills to surface water features are possible if the leachate collection system fails.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- The Van Kessel Drain flows through the Twin Creeks landfill property, discharging to Bear Creek. Surface water runoff from the landfill site could cause contaminants to enter both watercourses.
- There is some potential for spills during the transport of the St. Marys waste along the haul route. There is also potential for spills at the Twin Creeks landfill, should the leachate collection system fail.
- With closure of the St. Marys Landfill, there will be no new inputs that could potentially affect surface water quality in the unnamed watercourse. Water quality in the unnamed watercourse is minimally affected by the landfill. Water quality conditions are similar both upstream and downstream of the site. Therefore, water quality is not expected to improve significantly with closure of the landfill.

### Mitigation

Mitigation can be applied to minimize any effects associated with both Alternatives, including the following:

- Both landfills have stormwater management systems in place as well as spill response plans and emergency procedures. At both landfills, the stormwater systems discharge to the watercourse flowing through the sites.

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- With expansion of the St. Marys Landfill, a new stormwater management system will be constructed with consideration to the existing infrastructure. An expanded monitoring program to take in account expansion areas will also be developed. A plan to manage and monitor the CKD pile will be developed should work be required in its vicinity. Any work in its vicinity will include measures to separate the CKD pile from surface water systems.
- It is not expected that any additional mitigation will be required at the Twin Creeks Landfill beyond existing measures.
- With export to the Twin Creeks Landfill, all haul trucks would be expected to be equipped with appropriate equipment to properly manage the waste load. Drivers should be trained in spill response procedures.

### **Net Effects**

Under baseline conditions (i.e., the Do Nothing Alternative), impacts to surface water are managed at both landfills, primarily through stormwater management systems and leachate collection and treatment.

No changes from baseline conditions are expected with the Do Nothing option.

Under Alternative 1: Expand the St. Marys Landfill, net effects after mitigation include:

- Minor potential for stormwater management and leachate spills to surface water on the landfill property.
- Minor potential for unexpected release of contaminants from the CKD pile, if disrupted.

Alternative 2, Export Waste to the Twin Creeks Landfill net effects after mitigation include:

- Minor potential for stormwater management and leachate spills to surface water on the landfill property.
- Minor potential for spills along the haul route with low potential to contaminate surface water resources.

The magnitude, frequency, duration, and reversibility of these net effects are summarized in Table 3-10.

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**Table 3-10: Net Effects to Surface Water**

	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Magnitude	Low – Effects on surface water are expected to comply with all provincial requirements. The risk is low with appropriate spill prevention and response measures in place. Risks associated with the CKD pile can be reduced.	Low – Effects on surface water are expected to comply with all provincial requirements. There is potential for spills along the haul route and at the landfill. The risk is low with appropriate spill prevention and response measures in place.
Duration	Short/Long-term – Spills occur in the short-term. There is potential for longer term effects from leachate spills at the site.	Short/Long-term – Spills occur in the short-term. There is potential for longer term effects from leachate spills at the site.
Frequency	Rarely – Spills are not expected to occur.	Rarely- Spills are not expected to occur. There is a slightly higher risk with the length of travel required to transport waste.
Reversibility	Generally Reversible – Any spills will be cleaned up in accordance with provincial requirements. There is potential for longer term effects that are not immediately reversible from leachate spills at the site.	Generally Reversible – Any spills will be cleaned up in accordance with provincial requirements. There is potential for longer term effects that are not immediately reversible from leachate spills at the site.
Preference	Equally Preferred	Equally Preferred

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### 3.8.2.4 Potential Impacts to Biology

Potential impacts to biology (terrestrial and aquatic) are as follows:

Alternative 1: Expand the St. Marys Landfill:

- There are very few natural features present on the St. Marys landfill property. A small number of surface depressions provide wetland conditions. The unnamed watercourse provides indirect fish habitat. Some grassland areas are present on inactive and closed landfill cells. These grassland areas provide habitat for Eastern Meadowlark, a Threatened species. Expansion may result in the loss of the small wetlands and some grassland areas. Protection under the ESA applies to grassland habitat for Eastern Meadowlark. Authorization under the ESA (conditional exemptions O.Reg. 830/21) is required for any impacts to Eastern Meadowlark or its habitat.
- The unnamed watercourse runs through the center of the landfill property and may need to be relocated. This watercourse provides indirect fish habitat. Relocation will affect the watercourse temporarily but also offers opportunity for habitat improvements. Downstream impacts to the Thames River are possible.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- The Van Kessel Drain flows through the Twin Creeks landfill property. Water quality and fish habitat conditions are unknown. The addition of St. Marys' waste would not significantly change this habitat and no Species at Risk would be affected by this alternative.
- Several wooded areas are present around the landfill. It is not expected that any will be affected beyond existing conditions as a result of accepting St. Marys' waste.
- Several watercourses and wooded areas are present along the haul route. Any spills or blowing waste could negatively affect these natural areas.

### Mitigation

Mitigation can be applied to minimize any effects associated with both Alternatives, including the following:

- As stated above, authorization under the ESA (conditional exemptions under O.Reg. 830/21) is required for any impacts to Eastern Meadowlark or its habitat. Compensation in the form of new grassland habitat will either be created elsewhere in accordance with the ESA Regulations, or a species conservation charge can be paid to the Species at Risk Conservation Trust (effective April 29, 2022).
- Any work associated with the unnamed watercourse on the St. Marys property will include measures to improve aquatic habitat. Any trees removed can be replaced with new plantings around the landfill edges or in other locations with the goal of improving the Town's overall natural heritage system.

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- No mitigation would be required for the option to export waste to Twin Creeks.
- All haul trucks would be expected to be equipped with appropriate equipment to properly manage the waste load. Drivers should be trained in spill response procedures.

**Net Effects**

Under baseline conditions (i.e., the Do Nothing Alternative), terrestrial and aquatic features are limited at both the St. Marys and Twin Creeks Landfills. Aquatic habitat in the unnamed watercourse at the St. Marys Landfill is poor and much of the site has been previously disturbed. Habitat features are limited.

No changes from baseline conditions are expected with the Do Nothing option.

Under Alternative 1: Expand the St. Marys Landfill, net effects after mitigation include:

- Minor loss of potential species at risk grassland habitat, wetlands, and trees. Loss will only be temporary until compensation plantings mature. Opportunities to improve aquatic habitat are present.

Under Alternative 2: Export Waste to the Twin Creeks Landfill, net effects after mitigation include:

- No net effects to biological systems are expected.

The magnitude, frequency, duration and reversibility of these net effects are summarized in Table 3-11.

**Table 3-11: Net Effects to Biology**

	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Magnitude	Low – Effects to species at risk grassland habitat, wetlands and trees will be minor given compensation measures. Opportunities to improve aquatic habitat are present.	N/A – No net effect anticipated.
Duration	Short-term – There is a short time in which compensation plantings need time to grow in order to return to similar or better conditions than those lost.	N/A – No net effect anticipated.
Frequency	Once – Habitat is expected to be lost once during construction.	N/A – No net effect anticipated.

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	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Reversibility	Reversible – Habitat loss is reversible with appropriate habitat creation and plantings elsewhere.	N/A – No net effect anticipated.
Preference Relative to the Do Nothing Alternative	Somewhat Less Preferred	Preferred

### 3.8.3 Cultural Environment

#### 3.8.3.1 Potential Impacts to Archaeological Resources

Potential impacts to archaeological resources are as follows:

Alternative 1: Expand the St. Marys Landfill:

- Based on the history of the landfill property and Town records, no archaeological resources are known to be present at, or in the vicinity of, the St. Marys Landfill site. The site was quarried by SMC between 1912 and 1977. Given the existing disturbance at the site and from the industrial operations in the vicinity, no effects are anticipated. Further studies will be completed at the next stage in the EA process, if required, to confirm this assumption.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- No effects to archaeological resources in St. Marys or along the haul route are expected.
- Two cemeteries are present near the Twin Creeks Landfill. No changes are expected to the footprint of the Twin Creeks Landfill thus no impacts are expected.

#### Mitigation

Mitigation can be applied to minimize any effects associated with both Alternatives, including the following:

- Although no archaeological resources are likely to be present at, or around, the St. Marys landfill, further study will be undertaken at the next stage in the EA process, including completion of a Stage 1 Archaeological Assessment (and further assessments, if recommended) by a licensed archaeologist. If resources are identified, mitigation will be developed in accordance with the *Ontario Heritage Act*.
- No mitigation is expected to be required in association with the option to export waste to Twin Creeks.

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## Net Effects

Under baseline conditions (i.e., the Do Nothing Alternative), archaeological resources are unknown or unaffected by landfilling activities at both the St. Marys and Twin Creeks sites.

No changes from baseline conditions are expected with the Do Nothing option.

No net effects to archaeological resources are anticipated as a result of either Alternative 1 or 2.

Both Alternatives are equally preferred.

### 3.8.3.2 Potential Impacts to Built Heritage

Potential impacts to Built Heritage are as follows:

Alternative 1: Expand the St. Marys Landfill:

- According to the Town's Official Plan, no Built Heritage features are present at, or in the vicinity of, the St. Marys Landfill. As such, no effects are anticipated.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- No known Built Heritage resources are present in the vicinity of the Twin Creeks Landfill. As such, no effects are anticipated.

## Mitigation

Mitigation can be applied to minimize any effects associated with both Alternatives, including the following:

- Although no Built Heritage resources were identified to be present at, or around, the St. Marys Landfill, further study will be undertaken at the next stage in the EA process, including a Cultural Heritage Resource Assessment. If resources are identified, mitigation will be developed in accordance with the *Ontario Heritage Act*.
- No mitigation is expected to be required in association with the option to export waste to Twin Creeks.

## Net Effects

Under baseline conditions (i.e., the Do Nothing Alternative), Built Heritage resources are unknown or unaffected by landfilling activities at both the St. Marys and Twin Creeks sites.

No changes from baseline conditions are expected with the Do Nothing option.



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No net effects to Built Heritage resources are anticipated as a result of either Alternative 1 or 2.

Both Alternatives are equally preferred.

### **3.8.3.3 Potential Impacts to Cultural Heritage Landscapes**

Potential impacts to Cultural Heritage Landscapes are as follows:

Alternative 1: Expand the St. Marys Landfill:

- According to the Town's Official Plan, no Cultural Heritage Landscapes are present at, or in the vicinity of, the St. Marys Landfill. As such, no effects are anticipated.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- No known Cultural Heritage Landscapes are present in the vicinity of the Twin Creeks Landfill. As such, no effects are anticipated.

### **Mitigation**

Mitigation can be applied to minimize any effects associated with both Alternatives, including the following:

- Although no Cultural Heritage Landscapes are likely to be present at, or around, the St. Marys Landfill, further study will be undertaken at the next stage in the EA process, including completion of a Cultural Heritage Resource Assessment. If resources are identified, mitigation will be developed in accordance with the *Ontario Heritage Act*.
- No mitigation is expected to be required in association with the option to export waste to Twin Creeks.

### **Net Effects**

Under baseline conditions (i.e., the Do Nothing Alternative), Cultural Heritage Landscapes are unknown or unaffected by landfilling activities at both the St. Marys and Twin Creeks sites.

No changes from baseline conditions are expected with the Do Nothing option.

No net effects to Cultural Heritage Landscapes are anticipated as a result of either Alternative 1 or 2.

Both Alternatives are equally preferred.

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### **3.8.4 Socio-Economic Environment**

#### **3.8.4.1 Potential Impacts to Transportation Routes**

Potential impacts to transportation routes are as follows:

Alternative 1: Expand the St. Marys Landfill:

- With expansion of the St. Marys Landfill, the number of curbside collection trucks and travel routes through St. Marys will not change in the short-term. The population of St. Marys is expected to grow nearly 62% over the 40-year planning period. Waste generation is anticipated to grow at a similar rate. Although there is likely some available capacity within the trucks currently used for the collection of waste, it is assumed this additional waste will require each truck to make more collection trips and/or additional collection trucks will be needed.
- Some minor changes in collection routes through St. Marys may be required over time to accommodate the growth in waste disposal due to population, though overall these changes are considered minor.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- Some minor changes in collection routes through St. Marys may be required over time to accommodate the growth in waste disposal due to population, though overall these changes are considered minor.
- Travel to Twin Creeks will add an additional 160 km roundtrip travel for each collection vehicle. This distance (travel-time) will limit the number of trips that a single truck can make per day. Additional trucks (and crew) may be required as a result.
- Approximately 1/3 of the trip would be along Hwy 402. Impacts to traffic along the highway would be negligible. The remaining 2/3 of the trip would be along County and local roads through rural communities and landscapes. The additional traffic along these routes would represent a minor increase from current conditions.

#### **Mitigation**

Mitigation can be applied to minimize any effects associated with both Alternatives, including the following:

- In all cases, trucks will be maintained in good working order and will haul full loads to the extent possible to make efficient use of each vehicle trip.

#### **Net Effects**

Under baseline conditions (i.e., the Do Nothing Alternative), the curbside collection vehicle collect St. Marys' residential waste and take it directly to the landfill. Waste collection and hauling vehicles associated with the Twin Creeks Landfill arrive from

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various locations across southern Ontario, including along the route that would be taken by St. Marys waste collectors if that alternative is selected.

No changes from baseline conditions are expected with the Do Nothing option.

Under Alternative 1: Expand the St. Marys Landfill, net effects after mitigation include:

- No net effects to transportation routes are expected.

Under Alternative 2: Export Waste to the Twin Creeks Landfill, net effects after mitigation include:

- There will be a minor increase in truck traffic along the haul route between St. Marys and the Twin Creeks Landfill.

The magnitude, frequency, duration and reversibility of these net effects are summarized in Table 3-12.

**Table 3-12: Net Effects to Transportation Routes**

	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Magnitude	N/A – No net effect anticipated.	Low – There will be an increased number of trucks travelling the route between St. Marys and the Twin Creeks Landfill. Effects on roadways and traffic conditions will be minimal.
Duration	N/A – No net effect anticipated.	Long-term – The increase in truck traffic will be ongoing over the planning period.
Frequency	N/A – No net effect anticipated.	Repeatedly – Truck travel will occur on a daily basis during business hours.
Reversibility	N/A – No net effect anticipated.	Reversible – Once truck traffic is suspended at the end of the planning period, any impacts to roadways and traffic conditions will be removed.
Preference Relative to the Do Nothing Alternative	Equally Preferred	Less Preferred

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### **3.8.4.2 Land Use**

Potential impacts to land use are as follows:

Alternative 1: Expand the St. Marys Landfill:

- The St. Marys Landfill property zoned for landfill uses. Adjacent extractive industrial and agricultural uses are compatible with landfill uses. No changes to the St. Marys Zoning bylaw or Official Plan designations are required to expand the landfill.
- The Township of Perth South lies adjacent to the western and southern boundaries of the landfill. The Township does not have its own Official Plan and, instead, defers to the County of Perth Official Plan. According to Schedule A of the Perth County Official Plan, lands to the immediate south and east are designated as Licensed Quarry Pit/Limestone Resource and Agricultural Lands with a small amount of Natural Resources/Environment adjacent to the Thames River. A small number of residences are located on the east side of Water Street South, immediately adjacent to the landfill. These residential areas may experience nuisance effects from noise, dust, odour and blowing litter. Disposal rates and operational practices are not expected to change after the expansion. Therefore, nuisance effects are expected to be similar to current conditions. As noted in Section 3.8.2.1, noise complaints under existing conditions have been very limited and air quality and odour levels are below provincial standards.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- The Twin Creeks Landfill is also currently properly designated and zoned. Adjacent uses to the Twin Creeks Landfill are also generally compatible; however, there are several more sensitive uses such as the two cemeteries and several businesses along Nauvoo Road in Watford that may be more sensitive to the landfill use. This alternative would not change this land use or how adjacent land uses experience the landfill.
- This alternative would allow for the closure of the existing St. Marys Landfill. Given the location of the St. Marys Landfill adjacent to extractive industry, and post-closure monitoring required, alternative uses for this site are very limited. Surrounding residential uses in the vicinity of the St. Marys Landfill may experience improved conditions; however, some activities such as composting and local waste drop-off are likely to continue at the site. The site will likely remain partially vacant or underutilized.

### **Mitigation**

Mitigation can be applied to minimize any effects associated with both Alternatives, including the following:

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- Standard operational measures to minimize noise, dust, odour, blowing litter and other nuisance effects which can impact adjacent residential areas.

**Net Effects**

Under baseline conditions (i.e., the Do Nothing Alternative), lands uses adjacent to the landfill are generally compatible and include aggregate extraction, agriculture and a small number of rural residences.

No changes from baseline conditions are expected with the Do Nothing option.

Under Alternative 1: Expand the St. Marys Landfill, no net effects beyond baseline conditions are expected. Nuisance effects will be managed.

Under Alternative 2: Export Waste to the Twin Creeks Landfill, net effects after mitigation include:

- Lands owned by the Town adjacent to the existing landfill have limited use in the future, given surrounding extraction activities and existing landfill. These lands will have no benefit to the Town and will become unusable vacant lands.

The magnitude, frequency, duration and reversibility of these net effects are summarized in Table 3-13.

**Table 3-13: Net Effects to Land Use**

	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Magnitude	N/A – No net effect anticipated.	Moderate – Lands owned by the Town adjacent to the existing St. Marys Landfill have limited use in the future, given surrounding extraction activities and existing landfill.
Duration	N/A – No net effect anticipated.	Long-term – There will be few alternative uses for the lands in St. Marys in the long-term.
Frequency	N/A – No net effect anticipated.	Ongoing – Lands in St. Marys will be vacant on an ongoing basis into the future.

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	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Reversibility	N/A – No net effect anticipated.	Irreversible – Previous and existing landfilling means the land use in St. Marys cannot be changed to an alternate land use in the near future.
Preference Relative to the Do Nothing Alternative	Preferred	Less Preferred

### 3.8.4.3 Employment Effects

Potential impacts to current employment levels are as follows:

Alternative 1: Expand the St. Marys Landfill:

- With expansion of the St. Marys Landfill, no change in employment related to the ongoing operation of the landfill is expected. The landfill will continue to employ one full-time position, one part-time position and six staff who work occasionally, as required.
- Some additional jobs may be created during the initial construction phase.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- With the export of waste to Twin Creeks, jobs for current St. Marys Landfill operators will be lost. These jobs tend to be filled by those living locally and who contribute to the Town's local economy. This likely will result in the loss of one full-time position and one part-time position. It is assumed that the occasional staff will be maintained to carry out their additional responsibilities. Some staff may still be required to oversee any ongoing composting and household waste drop-off that may remain at the site.
- Under this Alternative, waste will be picked up and transported directly to the private landfill. Thus, there would be a small number of additional driver/collection jobs or increased hours for waste collection staff given the increased distance to the disposal site. These jobs are unlikely to be filled by St. Marys residents. The current waste collection contractor, Bluewater Recycling Association (BRA), is based in South Huron, Ontario. There are no waste collection contractors currently based in St. Marys.
- The quantity of St. Marys waste is unlikely to require additional staff at the Twin Creeks Landfill.

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**Mitigation**

No mitigation is proposed.

**Net Effects**

Under baseline conditions, the landfill employs one full-time position, one part-time position and six staff who work occasionally at the site (see Section 3.7.1), as required.

Under the Do Nothing option, the landfill will be closed. Therefore, the site’s current employees (two full-time and one part-time) will not be required as these positions will be eliminated. However, as noted in Table 3-14, these employees may find new positions elsewhere.

Under Alternative 1: Expand the St. Marys Landfill, net effects after mitigation include:

- No changes to employment at the landfill are expected.
- Some additional short-term employment may be created as a result of the expansion construction work.

Under Alternative 2: Export Waste to the Twin Creeks Landfill, net effects after mitigation include:

- Loss of one full-time position and potentially other part-time or occasional positions.

The magnitude, frequency, duration, and reversibility of these net effects are summarized in Table 3-14.

**Table 3-14: Net Effects on Employment**

	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Magnitude	Low – Net benefit from increase in short-term construction jobs.	Low – A minimal number of jobs may be lost. Staff may be able to be shifted to new positions elsewhere.
Duration	Short-term – Expansion construction jobs to be added only during construction.	Long-term – Landfill operator jobs will be lost in the long-term.
Frequency	Infrequently – Expansion will be constructed in phases (landfill cells) with new cells added as older cells are filled. Therefore, construction jobs will be added on a short-term	Once – Landfilling jobs will be lost once as the landfill closes.

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	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
	basis over several expansion periods.	
Reversibility	Reversible – Employment needs may change over the 40-year operational period and can be revised, as necessary.	Irreversible – Once the landfill is closed landfill operating jobs will not be reopened.
Preference Relative to the Do Nothing Alternative	Somewhat Preferred	Less Preferred

#### 3.8.4.4 Economic Conditions

Potential impacts to current economic conditions are as follows:

Alternative 1: Expand the St. Marys Landfill:

- Under baseline conditions, some businesses in St. Marys are serviced under the Town’s waste collection system. These businesses pay relatively low rates for waste collection. With expansion of the St. Marys Landfill, local businesses which are currently serviced by BRA with drop-off at the St. Marys Landfill will be able to continue to use this service. Town staff have indicated a strong belief that the landfill is an important factor in maintaining a strong business and industrial sector in the Town.
- Private waste collectors service some of the remainder of the St. Marys business community. Most of these private waste collectors use the St. Marys Landfill as a disposal location. They will be able to continue to dispose of waste at the St. Marys Landfill at similar cost. Excluding inflation, changes in regulatory, labour or market conditions – which are likely to affect all disposal alternatives, there are no changes to costs or methods of disposing of waste for businesses expected.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- With the option to export waste to Twin Creeks, the contract with BRA for curbside collection services will need to be renegotiated. Businesses currently served by BRA and the St. Marys Landfill may or may not continue to be serviced under a new contract, subject to additional costs associated with the longer travel distance. As such, some businesses may need to transfer their collection service to a private waste collector. Costs to these businesses are likely to increase. Town staff believe this could result in some business hardships, closures or relocations.
- Where businesses are currently using a private hauler that disposes of waste at the St. Marys Landfill, costs may also increase as private haulers need to travel farther



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to an alternative landfill location, increasing their costs. Having local waste disposal capacity has been an economic development advantage for St. Marys.

**Mitigation**

No mitigation is proposed.

**Net Effects**

Under baseline conditions (i.e., the Do Nothing Alternative), some businesses in St. Marys are serviced under the Town’s waste collection system. These businesses pay relatively low rates for waste collection.

No changes from baseline conditions are expected with the Do Nothing option.

Under Alternative 1: Expand the St. Marys Landfill:

- No impacts are expected.

Under Alternative 2: Export Waste to the Twin Creeks Landfill:

- Some local businesses may experience increased costs related to private waste disposal.

The magnitude, frequency, duration and reversibility of these net effects are summarized in Table 3-15.

**Table 3-15: Net Effects on Economic Conditions**

	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Magnitude	N/A – No net effect anticipated.	Moderate – Costs to businesses to dispose of waste may increase, thereby decreasing competitiveness and profitability.
Duration	N/A – No net effect anticipated.	Long-term – Cost increases are likely to remain for the duration of the planning period.
Frequency	N/A – No net effect anticipated.	Occasionally – Costs to businesses may increase occasionally each time a contract with a private waste collector is renewed.
Reversibility	N/A- No net effect anticipated.	Irreversible – Once the landfill is closed the Town no longer

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	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
		has control over waste collection prices.
Preference Relative to the Do Nothing Alternative	Equally Preferred	Less Preferred

### 3.8.4.5 Aesthetics/Enjoyment of Life

Potential impacts to the aesthetics and enjoyment of life for neighboring residents are as follows:

Alternative 1: Expand the St. Marys Landfill:

- In total, there are 16 residences within 120 m of the landfill. These are rural residential properties. According to Annual Monitoring Reports for 2013 through 2018, inclusive, there have been 16 complaints related to odours from the St. Marys Landfill. The Town indicates they received no odour complaints in 2017, 2019 or 2020. The Annual Monitoring Reports indicate that these complaints have been resolved promptly by Town staff. While the Town’s goal is to receive zero complaints, the number of complaints recorded are not considered to be out of the ordinary for a landfill.
- With an expansion, no additional odour, traffic or dust concerns are expected as the quantity of waste to be disposed will remain the same, with slight increases over time in conjunction with population growth. As time progresses, the working face will move eastward, away from the residents on Water Street, so the number of complaints is expected to decrease.
- Some nuisance effects may be experienced during construction as an increase in noise and dust may occur in the short-term.
- Additional screening of trees will be added to minimize sightlines and dampen some noise.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- With the option to export waste to Twin Creeks, property owners adjacent to the St. Marys Landfill will experience fewer odour, noise, dust and traffic concerns. However, ongoing noise and dust from the adjacent aggregate industries may limit this improvement. Similarly, ongoing use for public waste drop-off and composting may further limit any improvements.
- The Waste Management of Canada Corporation, who owns the Twin Creeks Landfill has several community benefit agreements, including:

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- A Community Host Agreement with Warwick Township;
  - Impact Benefit Agreement with landfill neighbours;
  - Property Value Protection; and
  - A local liaison committee.
- These benefits help to offset negative effects.
  - Residents along the haul route would experience a small increase in traffic. This will be more pronounced on the small roads outside of St. Marys, leading to Hwy 402. However, it is anticipated that the effect is likely to be imperceptible for most of the route.
  - The Twin Creeks Landfill has experienced an increased number of complaints associated with odour since 2017, when the landfill received approval to increase its fill rate.

### **Mitigation**

Mitigation can be applied to minimize any effects associated with both Alternatives, including the following:

- Both the St. Marys and Twin Creeks Landfills have operating procedures to document, manage and report dust, odour, traffic, and noise concerns and complaints. These procedures will be reviewed and updated with the expansion of the St. Marys Landfill.
- It is expected that aesthetic effects associated with an expansion to the St. Marys Landfill can also be improved through additional visual blockages that can be erected as part of the new landfill design.

### **Net Effects**

Under baseline conditions (i.e., the Do Nothing Alternative), some complaints have been received at both the St. Marys and Twin Creeks Landfills in recent years due to odour and dust concerns. The number of complaints is not considered to be out of the ordinary with respect to landfill operations and are typically addressed quickly.

No changes from baseline conditions are expected with the Do Nothing option.

Under Alternative 1: Expand the St. Marys Landfill:

- The landfill is expected to continue to operate and accept the same volume of waste as it currently does. Therefore, a small number of odour, noise, and dust issues may infrequently affect neighbouring residents within acceptable provincially-set limits and similar to existing conditions. Effects will decrease over time as the landfill face moves eastward.

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Under Alternative 2: Export Waste to the Twin Creeks Landfill:

- Residents adjacent to the St. Marys Landfill may experience fewer nuisance effects associated with noise, dust, and odour from the landfill. Disruptions to enjoyment of life may still persist from other adjacent land uses, such as the aggregate extraction operations.
- Residents along the haul route may experience minor disruptions to enjoyment of life as a result of a minor increase in truck traffic.

The magnitude, frequency, duration and reversibility of these net effects are summarized in Table 3-16.

**Table 3-16: Net Effects on Local Aesthetics and Enjoyment of Life**

	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
Magnitude	N/A – No net effect anticipated.	Moderate Benefit – Residents adjacent to the St. Marys Landfill may experience improved conditions with fewer odour concerns. Dust and noise may continue to be problematic due to other adjacent land uses.
Duration	N/A – No net effect anticipated.	Long-term – Improved conditions for adjacent residents will be ongoing as long as the landfill remains closed.
Frequency	N/A – No net effect anticipated.	Ongoing – Improved conditions for adjacent residents will be ongoing as long as the landfill remains closed.
Reversibility	N/A- No net effect anticipated.	Irreversible – Once the landfill is closed it will not be reopened.
Preference Relative to the Do Nothing Alternative	Equally Preferred	Preferred

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### **3.8.5 Indigenous Connections to the Land**

#### **3.8.5.1 Traditional and Historic Uses/Land Claims/Treaty and Indigenous Rights**

Potential impacts to traditional and historical uses associated with Treaty and Indigenous Rights or Land Claims are as follows:

Alternative 1: Expand the St. Marys Landfill:

- The St. Marys Landfill is located in close proximity to the Thames River, which was an important travel corridor, source of sustenance and culturally significant feature for the Indigenous people who historically lived in the area. The Thames River continues to be used for hunting, gathering of traditional and medicinal plants and for spiritual purposes. The Thames River is not currently impacted by the landfill and it is expected that, with expansion, appropriate mitigation can be put in place to ensure that there will be no impacts to the Thames River.
- Traditional uses may occur in the vicinity, including the Thames River as noted above, but have not occurred on the landfill property since before SMC was active on the site. There would be no opportunity for traditional uses to be re-established in the foreseeable future if the landfill is expanded and therefore, no change from current conditions.
- The St. Marys Landfill is located within lands subject to Treaties. It is believed that six First Nations and the Haudenosaunee Confederacy have Indigenous and Treaty Rights associated with lands in, and around, the landfill, as described in Section 3.7.1.2. Expansion of the landfill represents a development within a Treaty area.
- There are no known land claims associated with the site.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- With Alternative 2, waste would be exported to the Twin Creeks Landfill, which is located in proximity to Bear Creek which would have been used as a travel corridor and source of sustenance for the Indigenous people who historically lived in the area. It is expected that some traditional uses in the vicinity continue.
- With the waste export option, there would be no opportunity for traditional uses to be re-established at the St. Marys site due to the closure and long-term monitoring required. Portions of the site are likely to continue to be used for composting, and local waste drop-off.
- The Twin Creeks Landfill is also on lands subject to a Treaty signed by the Crown and the original inhabitants of the area (Treaty 29). It is believed that six First Nations and the Haudenosaunee Confederacy have Indigenous and Treaty Rights associated with lands in, and around, the landfill, as described in Section 3.7.1.2..
- There are no known land claims associated with the site.

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## **Mitigation**

Mitigation can be applied to minimize any effects as follows:

Alternative 1: Expand the St. Marys Landfill:

- The Town will continue to consult with Indigenous communities to identify measures to mitigate potential effects, particularly with respect to the Thames River.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- It is noted that Waste Management of Canada Corporation has signed an Impact Benefit Agreement with the Walpole Island First Nation. It is not known whether any additional First Nations are covered under this agreement.
- These benefits help to offset negative effects associated with that landfill. It is assumed that any waste received from St. Marys at the Twin Creeks Landfill will be covered under existing agreements held by Waste Management of Canada Corporation and therefore there will be no additional benefit to Indigenous communities as a result of this Alternative beyond existing conditions.

## **Net Effects**

Under baseline conditions lands at the St. Marys landfill site historically used by Indigenous communities have been subject to aggregate extraction and landfilling for nearly a century, removing any potential for traditional use and any use associated with Treaty or Indigenous Rights. Similarly, the Twin Creeks landfill has been in operation since 1972.

With regard to all Alternatives, there will be no net change to the ability for Indigenous communities to use the Thames River for traditional purposes, no net change in the inability for Indigenous communities to use the St. Marys landfill property for traditional purposes and no net change to the benefits received through the Twin Creeks landfill Impact Benefit Agreement. Therefore, there will be no overall net effects associated with Alternatives 1, 2 or Do Nothing.

### **3.8.6 Financial Factors**

#### **3.8.6.1 Capital and Operational Costs**

A discussion and analysis of potential capital and operational costs associated with each Alternative is as follows:

Alternative 1: Expand the St. Marys Landfill:

- It is assumed that the Town's existing curbside collection process would continue unchanged. Residents and businesses currently collected by Bluewater Recycling Association (BRA) would continue to have their waste collected by BRA.

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- It is expected that current collection and disposal rates by BRA would likely remain the same, with moderate increases over the next 40 years in line with the cost of living, price of fuel and other factors affecting transportation. Waste transportation cost estimates were provided by several survey respondents (see Section 3.4.2.2). Based on responses, it is assumed that a standard collection vehicle used by BRA would typically cost \$2.53 to \$2.97 per km (dependent on congestion)<sup>34</sup>, with an 8-tonne capacity. For comparative purposes, this provides a cost/tonne/km of \$0.37<sup>35</sup>.
- Delivery to an expanded St. Marys Landfill: It is 3.2 km from the centre of St. Marys to the landfill site. Using the collection truck, a round trip costs \$2.36/tonne.
- There are capital costs associated with constructing new landfill cells and associated infrastructure, including expanded leachate collection, stormwater and interior roads, etc. These costs have been estimated to be \$7,360,000, which is equivalent to approximately \$24.00/tonne over the planning period.

This assessment of costs for the expansion of the St. Marys Landfill is based on costs developed for Alternative Method 3. The total estimated present value cost for this alternative is \$24,860,000. The following key items were incorporated into the cost estimate, and cost summaries are provided in Table 3-18:

- Studies, Approvals, and Construction:
  - Studies required to develop and operate the site and obtaining required approvals from relevant agencies; and
  - Construction of the facility, including:
    - Earthworks to prepare the site;
    - Cell base preparation;
    - Forcemain upgrades;
    - Upgrades to Public Drop-Off area;
    - Leachate collection system; and
    - Phased development of the four cells (estimated 10-year life of each cell).
- Closure Cost:
  - Begins 2 years after completion of the first cell;
  - Phased closure of cells; and
  - Application of vegetative cover.
- Annual Operations Costs:
  - Incurred annually during site operation;
  - General labour and staffing of site;
  - Fuel costs for on-site equipment; and

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<sup>34</sup> <http://www.bv.transports.gouv.qc.ca/mono/0965385.pdf>, accessed May 5, 2015, plus data collected from survey respondents.

<sup>35</sup> Value used for comparison of alternatives.

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- Annual environmental and operational monitoring.
- Post-Closure Care (operational) Costs:
  - Estimated timeline of 50 years post-closure;
  - Operation and inspection of leachate collection system; and
  - Annual environmental monitoring.

**Table 3.17: Cost Summary for Alternative 1**

	<b>Present Value Cost</b>
Studies, Approvals, and Construction	\$6,590,000
Closure	\$760,000
Annual Operations	\$17,190,000
Post-Closure Care	\$320,000
<b>Total</b>	<b>\$24,860,000</b>
<b>Note: Estimated based on 2015 costs.</b>	

Alternative 2: Export Waste to the Twin Creeks Landfill:

- It is assumed that the Town’s existing curbside collection process would continue with some minor modifications. Residents and some businesses currently collected by Bluewater Recycling Association (BRA) would continue to have their waste collected by BRA.
- Regarding collection and delivery costs, larger tractor-trailers are likely to be used to transport waste from St. Marys to Twin Creeks. Haulage using a tractor-trailer is much less expensive on a tonne/km basis because haulage vehicles carry significantly more waste than curbside collection trucks (delivery vehicles) despite being slightly more expensive to purchase and consuming slightly more fuel per km. It is assumed that a standard collection vehicle used by BRA would typically cost \$3.12 to \$3.84<sup>36</sup>, with a 32-tonne capacity. For comparative purposes, this provides a cost/tonne/km of \$0.12<sup>37</sup>.
- It is expected that the BRA collection vehicles will leave their depot in South Huron, travel to St. Marys to complete curbside collection, drive to Twin Creeks to tip their load and finally return to their depot. Excluding the collection route in St. Marys, and using the Town centre as the measuring point, gives a trip distance of 143 km. By comparison, BRA’s trucks currently travel from their depot to St. Marys, complete their collection route, travel to the St. Marys Landfill and then back to the depot. Excluding the collection route, this is a distance of 36 km if we assume the truck does not complete additional collections in St. Marys or in other BRA communities.

<sup>36</sup> <http://www.bv.transports.gouv.qc.ca/mono/0965385.pdf>, accessed May 5, 2015, plus data collected from survey respondents.

<sup>37</sup> Value used for comparison of alternatives.



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Therefore, delivery to Twin Creeks adds 107 km to the collection vehicle's trip, which is expected to cost \$39.59 per tonne (rounded to \$40.00/tonne). This \$40.00/tonne is the anticipated additional cost for the Town's curbside collection contract with BRA.

- For disposal costs (also known as 'tipping fees'), in their export survey response, Waste Management of Canada Corporation indicated that disposal at the Twin Creeks Landfill would cost between \$40.00 and \$50.00 per tonne. While it is possible that the Town of St. Marys could negotiate a better tipping fee than \$50.00/tonne, this cost was assumed to be a reasonable estimate for longer term planning.
- The Town will also have additional administrative costs for tendering and negotiating contracts, monitoring these contracts and making contract payments. Typically, disposal contracts with private waste service providers are in the range of 3 to 5 years. Longer periods can be negotiated, with the term-length providing the customer (i.e., Town of St. Marys) some security at the risk of paying a slightly higher disposal cost.
- According to the (2015) export survey response provided by Waste Management of Canada Corporation (see Section 3.4.2.2), they were willing to commit to a 25-year contract for disposal, corresponding with the estimated remaining lifespan of the Twin Creeks Landfill. In 2017, the Twin Creeks Landfill received Ministry approval to increase annual their rate-of-fill. The site is now expected to be full in about 15-years. It is therefore expected that a contract for disposal at the Twin Creeks Landfill will be a maximum of 15 years. This means that at least one other disposal contract, at an alternative disposal site, would be required during the 40-year planning period of this EA. While other disposal sites may result in different tipping fees and transportation costs, we have chosen to ignore this possibility for our evaluation. Overall, though considering typical contract lengths and the remaining capacity of the Twin Creeks Landfill, export costs may not be stable or predictable for the EA planning period.
- To create an even cost comparison with expanding the St. Marys Landfill, we need to incorporate an estimate of the closure and post-closure care costs for the Town's current site. Such costs are included above as part of the St. Marys Landfill expansion per tonne cost.
- In March 2018, Burnside prepared an estimate of landfill liabilities for the St. Marys Landfill in accordance with the Public-Sector Accounting Board rule PS 3270. This assessment concluded that closure and post-closure care for the existing landfill would cost between \$1,800,000 and \$2,900,000. This is equivalent to \$4.66 to \$7.56/tonne. For exporting to the Twin Creeks Landfill, we have selected \$5.00/tonne as an appropriate estimated cost for closure and care of the existing (not-expanded) St. Marys Landfill.

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### Resulting Cost Comparison

The cost to expand the St. Marys Landfill or export to the Twin Creeks Landfill is the combination of component costs discussed above. These are summarized in the table below.

**Table 3.18: Cost Comparison of Alternatives**

Element	Expand St. Marys Landfill	Export to Twin Creeks Landfill
Collection Operations	Equal to existing cost	Equal to existing cost
Transportation	Equal to existing cost	Existing cost, plus \$40.00/tonne
Disposal	\$51.00/tonne	\$50.00/tonne tipping fee
Capital Costs	\$7,360,000 (=\$24.00/tonne)	\$1,800,000 to \$2,900,000 to close existing landfill (assume \$5.00/tonne)
<b>Total</b>	<b>\$75.00/tonne</b>	<b>\$95.00/tonne</b>

The Town’s current disposal fee at the landfill site is \$82.50/tonne<sup>38</sup>. From Table 3-19, above:

- Expanding the St. Marys Landfill may result in a slightly lower cost for disposal than currently enjoyed by residents and businesses that deliver waste directly to the site. Curbside collection and transportation costs are expected to be about the same. Additional costs are expected to construct new landfill cells and expand infrastructure associated with leachate collection, stormwater management, and other design features.
- Disposal at the Twin Creeks Landfill is expected to be substantially more expensive than expansion of the St. Marys Landfill – almost 30% more expensive. While curbside collection costs are not expected to change, all other aspects of the disposal cost will, including the closure and care for the existing (un-expanded) St. Marys Landfill.

### Mitigation Measures and Net Effects

There are no impacts associated with costs, apart from the payment itself. While it is assumed that the Town will seek to minimize these costs, there are no specific mitigation measures that can be applied. Net effects are the costs noted above.

<sup>38</sup> <https://www.townofstmarys.com/en/living-here/Landfill.aspx> (accessed October 28, 2019).

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### **3.8.7 Technical Factors**

#### **3.8.7.1 Technical Ability to Carry Out Each Alternative**

For this indicator, the regulatory process and any associated contracts or agreements were considered.

Under the Do Nothing Alternative, there is no new approvals or regulatory process beyond the existing processes in place to operate the remainder of the capacity at the landfill and complete proper closure and post-closure approvals. However, in the long-term, this Alternative does not meet the Town's obligations to provide a solid waste disposal solution for the Town, whether that solution is inside the Town or elsewhere. By Doing Nothing, the Town will not be able to meet its obligations..

Alternative 1: Expand the St. Marys Landfill:

- Expanding the St. Marys Landfill will require extensive permitting, including approval of this EA document, detailed design, and an Environmental Compliance Approval (ECA). However, the expanded landfill will meet the Town's needs over the full planning period.

Alternative 2: Export Waste to the Twin Creeks Landfill:

- For Alternative 2, disposal at the Twin Creeks Landfill, the regulatory process would be straightforward. An Environmental Assessment or other permits or approvals are not required as Twin Creeks is already permitted to accept St. Marys' waste. Some work would be required in relation to the closure of the St. Marys Landfill and options to maintain a public drop-off facility and composting at the site. A contract with Twin Creeks would be required. Based on the information provided by Waste Management of Canada Co. (WM), as noted in Section 3.4.2.2, a contract covering the full 40-year planning period will not be possible. The contract with BRA will also need to be renewed and updated to incorporate the increased travel to the disposal site. As such, this alternative does not fully address the needs of the Town over the planning period. Through their survey response, WM noted that a 25-year contract may be possible. However, given the recent increase to the landfill's fill rate, only 15 years of capacity may be left. Thus, an alternative landfill with longer travel route may be required before even half of the planning period is over. This will result in significant uncertainty and risk for the Town as they will need to review their waste management option again soon. Costs could rise significantly from those predicted in this EA.

### **Mitigation Measures and Net Effects**

Impacts associated with this criterion are discussed above. However, no mitigation measures can be applied. Thus, mitigation and net effects are not discussed for this criterion.

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### 3.9 Summary of Net Effects

The evaluation of net effects relative to Doing Nothing is presented in Table 3-20. All rankings are relative to the Do Nothing Alternative.

**Table 3-19: Summary of Net Effects**

Criteria	Comparison to the Do Nothing Alternative	
	Alternative 1: Expand the St. Marys Landfill	Alternative 2: Export Waste to the Twin Creeks Landfill
<b>Natural Environment</b>		
Potential Impacts to Atmosphere	Equally Preferred	Preferred
Potential Impacts to Geology and Hydrogeology	Equally Preferred	Equally Preferred
Potential Impacts to Surface Water	Equally Preferred	Equally Preferred
Potential Impacts to Biology	Somewhat Less Preferred	Preferred
<b>Cultural Environment</b>		
Potential Impacts to Archaeological Resources	Equally Preferred	Equally Preferred
Potential Impacts to Built Heritage	Equally Preferred	Equally Preferred
Potential Impacts to Cultural Heritage	Equally Preferred	Equally Preferred
<b>Socio-economic Environment</b>		
Potential Impacts to Transportation Routes	Equally Preferred	Less Preferred
Land Use	Preferred	Less Preferred
Employment Effects	Somewhat Preferred	Less Preferred
Economic Conditions	Equally Preferred	Less Preferred
Aesthetics/Enjoyment of Life	Equally Preferred	Preferred
<b>Indigenous Connections to the Land</b>		
Traditional and Historic Uses/Land Claims/Indigenous and Treaty Rights	Equally Preferred	Equally Preferred
<b>Financial Factors</b>		
Capital and Operational Costs	Somewhat Less Preferred	Less Preferred

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Criteria	Comparison to the Do Nothing Alternative	
	Alternative 1: Expand the St. Marys Landfill	Alternative 2: Export Waste to the Twin Creeks Landfill
<b>Technical Factors</b>		
Technical Ability to Carry Out Each Alternative	Preferred	Somewhat Preferred
<b>Overall Preference</b>	<b>Preferred</b>	<b>Less Preferred</b>

### 3.10 Advantages and Disadvantages of the Alternatives to the Undertaking

Based on the discussion of net effects in Section 3.8, the advantages and disadvantages of the proposed Undertaking and Alternative to the Undertaking are summarized in Table 3-21.

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**Table 3-20: Summary of Advantages and Disadvantages**

<b>Do Nothing</b>	<b>Alternative 1: Expand the St. Marys Landfill</b>	<b>Alternative 2: Export Waste to the Twin Creeks Landfill</b>
<b>Advantages</b>		
<ul style="list-style-type: none"> <li>• Does not have any effect on the natural, cultural, or social environment beyond baseline conditions.</li> <li>• Does not have a capital or operational cost.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimal transportation impacts.</li> <li>• Tipping fees are set and controlled by the Town.</li> <li>• Promotes local employment and economy.</li> <li>• Town maintains social and economic benefits of having disposal capacity for current and future residents and IC&amp;I sectors.</li> <li>• Makes efficient use of land that would otherwise have few alternative uses.</li> <li>• Provides a 40-year solution.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces greenhouse gas emissions through landfill gas collection and flaring.</li> <li>• Improves noise, dust, and odour concerns for residents adjacent to the St. Marys Landfill.</li> <li>•</li> </ul>

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Do Nothing	Alternative 1: Expand the St. Marys Landfill	Alternative 2: Export Waste to the Twin Creeks Landfill
<b>Disadvantages</b>		
<ul style="list-style-type: none"> <li>Does not provide a solution to the Problem Statement.</li> </ul>	<ul style="list-style-type: none"> <li>Results in a higher emissions potential as a result of the lack of LFG collection when compared to Twin Creeks.</li> <li>Uses a very small amount of WWTP capacity that could otherwise be used for future development.</li> <li>Causes temporary impacts to natural features, including potential habitat for species at risk and aquatic habitat that will require restoration and compensation.</li> <li>May effect Cultural Heritage Resources.</li> <li>Requires more permits and approvals and engineering design.</li> </ul>	<ul style="list-style-type: none"> <li>Does not provide a solution for the full 40-year planning period.</li> <li>Costs may fluctuate over the planning period and Town does not control cost increases.</li> <li>May result in the loss of a small number of jobs in St. Marys.</li> <li>May negatively affect businesses in St. Marys that rely on lower cost waste transportation and disposal at the St. Marys Landfill.</li> <li>Results in increased trucking emissions and traffic impacts on truck route.</li> </ul>

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### **3.11 Input Received during Phase 1, Evaluation of Alternatives to the Undertaking**

Consultation with potentially affected and other interested parties is a key component of the Environmental Assessment process. Consultation is documented in detail in Section 10.0. A summary of the consultation carried out during Phase 1 is as follows:

- A Notice of Acceptance of the Terms of Reference and Commencement of the EA was published on February 9 and 18, 2015 in the St. Marys Journal Argus and St. Marys Independent (refer to the Consultation Record, Vol IV, Appendix A).
- A copy of the notice was emailed or mailed to the contacts listed in Vol IV, Appendix A, which include:
  - Various agencies with an approval or jurisdictional relevance to the project;
  - Various stakeholder groups and organizations with potential interest in the project;
  - Utilities with infrastructure in the vicinity; and,
  - Fifty-two landowners with property within 1km of the existing landfill site.
- A copy of the notice was emailed or mailed to fourteen Indigenous communities or organizations (refer to Vol IV, Appendix A, for a contact list), including:
  - Caldwell First Nation;
  - Aamjiwnaang First Nation;
  - Chippewas of Kettle and Stony Point First Nation;
  - Chippewas of the Thames First Nation;
  - Delaware Nation (Moravian of the Thames);
  - Haudenosaunee Development Institute;
  - Mississaugas of the Credit First Nation;
  - Munsee-Delaware First Nation;
  - Oneida of the Thames First Nation;
  - Six Nations of the Grand River;
  - Walpole Island First Nation (Bkejwanong Territory;)
  - Windsor-Essex Métis Council;
  - Métis Nation of Ontario; and,
  - Association of Iroquois and Allied Indians.
- Indigenous communities and agencies also received a response form to complete and return with initial comments and indication of their interest in remaining on the Project Contact List.
- A meeting was held with Chippewas of the Thames First Nation (COTTFN) on February 4, 2014. Meeting minutes and follow-up correspondence are provided in the Consultation Record, Vol IV, Appendix H.



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- Several Indigenous communities had expressed an interest in visiting the landfill site during preparation of the Terms of Reference. In follow-up to these requests, Aamjiwnaang First Nation, Caldwell First Nation, Chippewas of Kettle and Stony Point First Nation, Chippewas of the Thames First Nation, Six Nations of the Grand River and Walpole Island First Nation were offered an opportunity to visit the landfill. Ultimately, none of the communities attended. A record of correspondence is provided in the Consultation Record, Vol IV, Appendix H.
- Several Indigenous communities expressed an interest in the EA. Correspondence regarding consultation process and capacity funding were received from the Chippewas of the Thames First Nation and Aamjiwnaang First Nation. In addition, a meeting was held with the Haudenosaunee Development Institute (HDI) on February 29, 2016. Discussions related to rights associated with the Nanfan Treaty and HDI's application process, including funding.

The Town noted its inability to provide significant funding to each of the interested communities. A suggestion to fund a single review to be coordinated among all communities was proposed but was ultimately determined to be untenable. A record of correspondence is provided in the Consultation Record, Vol IV, Appendix H.

- A Public Information Centre was held on August 26, 2015 at the end of Phase 1 of the EA process. A copy of the notice was emailed or mailed to all of the agency, stakeholder, landowner and Indigenous contacts who received the Notice of Commencement. In addition, information was posted to the Town's website and was published twice in the St. Marys Independent and St. Marys Journal Argus. Information regarding the PIC can be found in the Consultation Record in Vol IV, Appendix B.

Several comments were received from the public and interested stakeholders during Phase 1 of the EA, as summarized in Table 3-22.

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**Table 3-21: Comments Received During Phase 1 of the EA (Alternatives to the Undertaking)**

Commentor	Comment	Comment Type	Study Team Response	How Addressed in EA
Local Landowner	Concerned with drinking water well quality	Verbal	<p>Groundwater quality is monitored on a regular and ongoing basis as part of the current landfill operations. To date, there are no concerns related to the landfill's impact on off-site groundwater quality. Landfill monitoring reports are available online at the Town's website.</p> <p>The Hydrogeological Work Plan includes a drilling and monitoring program to understand soil and groundwater conditions. Impacts to ground water quality are one of many criteria used to evaluate the impacts of the Alternative Methods for the expansion of the landfill.</p> <p>Recommendations will be made for the Preferred Alternative to minimize groundwater (and surface water) impacts.</p>	Potential impacts to groundwater quality were studied in the Hydrogeology Study provided in Vol III, Appendix C. Potential effects are summarized in Sections 7.5 and 9.0. No impacts to drinking water are expected.
Local Landowner	Concerned with dust from site entrance.	Verbal	<p>Through discussion with the resident, it was found that a significant dust concern occurred a few years ago during the reconstruction of Hwy 7. Excess soils from that project were brought to the landfill for use as cover, to build berms, etc. The truck traffic on the access road caused excessive dust until calcium chloride was spread. Regular site operations have not been as problematic, though some dust from the site access road is occasionally generated.</p> <p>Relative to current operations, dust concerns are taken seriously by the Town. The resident was encouraged to contact the Town if dust becomes an issue again.</p> <p>Impacts to air quality, including dust, are one of many criteria to be used to evaluate the impacts of the Alternative Methods for the expansion of the landfill,</p> <p>Recommendations will be made for the Preferred Alternative to minimize and mitigate dust generation for the expanded facility.</p>	Potential impacts to air quality as a result of dust were studied in the Emission Summary and Dispersion Modeling Report provided in Vol III, Appendix A. Potential effects are summarized in Sections 7.4 and 9.0. Dust is expected to be managed through standard measures, including the application of dust suppressants during construction and applying daily landfill cover during operations. No significant effects associated with dust are expected to be experienced by local residents.
St. Marys Cement	Concerned that thermal treatment has been discarded as an alternative at this stage in the study. Offered suggestion that kiln at St. Marys Cement could be used for a waste-to energy solution.	Verbal	Thermal treatment was discarded as an option during the TOR because it is not financially feasible for the Town based on the quantities of waste generated. SMC is not at a stage where it could begin accepting waste within the timeframe required by the Town. Also, there are questions as to what portions of the waste disposal stream would be acceptable in the kiln. It is not believed that such a facility could be financially or technically viable. The Town is always open to discussions with SMC.	Thermal treatment was not considered as an option. Communication with SMC continued throughout the EA. Refer to Section 10.0.
Union Gas Limited (August 13, 2015)	Requested additional information about the EA. Noted that there is a natural gas main located in the east side of Water Street S., and a station southwest of the existing landfill site.	Email, August 13, 2015 (a copy is provided in Vol IV, Appendix I)	Email response, providing details of the EA and a link to the Town's website. Requested that Union Gas provide a more detailed description of their facilities, including location details, for consideration by the EA Team. No response was received. Further consultation with Union Gas to be held during the detailed design stage.	A commitment to follow-up with Union Gas during the detailed design stage has been made. Refer to Section 11.1.

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Commentor	Comment	Comment Type	Study Team Response	How Addressed in EA
Chippewas of the Thames First Nation	Expressed concerns with ground water and water quality in the Thames River, noting that the Thames River is important to the community. The community holds treaty rights, particularly related to hunting and fishing, downstream of the landfill. A request for recent landfill monitoring reports was made. It was also noted that the COTTFN have a preliminary traditional land use plan which could be shared	Meeting, February 4, 2014 (minutes are provided in Vol IV, Appendix H)	Annual monitoring reports were provided for the years 2010, 2011 and 2012. At the time of the meeting, the EA was just being initiated. It was noted that impacts to surface and groundwater would be considered as part of the EA process. Follow-up requests were made to obtain the traditional land use plan but to date it has not been provided.	<p>Impacts to the Thames River are addressed in Sections 7.6, 7.7.2, 7.12 and 9.0.</p> <p>Mitigation measures are described in each of these sections to ensure that the Thames River is not impacted.</p> <p>Further consultation will occur with COTTFN, as documented in Section 11.1.</p>

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### **3.12 Preferred Undertaking**

Based on the evaluation presented in Section 3.8, the advantages and disadvantages of each alternative and input from the public, it was determined that:

- Doing Nothing does not address the Town's waste management needs and obligations and is not a feasible solution to the Problem Statement.
- Exporting waste to the Twin Creeks Landfill has some advantages in that impacts to the Natural Environment at the St. Marys Landfill site are minimized.
- Expanding the St. Marys Landfill has greater advantages with respect to Socio-economic criteria, Financial Factors, and Technical criteria.
- Both options were equally preferred based on Cultural Heritage criteria.

Overall, expanding the St. Marys Landfill is preferred.

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#### **4.0 Phase 2: Review of the Environmental Assessment Requirements**

Through the evaluation of Alternatives To the Undertaking, completed in Section 3.0, it was determined that expanding the existing St. Marys Landfill is preferred over exporting waste to another jurisdiction.

If exporting waste had been selected, this EA would have concluded as an Undertaking involving waste export is not subject to this EA process.

Under Ontario Regulation 101/07, the Waste Management Projects Regulation, landfill expansions in exceedance of 100,000 m<sup>3</sup>, are subject to the Individual EA process under the EA Act. As the Town's waste disposal needs exceed this volume, this EA has continued using the scoped process identified in the Terms of Reference.

As such, the remainder of this document describes the Evaluation of Alternatives Methods, the impacts and mitigation associated with the preferred Undertaking, consultation measures and commitments to additional actions to be taken during the design, operations, and final decommissioning of the landfill.

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## **5.0 Phase 3: Redefine the Purpose and Rationale for the Undertaking**

In the early stages of this Study the description of the Undertaking was broad to allow for the variety of solutions under investigation. In Section 3.3, the Undertaking was defined as, “the proposed changes that are made to address the Town’s future municipal waste disposal needs.”

As it has been determined that expanding the St. Marys Landfill is the preferred solution, the Problem Statement and the rationale for the Undertaking can be redefined to:

*The expansion of the St. Marys Landfill in order to provide the necessary capacity to fulfill the Town’s post-diversion solid waste disposal needs for the next 40 years.*

The rationale for the Undertaking was also reviewed. It was determined that the rationale and justification for the Undertaking, provided in Section 3.1, remains valid. Please note that the above Problem Statement supersedes the Preliminary Problem Statement noted under Section 3.2.

The existing St. Marys Landfill reached its originally approved capacity in January 2016. To maintain operations during preparation of this EA, the Town applied for and received ECA Notices (amendments) allowing continued use. The current Notice allows operation through September 30, 2022. As required by the ECA, the Town will apply to the Ministry for further operation by July 31, 2022.

MECP is not expected to extend the site’s ECA indefinitely without a long-term plan to manage the Town’s waste. The Town is responsible for the management of solid waste generated by the Town, its residents and local industry, businesses, and institutions. Wastes generated from other communities or entities are not managed by the Town and there is no intent to accept waste from other communities in the future, as noted in a Town letter, dated December 18, 2019 provided in Volume IV, Appendix A. Therefore, the Town is responsible for developing a long-term management plan and is doing so through the Environmental Assessment Act planning process. Through an evaluation of Alternatives To the Undertaking, it was determined that expanding the existing St. Marys Landfill is the preferred means to address the Town’s waste disposal needs.

Based on the calculations provided in Section 3.1.3, the expanded landfill must have a capacity of 708,000 m<sup>3</sup> (as noted in Section 3.1.3.8, this includes 73,050 m<sup>3</sup> of capacity that has already been approved and filled through various interim ECA amendments) and a future waste density of 550 kg/m<sup>3</sup>, results in 389,400 tonnes of waste capacity. The Town is requesting the remaining, unapproved volume of 634,950 m<sup>3</sup> (708,000 m<sup>3</sup> capacity minus the approved capacity of 73,050 m<sup>3</sup> as of the January 10, 2022 interim ECA), via the EA process.

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## **6.0 Phase 4: Define the Parameters of the Study**

This Phase of the EA frames the parameters for the evaluation of Alternative Methods for Carrying out the Undertaking (hereafter referred to as the Alternatives). The parameters of the study include:

- The Study Areas (see Section 6.1);
- The timeframe to be considered (see Section 6.2);
- The methodology for characterizing the existing environment (see Section 6.3);
- The existing environment within which the Undertaking will be implemented (see Section 6.4).
- The Alternatives to be assessed (see Section 7.1); and
- The indicators used to measure effects for the comparative evaluation (see Section 7.2).

### **6.1 Study Area**

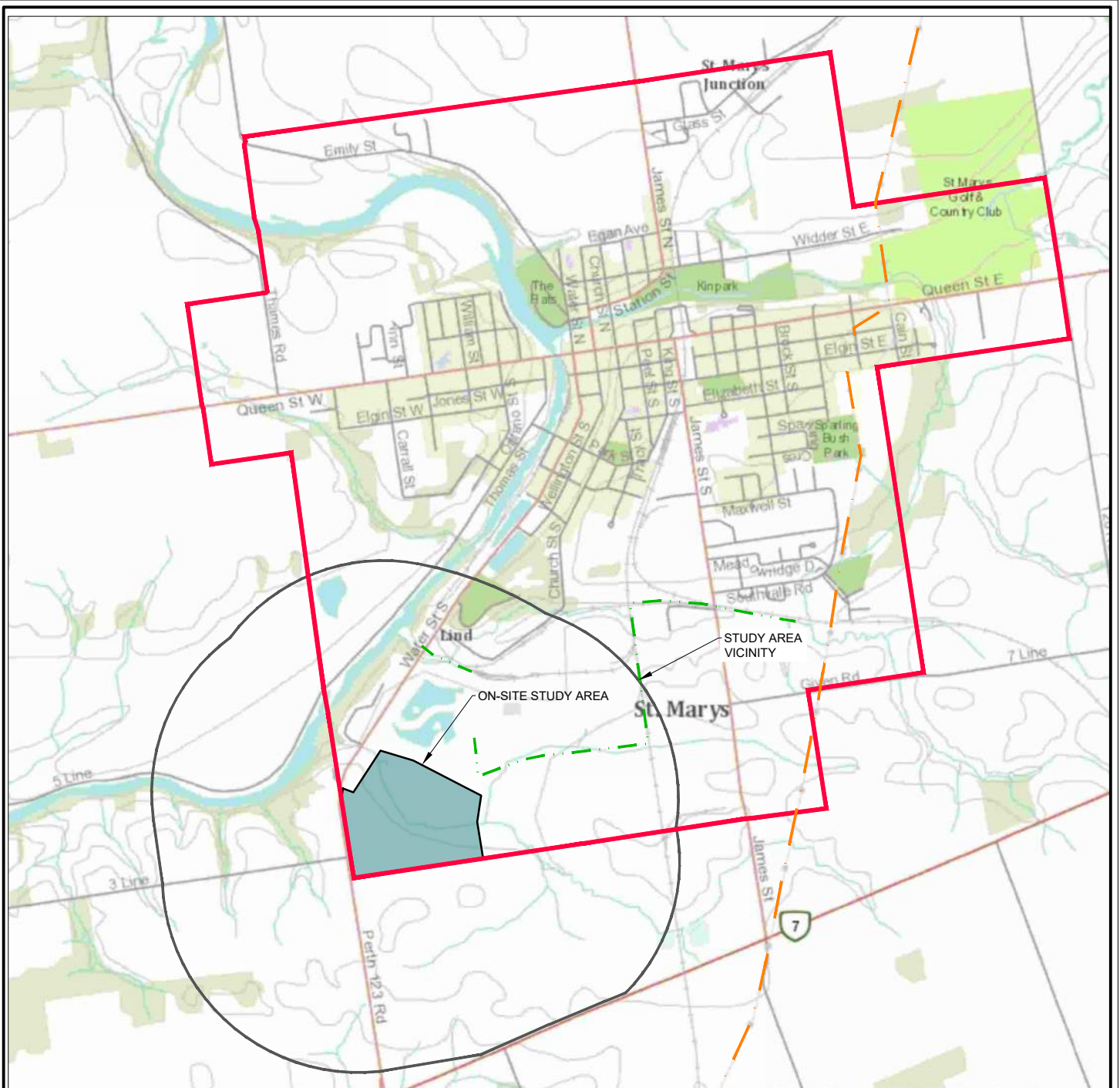
In accordance with the Code of Practice – Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario (MOECC, January 2014), the Study Area is “the area within which activities associated with the undertaking will occur and where potential environmental effects will be studied.”

The effects of the landfill expansion are likely to be felt at the landfill site and on surrounding lands. As such, two specific Study Areas have been identified, which were used as the basis for defining and characterizing the natural, social, cultural, and built environments that may be potentially affected by the expansion.


The Study Areas are as follows:

- On-Site Study Area – includes all lands associated with the St. Marys Landfill, the 37 ha property identified as 1221 Water Street South, St. Marys.
- Study Area Vicinity – all lands within a 1,000 m radius of the On-Site Study Area.

The Study Areas are presented on Figure 6-1.



**LEGEND:**

-  ST. MARYS LANDFILL
-  TOWN BOUNDARY
-  ELECTRICAL DISTRIBUTION LINES
-  ELECTRICAL TRANSMISSION LINES

Map Source:  
Background mapping obtained from  
arcgisonline base maps, Natural Resources  
Canada.



Client

**TOWN OF ST. MARYS**

Figure Title

**FUTURE SOLID WASTE DISPOSAL EA**  
**STUDY AREAS**

Drawn

SK

Checked

TR

Date

JUNE 2022

Scale

N.T.S.

Project No.

300032339

Figure No.

**6-1**



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## 6.2 Timeframe of the Study

The EA will consider the potential effects on various environmental components over the following time periods:

- Construction of the new landfill footprint- 2023<sup>39</sup>;
- Operation of the landfill over a 40-year period, ending December 31, 2056<sup>40</sup>; and
- Closure of the landfill beginning in 2057.

The site would begin a post-closure care period in 2057. For planning purposes, a 50-year post-closure care period was assumed.

Note that for the purposes of planning period capacity calculations, the waste placed from January 1, 2017 is considered part of the capacity. As discussed in Section 3.1.3.8, this capacity is incorporated into the planning period despite the waste being already added to the site.

## 6.3 Methodology for Characterizing the Existing Environment

Existing environmental conditions have been characterized in further detail. That characterization was to be completed using a combination of:

- Background data sources;
- Field studies and on-site investigations;
- Surveys; and
- Other means to be identified in detailed Work Plans for each primary discipline.

The following Work Plans were created in the early stages of the EA process:

- Air Quality, Noise and Vibration Work Plan;
- Hydrogeological Work Plan;
- Ecological Work Plan;
- Archaeological and Cultural Heritage Work Plan; and
- Socio-economic Work Plan.

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<sup>39</sup> Construction is anticipated to commence in 2023 and will occur prior to the development of new cells as discussed in Section 8.4. Construction activities will occur while the landfill is operating.

<sup>40</sup> As described in Section 3.1.3.8, the 40-year planning period is assumed to have commenced on January 1, 2017. All waste disposed after that time is assumed to be part of the new capacity being approved through this EA.

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Work Plans provided a detailed methodology for characterizing each component of the environment and how the evaluation would be carried out. Work Plans are provided in Volume II, Appendices A through E of this report.

Work Plans were circulated to relevant agencies for review and comment. Work Plans were also circulated to Indigenous communities and presented to the public at the first Public Information Centre. The actual field studies and the assessment methodology took into account any comments received on the Work Plans. Comments are presented as part of the consultation summary in Volume IV, Appendix E. Methodologies used to describe the existing environment are included in the following sections.

## **6.4 Description of the Existing Environment**

### **6.4.1 Natural Environment**

#### **6.4.1.1 Air Quality and Odour**

##### **Methodology**

The methodology for characterizing existing air quality and odour is documented in the Air Quality, Noise and Vibration Work Plan provided in Volume II.

Dispersion modelling was completed in accordance with the MECP's Air Dispersion Modelling Guideline for Ontario, ver 3.0 (2016). The following dispersion model and pre-processors were used in the assessment:

- AERMOD dispersion model (v. AERMOD\_MPI\_Lakes\_16216r);
- AERMAP surface pre-processor (v. AERMAP\_EPA\_16216); and
- BPIP building downwash pre-processor (v. 0474).

MECP provided site specific meteorological data based on AERMOD v16216 for use in this assessment.

Terrain elevation contour data was downloaded from Ontario Digital Elevation Model Data set and processed using the AERMOD terrain processor AERMAP. AERMAP determines base terrain elevation using the DEM data for all sources, receptors, and buildings, and provides the user with a suitable input file for use with AERMOD.

##### **Existing Air Quality and Odour**

Existing air quality and odour conditions were determined in the Landfill Expansion Emission Summary and Dispersion Modelling Report provided in Volume III, Appendix A.

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Modelling of existing conditions is provided in Table 6-1. The modelled emissions are based on the size and location of the open face of the landfill, the number and type of equipment and vehicles used at the site and the landfill's daytime operating hours<sup>41</sup>. The assessment examined the impact of 13 different contaminants<sup>42</sup>. The various air quality standards are based on averages over various time periods (i.e., some standards refer to air quality averages over a ten-minute period, 24-hour period or a year). Some standards also include multiple averaging periods for the same contaminant (i.e., there is a standard for the quantity of contaminants over a 10-minute period and a standard for the same contaminant over a 24-hour period). The various periods identified in the relevant provincial and federal standards are listed in Table 6-1.

There is no provincially regulated standard for odour. For the purposes of modelling, the composition of waste was assumed to be the same as the Ridge Landfill in Blenheim, Ontario. The Ridge Landfill was used as the composition of waste in the St. Marys landfill was not available; however, it is likely that the St. Marys landfill receives less putrescent and organic waste and more waste from industrial, commercial and institutional uses than the Ridge Landfill. It is the putrescent waste that is the most significant cause of odours. Although modelling suggested that there is a high level of odour at the landfill boundary, as noted in Table 6-1, this is likely an overrepresentation of actual odour experienced, based on the landfill's limited record of complaints.

All of the contaminants except odour and particulate matter are less than 50% of their respective criteria under the worst-case scenario. The contaminant with the highest off-property impact was particulate matter at 74% of the 24-hour criterion of 120 µg/m<sup>3</sup>.

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<sup>41</sup> The landfill currently operates four days per week between 8:30 am and 4:30 pm. There is no intent to change this; however, unforeseen circumstances of the next forty years could result in a change to operating hours. Therefore, for modelling purposes it was assumed that the landfill could operate any time during daylight hours, i.e., 7 am to 7 pm.

<sup>42</sup> The 50 contaminants known to be present in landfill gas were considered; however, the most sensitive 13 contaminants were assessed. When results showed concentrations of these at limits below the provincial standards, it can be extrapolated that the remaining contaminants will also be below provincial limits.

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**Table 6-1 Existing Levels of Air Contaminants**

Contaminant	Modelled Existing Conditions ( $\mu\text{g}/\text{m}^3$ )	Criteria ( $\mu\text{g}/\text{m}^3$ )	Averaging Period of Criterion	Regulation Schedule # <sup>43</sup>	Percentage of Criteria (%)
PM10	24.2	50	24hrs	AAQC	48.3%
PM2.5	2.5	27	24hrs	CAAQS 2020	9.4%
PM2.5	0.4	8.8	1 year	CAAQS 2020	4.4%
Odour	99.4	N/A	10 mins		
Methane	4249.0	37330	24 hrs	SL-PA	11.4%
Vinyl chloride	0.2	1	24 hrs	AAQC	24.2%
Vinyl chloride	0.03	0.2	1 year	AAQC	12.7%
Dimethyl sulphide	1.2	30	10 mins	AAQC	4.1%
Dichlorofluoromethane	0.1	500	24 hrs	SL-JSL	0.0%
Chlorobenzene	0.1	4500	10 mins	AAQC	0.0%
Chlorobenzene	0.0	3500	1 hr	AAQC	0.0%
Carbon Dioxide	11660.0	255800	24 hrs	SL-PA	4.6%
Carbon monoxide	201.2	36200	1 hr	AAQC	0.6%
Carbon monoxide	98.5	15700	8 hrs	AAQC	0.6%
Hydrogen sulphide	3.1	13	10 mins	AAQC	23.8%
Hydrogen sulphide	0.6	7	24 hrs	AAQC	9.3%
Nitrogen oxides	26.2	400	1 hr	AAQC	6.5%
Nitrogen oxides	26.2	78.96	1 hr	CAAQS 2025	33.1%
Nitrogen oxides	7.1	200	24 hrs	AAQC	3.6%

AAQC= Ontario's Ambient Air Quality Criteria  
CAAQS= Canadian Ambient Air Quality Standards

SL-PA= Screening Level- Previously Approved  
SL-JSL= Screening level- Jurisdictional Screening Level

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<b>Contaminant</b>	<b>Modelled Existing Conditions (µg/m<sup>3</sup>)</b>	<b>Criteria (µg/m<sup>3</sup>)</b>	<b>Averaging Period of Criterion</b>	<b>Regulation Schedule # <sup>43</sup></b>	<b>Percentage of Criteria (%)</b>
Nitrogen oxides	0.6	22.56	1 year	CAAQS 2025	2.9%
Total particulate matter	89.2	120	24 hrs	AAQC	74.3%
Total particulate matter	14.0	60	1 year	AAQC	23.3%

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Under baseline conditions, the worst-case odour effects occurs at the property line. The highest impact is 99 Odour Units (OU). This is an estimate occurring at the landfill boundary and appears to be a significant over-representation of existing conditions under a worst-case scenario. Odour must be assessed at sensitive receptors, none of which are on the property line of the landfill. Based on the landfill's complaints record, the impact of 6 OU appears to match the level of odour at which complaints tend to be received. Under current conditions, approximately ten receptors are estimated to experience impacts of 6 OU or more up to 0.7% of the time. The likelihood of odour impacts under existing conditions is summarized in Table 6-2. The location of receptors is shown in Figure 6-2.

Complaints due to odour have been relatively minimal. In 2018, the Town revised its operating practises to use a thicker cover and more localized cover stockpiles. No odour-related complaints were received in 2019 to 2020.

Complaints received between 2013 and 2020 are as follows:

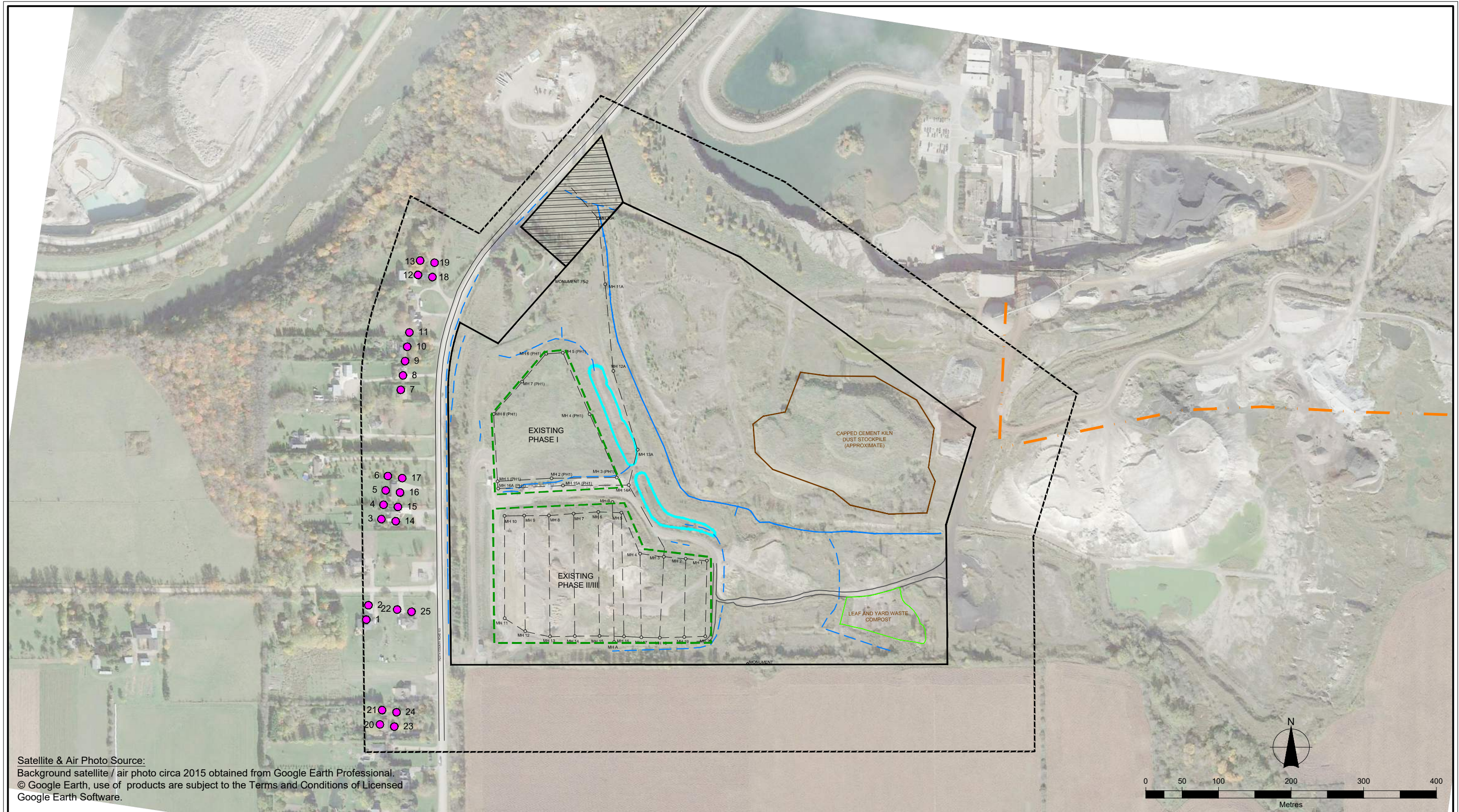
- 2013 – One (1) complaint from a resident on Line 3;
- 2014 – Two (2) complaints from residents on Perth Road 123;
- 2015 – Six (6) complaints from two (2) residents on Perth Road 123 (five (5) directly from residents, one (1) via MECP);
- 2016 – Two (2) complaints from residents on Perth Road 123;
- 2017 – No formal complaints reported;
- 2018 – Five (5) complaints from two (2) residents on Perth Road 123;
- 2019 – No formal complaints reported; and
- 2020 - No formal complaints reported.

**Table 6-2 Existing Odour Conditions**

Receptor	< 1 OU (%)	1 to 6 OU (%)	> 6 OU (%)
1	97.62%	2.38%	
2	97.52%	2.48%	
3	96.96%	2.57%	0.47%
4	96.98%	2.50%	0.52%
5	97.19%	2.28%	0.53%
6	97.32%	2.23%	0.45%
7	97.83%	2.13%	0.04%
8	97.86%	2.13%	0.01%
9	98.03%	1.97%	


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<b>Receptor</b>	<b>&lt; 1 OU (%)</b>	<b>1 to 6 OU (%)</b>	<b>&gt; 6 OU (%)</b>
10	98.14%	1.86%	
11	98.23%	1.77%	
12	98.58%	1.42%	
13	98.65%	1.35%	
14	96.68%	2.75%	0.58%
15	96.71%	2.59%	0.70%
16	96.89%	2.43%	0.69%
17	97.10%	2.33%	0.58%
18	98.56%	1.44%	
19	98.65%	1.35%	
20	98.66%	1.34%	
21	98.52%	1.48%	
22	97.35%	2.65%	
23	98.61%	1.39%	
24	98.51%	1.49%	
25	97.34%	2.66%	



Satellite & Air Photo Source:  
 Background satellite / air photo circa 2015 obtained from Google Earth Professional.  
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LEGEND	
	PROPERTY BOUNDARY
	120M BUFFER
	EXISTING WASTE FOOTPRINT
	WATERCOURSE
	DRAINAGE SWALE
	LEACHATE COLLECTION SYSTEM
	STORM WATER MANAGEMENT BASIN
	LEACHATE COLLECTION SYSTEM MANHOLE
	COMPOST AREA
	ELECTRICAL DISTRIBUTION LINES
	ODOUR RECEPTOR LOCATION
	CAPPED CEMENT KILN DUST STOCKPILE (APPROXIMATE)
	RIGHT-OF-WAY AND SEWER EASEMENT



**BURNSIDE**

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Client

**TOWN OF ST. MARYS**

Figure Title			
<b>FUTURE SOLID WASTE DISPOSAL EA</b>			
LOCATION OF ODOUR RECEPTORS			
Drawn	Checked	Date	Figure No.
SK	TR	JUNE 2022	<b>6-2</b>
Scale		Project No.	
1:5000		300032339	



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### 6.4.1.2 Noise

#### Methodology

The methodology for characterizing existing noise levels is documented in the Air Quality, Noise and Vibration Work Plan provided in Volume II.

In summary, noise modelling was completed in accordance with the MECP’s “Noise Pollution Control” (NPC) series of documents. Road traffic assessments were done using the MECP’s ORNAMENT methodology as implemented in their program STAMSON v5.04.

The impact of on-site equipment at receptors off-property were assessed using Predictor v12’s ISO 9613-2 implementation.

Closest sensitive residential Points of Reception (POR) or Outdoor Points of Reception (OPOR), also referred to as “receptors” were identified from aerial photographs and are summarized in Table 6-3. Receptors were more specifically located in the plane of a window where sound originating from the landfill is received, assumed to be at a height of 1.5 m and 4.5 m unless otherwise stated.

**Table 6-3 Points of Reception**

<b>POR</b>	<b>POR Description</b>	<b>POR Location</b>	<b>Height (m)</b>
POR_01_A	Two Storey Residential House	1025 Water Street South	1.5
POR_01_B	Two Storey Residential House	1025 Water Street South	4.5
OPOR_01_A	Outdoor Receptor	1025 Water Street South	1.5
POR_02_A	Two Storey Residential House	1774 Water Street South	1.5
POR_02_B	Two Storey Residential House	1774 Water Street South	4.5
OPOR_02_A	Outdoor Receptor	1774 Water Street South	1.5
POR_03_A	One Storey Residential House	1827 Water Street South	1.5
POR_03_B	One Storey Residential House	1827 Water Street South	4.5
OPOR_03_A	Outdoor Receptor	1827 Water Street South	1.5
POR_04_A	Two Storey Residential House	4461 3 Line	1.5
POR_04_B	Two Storey Residential House	4461 3 Line	4.5

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POR	POR Description	POR Location	Height (m)
OPOR_04_A	Outdoor Receptor	4461 3 Line	1.5
POR_05_A	Two Storey Residential House	1646 Perth Road 123	1.5
POR_05_B	Two Storey Residential House	1646 Perth Road 123	4.5
OPOR_05_A	Outdoor Receptor for	1646 Perth Road 123	1.5
POR_06_A	Two Storey Residential House	1579 Perth Road 123	1.5
POR_06_B	Two Storey Residential House	1579 Perth Road 123	4.5
OPOR_06_A	Outdoor Receptor	1579 Perth Road 123	4.5

St. Marys Landfill contains three significant sources of noise: on-site traffic, a compactor, and a loader. All noise sources associated with road traffic travelling to/from St. Marys Landfill, as well as all traffic in the Study Area were included in the assessment. Passenger vehicles<sup>44</sup> are generally considered to have negligible noise emissions when travelling at 20 km/h or less. All vehicles are restricted to 20 km/h while on-site so any noise associated with passenger vehicles were excluded.

There is only one equipment operator at the landfill site. The operator therefore runs either the loader or the compactor. There are no times when both pieces of equipment are operated simultaneously. While typically the compactor does not run more than 20 minutes of any one hour, the noise model assumes that the compactor runs for the entire hour so the noise model is very conservative. Operation of the loader instead of the compactor would result in less noise.

The worst-case scenario was selected for investigation. Under this scenario, it was assumed that all relevant on-site noise sources listed above, operate simultaneously and at their maximum load. It was also assumed that operations would occur at their closest point on the landfill to these receptors. These choices mean that there are substantial periods of time when the activity will be substantially less than modelled and/or that activity will be further from the receptors than modelled so the impacts will be less than predicted.

### Existing Noise

Existing off-property sound levels were determined in the Landfill Noise Impact Assessment Report provided in Volume III, Appendix B.

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<sup>44</sup> Passenger vehicles include cars, mini-vans, SUV's, and pick-up trucks.

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Existing conditions were modeled at each of the receptors identified in Table 6-4. Existing conditions were modeled using the modeling programs previously described. Modeling results identified that the highest impact was found at POR\_04\_B with a noise level of 51 dBA. This is lower than the provincial criterion (allowable limit) of 55 dBA. All other receptors also experience noise at a level below the provincially set limit.

**Table 6-4 Existing Noise Conditions**

<b>POR#</b>	<b>Existing Conditions (dBA)</b>
POR_01_A	44
POR_01_B	45
OPOR_01_A	44
POR_02_A	40
POR_02_B	44
OPOR_02_A	37
POR_03_A	47
POR_03_B	51
OPOR_03_A	41
POR_04_A	49
POR_04_B	51
OPOR_04_A	46
POR_05_A	37
POR_05_B	40
OPOR_05_A	37
POR_06_A	30
POR_06_B	32
OPOR_06_A	30

### 6.4.1.3 Groundwater

#### Methodology

Data from various sources was collected and incorporated into an updated Site conceptual model. Background data included the Annual Monitoring Reports for the Landfill that contained geology, hydrogeology, and water quality data for the site dating from 1984. Other background data sources included:

- Published geology and hydrogeology maps and reports;
- Landfill hydrogeological investigations and design documents (1982 and 1992);
- Landfill monitoring reports (2010 to 2015);
- Historic aerial photography and satellite imagery;
- Thames-Sydenham and Region Source Protection Plan; and,

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- Specific data provided upon request from:
  - Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA);
  - Ontario Ministry of Natural Resources and Forestry (MNR);
  - Ontario Ministry of the Environment and Climate Change (MOECC);
  - Upper Thames River Conservation Authority;
  - Environment Canada;
  - Town of St. Marys; and
  - St. Marys Cement Co. (SMC).

Collection of additional field data began in the fall of 2015 and included:

- Test pits excavated east of the existing Phase I and Phase II/III landfill areas, east of the watercourse and around the cement kiln dust stockpile;
- Drive point piezometers installed along the watercourse;
- Existing wells from previous studies that were not part of the annual monitoring were located and water levels and/or water quality samples were obtained;
- Water levels measured monthly in all Site wells for a minimum of six months;
- Surface water flows measured monthly at the upstream surface water station (near DP1) and the downstream surface water station (SP3) through the spring into summer of 2016;
- Geomorphic study of the existing watercourse completed by Matrix Solutions Inc. during the summer of 2015 as part of the Ecological Work Plan; and
- Elevation survey of all test pits, drive points and non-monitoring wells to establish locations, ground elevations and measuring point elevations.

Additional monitoring was conducted in the spring of 2022 and included:

- Five monitoring wells and two boreholes installed between the watercourse and the CKD pile.
- Water level, hydraulic conductivity, soil quality, groundwater flow and groundwater quality sampled in each of the new wells and boreholes.

The Hydrogeology Study Report in Volume III, Appendix C provides a detailed description and analysis of the existing geologic conditions in the Study Area Vicinity and the On-Site Study Area.

#### **6.4.1.3.1 Human-made Influences on Groundwater Flow**

Groundwater flow in the bedrock below the Landfill Site is from the east toward the west and northwest. There is a similar flow direction through the overburden. However, flow

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along major rivers are toward those rivers. Therefore, in the St. Marys area, flow in the overburden is toward Trout Creek and the North Thames River.

There is significant human influence on flow direction at the landfill property and surrounding lands. The surface of the landfill property has been impacted by industrial activity since around 1960. It was around that time that the quarry operation to the north progressed onto what is now the landfill site. It is likely that there were impacts to the groundwater prior to that time with earlier dewatering of the quarry. By 1978, none of the landfill property was in a natural state. The topography of the landfill property today is a result of the overburden stripping/filling east of the watercourse, kiln dust stockpiling, a previous realignment of the watercourse, clay mining over most of the Site west of the watercourse, and construction of the landfill. Figure 6-3 shows the site features.

The highest elevation on the site today is the cement kiln dust stockpile (CKD) at 334 masl<sup>45</sup>. from historic SMC operations. Historic aerial photographs show that the stockpile has been in place for approximately 30 years. The elevation of the existing fill area is approximately 327 m. The lowest elevations on the site occur along the watercourse. This channel enters the east side of the site at an elevation of approximately 310.0 masl and exits at the north end under Water St. S. at 306.8 masl. Water St. S. is a topographic ridge on the west side of the site and acts as a drainage divide. West of the ridge, runoff flows to the Thames River. East of the road, runoff is eastward toward the landfill stormwater retention basins and the watercourse.

The proximity of the SMC quarries to the landfill and the potential for mutual interference in the future makes the quarry activity important to the landfill assessment. SMC has historically dewatered both the plant north of the landfill and the Thomas Street Quarry west of Water St. S. They have also used water supply wells on the plant site to provide processing water.

Dewatering at the plant site quarry is expected to continue for the life of the landfill since the cement plant is located on the quarry floor. Communication with the SMC Environmental Coordinator in 2015 confirmed that there are no plans for future dewatering locations. Based on current resources and production assets, the estimated lifespan of the two quarries is approximately 60 years.

Dewatering of the quarry below the water level in the bedrock will affect the water levels in the bedrock at the landfill. There are no documented pre-quarry water levels at the landfill site as the quarry pre-dates the landfill. Therefore, the quarry impact on landfill water levels cannot be known. The dewatering at the Thomas Street quarry to levels below 280 m will be depressing the bedrock water levels in that area, but natural flow is

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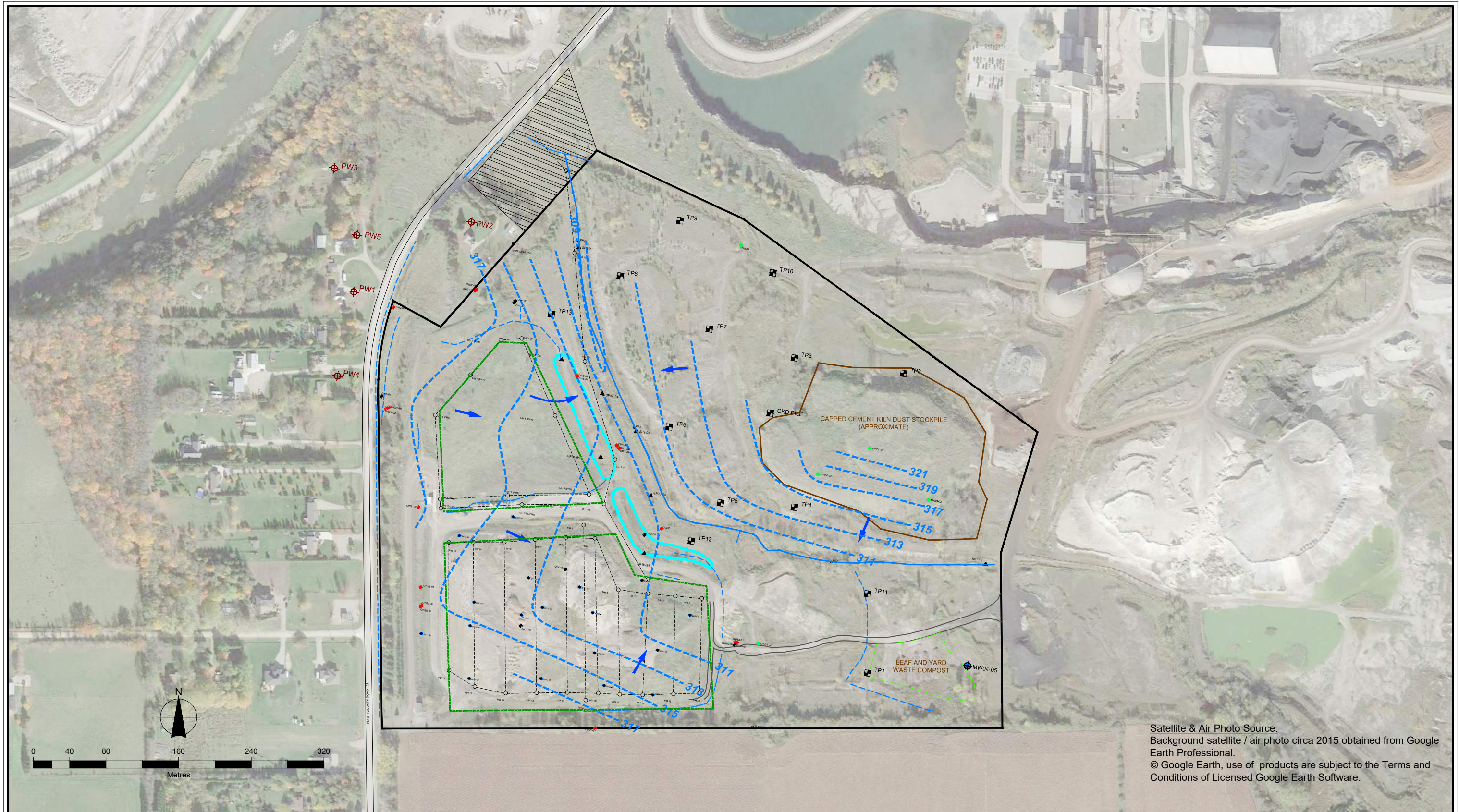
<sup>45</sup> Meters above sea level

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from the landfill toward the quarry. The dewatering may be steepening the gradient, thereby increasing the flow rate, but not affecting flow direction.

The northeast portion of the landfill property contains a Cement Kiln Dust (CKD) stockpile from historic SMC operations. Historic aerial photographs show that the stockpile has been in place for approximately 30 years. The cap and side slopes are well vegetated, and no erosion has been noted during recent field work in the area. The current watercourse wraps around the south and west sides of the stockpile. There is a groundwater mound below the CKD stockpile. Water levels within the stockpile indicate elevated levels and radial flow outwards from the pile, including westward toward the watercourse.

Groundwater flow directions, monitoring wells and landfill features are shown on Figure 6-3.



Satellite & Air Photo Source:  
 Background satellite / air photo circa 2015 obtained from Google Earth Professional.  
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LEGEND	
	PROPERTY BOUNDARY
	EXISTING LIMIT OF WASTE
	WATERCOURSE
	LEACHATE COLLECTION SYSTEM
	STORM WATER MANAGEMENT BASIN
	LANDFILL OBSERVATION WELL
	LANDFILL OBSERVATION WELL (ABANDONED AND SEALED)
	EA MONITORING WELL
	BOREHOLE
	PRIVATE DOMESTIC WELL (APPROXIMATE LOCATION)
	SURFACE WATER MONITORING LOCATION
	TEST PIT
	DRIVE POINT PIEZOMETER
	INTERPRETED GROUNDWATER CONTOUR (masl)
	INTERPRETED GROUNDWATER FLOW DIRECTION
	RIGHT-OF-WAY AND SEWER EASEMENT

<b>TOWN OF ST. MARYS</b>	

Figure Title			
<b>FUTURE SOLID WASTE DISPOSAL EA</b>			
GROUNDWATER CONDITIONS			
Client	Drawn	Checked	Date
	SK	JH	JUNE 2022
	Scale	Project No.	Figure No.
	1:4000	300032339	<b>6-3</b>

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#### **6.4.1.3.2 Existing Geology**

##### **Overburden**

The regional overburden is the result of successive glacial till and inter-till deposits. The large continental ice sheets alternated between advances (when glacial tills were laid down) and retreats (when meltwater deposited layers of sorted gravel, sand, silt, and clay). The inter-till meltwater deposits can be small and isolated or significant and regional. On the landfill site, they typically provide more permeable soils than the surrounding till.

The typical stratigraphic sequence (i.e., layers of material) from the surface to the bedrock are as follows:

**Lacustrine:** Little of this soil remains on the site. Approximately 3 to 5 m of material may have been removed across the site while 7 to 10 m of material was removed along the south edge of the site. Most of the soil logs on site record till at surface.

**Fill:** At the same general location as the lacustrine soils in the stratigraphic sequence, soil was noted at ground surface east of the watercourse that may have been overburden stripped during quarrying or the previous realignment of the watercourse.

**Upper and Lower Till:** Till was reported at all of the drilling locations on the site. It is of variable thickness across the site. The till is predominantly silt (36 to 55%) with a clay content of 21 to 32% and sand content of 10 to 29%. It is this till that primarily forms that landfill liner.

**Inter-Till Meltwater Deposit:** Found between the upper and lower till, this local unit consists of clay, silt, sand and/or gravel. A seam of sand and gravel is below the existing Phase II/III landfill area. The deposit becomes silt and clay north, east, and south of this seam. The unit is present but discontinuous across the rest of the landfill property. This deposit is more permeable than the surrounding till and creates discontinuous conduits for groundwater movement.

**Till – Bedrock Interface:** Sand was reported between the oldest till and the bedrock at one borehole and two monitoring wells that extended to bedrock. It was not reported in six other boreholes. It is expected to be a very local deposit.

**Bedrock:** The cross-sections show a general downward slope on the bedrock surface from east to west with local variations.



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### 6.4.1.3.3 Leachate Quality

Leachate samples are taken regularly from two manholes on the site:

- MH-1 captures leachate from the original Phase I of the landfill;
- MH-3 captures leachate from the subsequent Phases II and III.

Table 6-5 shows the range of typical leachate parameters reported from 1991 to 2015.

**Table 6-5: Leachate Concentrations 1991 to 2015**

Parameter	Units	MH-1 (Phase I)		MH-3 (Phase II/III)	
		Range	Current	Range	Current
Chloride	mg/L	<40 – 760	423	13 – 3,050	1,760
Conductivity (field)	µS/cm	485 – 7,800	3312	1,320 – 15,700	5,923
BOD	mg/L	4.3 – 250	51	21 – 4,695	232
COD	mg/L	23 – 1,110	131	80 – 7,348	692
Ammonia	mg/L	0.8 – 248	142	32 – 1,132	414
Nitrate	mg/L	<0.1 – 3.84	<2.5	<0.1 – 1.79	<5
Total Phosphorous	mg/L	0.04 – 79.4	0.28	0.45 – 39.9	10.4
Iron	mg/L	0.51 - 694	46.2	1 - 290	1.06
Phenols	mg/L	<0.001 - 0.065	0.025	<0.001 – 1.9	0.072

Leachate sampling from both phases of the landfill show large variations and there is considerable variation during both the active and closed stages. Current concentrations in both phases are mid-range values, relative to the range of historical samples.

The results show concentrations are higher in Phase II/III. This is expected as the Phase II/III is active, and the leachate is younger. Sampling of the Phase I perimeter LCS did not start until 1991, approximately two years before the Phase was completed. Phase I was only active for 9 years, while Phase II/III has been active for 23 years and has a greater mass of waste.

Chloride was identified during the 1992 investigation as the critical contaminant for evaluation of groundwater impact. The chloride concentration in Phase I has declined from the highest recorded concentration of 760 mg/L in 1991 but is still above background. The current chloride concentration in Phase II/III (1,760 mg/L) is typical for landfill leachate and is lower than previous highs of 2,480 to 3,050 mg/L (2003 to 2004).

As expected, ammonia is high, and nitrate is low. Nitrate is expected to increase away from the reducing environment of the landfill. Iron is also high, particularly in Phase I.

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VOC testing has reported sporadic occurrences of selected parameters since testing began in 1991 and 1993 (for Phase I and Phase II/III respectively). The concentration detected in 2014 and 2015 are contained in Table 6-6.

**Table 6-6: 2015 VOC Concentrations**

	<b>Sewer Use By-Law</b>	<b>MH1 (Phase I)</b>	<b>MH3 (Phase II/III)</b>
Chlorobenzene (µg/L)		<1.00	<1.00
Chloroethane (µg/L)		<2.00	<2.00
Benzene (µg/L)	10	3.5	<2.00
Ethylbenzene (µg/L)	60	<1.00	12
Toluene (µg/L)	20	5.6	11
m,p- Xylenes (µg/L)		<2.00	22
o-Xylene (µg/L)		<1.00	7.1
Xylenes (Total) (µg/L)	300	<2.00	29

The results are compared to the Town’s sewer use bylaws, currently *By-Law Number 46 of 2014, Schedule E - Limits for Sanitary and Combined Sewer Discharge*. All concentrations are below the sewer use criteria, indicating that there is no concern with leachate being treated at the Town’s WWTP.

**6.4.1.3.4 Groundwater Quality**

Annual monitoring at the site, outside of the LCS, is conducted in accordance with the requirements of the ECA in place at the time of each round of monitoring. Monitoring of groundwater and surface water on the Site began in 1984. Current monitoring locations are shown on Figure 6-3. Samples of leachate, groundwater and surface water are collected in the spring and fall each year and analyzed for general chemistry, metals, and volatile organic compounds (VOC).

There is little indication of landfill impacts at the site. Downgradient wells in the shallow overburden (OW4-84 and OW36) show only minor impacts. This is due to the combination of the low permeable till and the leachate collection systems (LCS). The LCS has been controlling leachate migration from the landfill footprints since 1993. Leachate levels in the LCS manholes are checked twice yearly. The levels are consistently low indicating that the leachate is being effectively drained and there is no leachate mounding.

OW4-84 (located downgradient of Phase I) has been monitored twice a year since 1984. There was water in the well at every monitoring event from 1984 to February 1993. The Phase I LCS was installed in the early 1990s when the Phase was closed. After 1993, the water levels in OW4-84 declined and the well became intermittently dry. The

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Phase I LCS is capturing leachate from the area upgradient of OW4-84, lowering the water level below the footprint and downgradient of the footprint. The water level elevation west of Phase I is higher than the LCS. The chloride concentrations at OW4-84 from 1984 to 1993 climbed from a background level to a high of 354 mg/L. After 1993, when the LCS was added to Phase I, the concentration declined and by 2002 was again at background.

OW36 (located downgradient of Phase II/III) and overflow from MHB have been added to the monitoring program in recent years. MHB is a manhole at the north end of a drainpipe that passes through the meltwater deposits below the LCS in Phase II/III. Chloride is slightly elevated at these monitoring points with concentrations around 20 mg/L at OW36 and 100 mg/L from MHB. The cause of the slightly elevated concentrations is under investigation. The concentrations are still quite low compared with the leachate chloride concentration of 1,000 to 3,000 mg/L.

Water quality samples from the watercourse since 1985 (as part of the landfill monitoring) have not detected an impact from the landfill or the CKD stockpile. The water quality upstream is typically similar to the water quality downstream.

### **Cement Kiln Dust (CKD) Stockpile**

In 2005, a report on the CKD stockpile was compiled by Golder Associates for SMC. The report estimated the total volume to be approximately 350,000 to 400,000 m<sup>3</sup>. Samples of the material were tested and compared to the 2004 *Soil, Groundwater and Sediment Standards; Table 3: Full Depth Site Conditions in Non-Potable Groundwater, Industrial/Commercial Use*. The results indicated that the material generally did not exceed the Table 3 standards for petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCB) or polycyclic aromatic hydrocarbons (PAH). There was one minor exceedance for cadmium, all other metals were below Table 3 standards.

In June 2019, groundwater samples were collected from three monitoring wells located in the stockpile. The results were compared to samples taken in 2005 and to the Province's Table 2: Full Depth Site Conditions in Potable Groundwater (referred to as Table 2). Table 6-7 shows the parameters that exceeded the province's Table 2 standards. Where a parameter exceeds the standards, it is marked with an "X".

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**Table 6-7: Groundwater – Table 2 Potable Water Exceedances**

	MW04-01 Centre		MW04-03 SW Corner		MW04-02 SE Corner
	2005	2019	2005	2019	2019
Chloride	X	X	X	X	-
Sodium	X	X	X	-	-
Arsenic	X	-	-	-	-
Molybdenum	X	X	-	X	-
Selenium	-	X	-	-	-
Uranium	X	-	-	-	-
Vanadium	X	X	-	-	-
PCB	-	-	-	-	-
PAH	-	-	-	-	-

It is noted that these exceedances were expected, given the type of materials present in the CKD pile. There is no expectation that water below the CKD pile will be used as a drinking water source or will meet drinking water standards. Two conclusions from the water quality testing were:

- The water quality is not homogeneous throughout the stockpile. The water quality at the southeast corner of the stockpile is considerably better than the quality in the centre.
- The water quality data shows an overall improvement with concentrations of many parameters lower in 2019 than 2005.

Additional monitoring was conducted in the spring of 2022 with a focus on the CKD pile. Results indicated a difference in water quality between the groundwater downgradient of the CKD pile and background groundwater conditions. The concentrations of various parameters including hardness, conductivity, alkalinity, chloride, sulphate, calcium, sodium, manganese, and magnesium are higher than background at monitoring wells downgradient of the CKD pile.

It is inferred that groundwater downgradient of the CKD pile has been mildly impacted by CKD waste. Continued monitoring is required to assess whether groundwater chemistry is stable or changes over time. More groundwater quality data is required at these locations to determine long term trends.

Table 6-8 and Table 6-9 summarize typical groundwater quality measures and more detailed groundwater chemistry, respectfully, at OW2 (a sampling well away from the CKD pile) and the new manholes and wells located at the centre of the CKD pile, near its southwest corner and in the surrounding till and meltwater deposits (sand and silt, and sand, silt and silty clay conditions. Boxes shaded grey denote exceedances.

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**Table 6-8 Groundwater Quality in Wells Associated with the CKD Pile**

Inorganics	PWQO	Units	MW04-01 CKD Centre	MW04-03 CKD SW Corner	OW37D-22 Till	OW37I-22 Sand & Silt	OW38S-22 Sand & Silt /Sily & Clay
pH	6.5-8.5	mg/L	9.84	7.91	7.59	7.62	7.32
Specific Conductivity		uS/cm	37800	5110	1740	1590	1900
Alkalinity		mg/L CaCO3	5500	648	426	414	643
C-Hardness		mg/L CaCO3	172.0	410	1030	893	1020
DOC		mg/L	86.3	20.9	2.7	2.4	9.7
Bromide		mg/L	<2.8	<0.28	2.19	1.83	3.09
Chloride		mg/L	3370	356	167	141	244
Fluoride		mg/L	<1.3	<0.13	<0.05	<0.05	<0.05
Nitrate		N mg/L	<3.6	<0.36	<0.07	<0.05	<0.07
Nitrite		N mg/L	<2.7	<0.27	<0.05	<0.05	<0.05
TKN		N mg/L	31.0	3.2	0.31	0.17	0.53
Phosphate		mg/L	67.70	<0.65	<0.13	<0.10	<0.13
Sulphate		mg/L	11700	1380	476	374	171
Phenols	0.001	mg/L	0.08	0.04	0.036	0.041	0.069
TDS		mg/L	39000	4250	1380	1150	1210
Bicarbonate (as CaCO3)			3350	648	426	414	643
Carbonate (as CaCO3)			2150	<5	<5	<5	<5

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**Table 6-9 Groundwater Chemistry in Wells Associated with the CKD Pile**

Inorganics	PWQO	Units	OW2	MW04-01	MW04-03	OW37D-22	OW37I-22	OW38S-22
			Background	CKD Centre	CKD SW Corner	Till	Sand & Silt	Sand & Silt /Sily & Clay
<b>Metals</b>								
Aluminum	0.075	mg/L	-	1.15	0.028	0.052	0.044	0.075
Antimony	0.020	mg/L	-	<0.002	<0.001	<0.001	<0.001	<0.001
Arsenic	0.1	mg/L	-	0.0220	0.0010	0.003	0.004	<0.001
Barium		mg/L	-	0.0400	0.0470	0.109	0.05	0.067
Beryllium	1.1	mg/L	-	<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
Bismuth		mg/L	-	<0.004	<0.002	<0.002	<0.002	<0.002
Boron	0.2	mg/L		0.05	0.02	0.061	0.052	0.036
Cadmium	0.0002	mg/L		0.00370	0.00010	<0.0001	<0.0001	<0.0001
Calcium		mg/L		69.00	148	221	208	255
Chromium	0.00089	mg/L		0.0270	<u>&lt;0.002</u>	<0.002	<0.002	<0.002
Cobalt	0.0009	mg/L		0.00250	0.0006	0.0007	0.0013	0.0023
Copper	0.005	mg/L		0.009	<0.001	0.001	<0.001	0.001
Iron	0.3	mg/L		1.860	7.9	0.142	0.783	0.045
Lead	0.025	mg/L		0.312	<0.0005	<0.0005	<0.0005	<0.0005
Magnesium		mg/L		<5	9.9	116	90.8	94
Manganese		mg/L		0.209	0.475	0.109	0.172	0.667
Mercury	0.0002	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	0.04	mg/L		0.550	0.365	0.006	0.003	<0.002
Nickel	0.025	mg/L		0.054	0.005	0.002	0.002	0.006
Phosphorus		mg/L		0.48	<0.02	<0.02	<0.02	<0.02

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Inorganics	PWQO	Units	OW2	MW04-01	MW04-03	OW37D-22	OW37I-22	OW38S-22
			Background	CKD Centre	CKD SW Corner	Till	Sand & Silt	Sand & Silt /Sily & Clay
Potassium		mg/L		11400	1160	7.85	5.19	5.83
Selenium	0.1	mg/L		0.037	0.007	<0.001	0.003	0.006
Silicon		mg/L		23	3.79	10.6	10.1	7.88
Silver	0.0001	mg/L		<0.0002	0.0002	<0.0001	<0.0001	0.0002
Sodium		mg/L		1280	73	46.5	26.3	48.4
Strontium		mg/L		0.1280	0.399	1.79	0.735	0.925
Thallium		mg/L		0.0018	<0.0003	<0.0003	<0.0003	<0.0003
Tin		mg/L		<0.004	<0.002	<0.002	<0.002	<0.002
Titanium		mg/L		0.05700	0.007	0.013	0.007	<0.002
Uranium	0.005	mg/L		0.01490	0.00080	0.0034	0.0028	0.0037
Vanadium	0.006	mg/L		0.018	0.002	<0.002	<0.002	<0.002
Zinc	0.03	mg/L		0.048	<0.005	<0.005	<0.005	<0.005
<b>PAHs</b>								
Phenanthrene	0.03	µg/L		0.11	<0.10	0.11	0.11	<0.10
Chrysene	0.0001	µg/L		0.11	<u>&lt;0.10</u>	<u>&lt;0.10</u>	<u>&lt;0.10</u>	<u>&lt;0.10</u>
Benzo(b)fluoranthene		µg/L		0.11	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	0.0002	µg/L		0.11	<u>&lt;0.10</u>	<u>&lt;0.10</u>	<u>&lt;0.10</u>	<u>&lt;0.10</u>

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### Source Water Protection

In 2006, the provincial government passed the Clean Water Act, which aims to protect municipal drinking water in the Province with a multi-barrier approach, starting with Source Water Protection.

The Town of St. Marys obtains its water supply from three bedrock wells located northeast of the landfill. The landfill is more than 1,000 m from Wellhead Protection Areas.

Two Highly Vulnerable Aquifers (HVA) are present within the Study Area Vicinity. These areas generally correspond to the quarry sites both north of the landfill (SMC plant) and the Thomas Street Quarry west of the landfill. They are considered to be vulnerable because the surficial soil has been removed and the bedrock aquifer has been exposed. A small area in the northeast corner of the Landfill Site is within an HVA.

Residential properties along Water St. S. are outside the Town water supply system and are supplied by private wells. The landfill monitoring program includes five of these properties.

The approximate locations of the private wells are shown on Figure 6-3. The well owners are provided with the laboratory reports for their wells annually.

The wells are only sampled if the owners are present as the sampling points are inside the residences. For that reason, some wells are only sampled periodically. Table 6-10 contains the results of sampling at each well.

**Table 6-10: Groundwater Concentrations – Private Wells**

Well	Date of Sample	Chloride (mg/L)	Hardness (mg/L)	Conductivity (µS/cm)	Dissolved Organic Carbon (mg/L)
		Provincial Criteria: 250	Provincial Criteria: 100	Provincial Criteria: N/A	Provincial Criteria: 5
<b>Overburden</b>					
PW2	Oct 2013	131	285	891	2.0
	May 2015	137	317	988	1.8
<b>Bedrock</b>					
PW1	May 2015	3.52	258	664	1.2
	Sep 2015	4.36	286	573	0.9
PW3	Nov 2012	557	318	574	1.1
	May 2013	62.8	269	726	1.2
PW4	May 2015	3.09	299	761	1.2



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Well	Date of Sample	Chloride (mg/L)	Hardness (mg/L)	Conductivity (µS/cm)	Dissolved Organic Carbon (mg/L)
		Provincial Criteria: 250	Provincial Criteria: 100	Provincial Criteria: N/A	Provincial Criteria: 5
	Sep 2015	3.50	321	605	1.1
PW5	May 2015	29.4	291	732	1.1
	Sep 2015	16.3	319	619	1.0

A summary of private well conditions is as follows:

- There are no concerns with drinking water quality at any of the wells.
- All wells are below provincial drinking water standards for chlorides and dissolved organic carbon. Water in all wells is relatively hard but that is typical for southern Ontario. A water softener may be required.
- PW2: This well has displayed historically fluctuating levels of chloride. Chloride has ranged from 22 mg/L (May 1985) to 326 mg/L (September 2003). PW2 is reportedly susceptible to seasonal water level fluctuations and has occasionally become dry during summer months. In the past, a licensed water hauler has reportedly filled the well with imported water in such instances. For these reasons, the meaningfulness of the monitoring results is questionable.
- PW1: The dug well at PW1 was replaced by a drilled bedrock well in 2011. Two samples were obtained during 2015. The concentrations of calcium, chloride, hardness and DOC in the new bedrock well are significantly lower than the historical concentrations in the old overburden well.
- PW3: This well has not been sampled since May 2013 as there has not been a resident available to provide access permission. Historically, the chloride concentration has been relatively stable and consistent within a range of 30 to 100 mg/L. The first sample in 1985 was 82.5 mg/L. The waste placement in Phase I began in December 1984, therefore the chloride may be naturally occurring in the bedrock aquifer. The well did have two isolated spikes, one in March 2011 at 1,130 mg/L and one in November 2012 at 557 mg/L. Both times the next sample returned to normal levels.
- PW4: The groundwater quality at PW4 has been stable and is consistent with background concentrations.

PW5: This well displayed parameter concentrations similar to background groundwater quality for the current reporting period with the exception of chloride. Chloride concentrations in the range of 24 to 38 mg/L are higher than PW1 and PW4

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but lower than PW3. Other parameters analyzed at this location are consistent with historical data and the background bedrock aquifer concentrations.

#### **6.4.1.4 Surface Water**

##### **Methodology**

The Hydrogeology Study Report in Volume III, Appendix C provides a detailed description and analysis of the existing conditions in the Study Area Vicinity and the On-Site Study Area.

Data from various sources was collected including data from the Annual Monitoring Reports for the Landfill that have collected surface water data since 1984. Additional field data was collected that included:

- Water levels in drive point piezometers installed along the watercourse.
- Monthly surface water flows at the upstream surface water station and the downstream surface water station through the spring into summer of 2016.

Geomorphic study of the existing watercourse completed by Matrix Solutions Inc. during the summer of 2015 as part of the Ecological Work Plan.

##### **Existing Surface Water Features**

The Site is within the Upper (North) Thames River Drainage Basin. The North Thames River lies northwest of the Site limits. Locally, the river flows in a southwesterly direction from St. Marys.

The primary surface water features of the Landfill Site are the watercourse and the two stormwater management basins. The unnamed watercourse flows through the Site from the southeast corner to the northwest corner. This man-made watercourse provides drainage for the SMC lands up-gradient of the landfill, as well as industrial and agricultural land further upstream. It has a relatively small drainage area of approximately 3.5 km<sup>2</sup>. This small watershed is bounded to the north and east by Trout Creek, to the south by Gregory Creek, and to the west by small creeks that flow the North Thames River.

Clean surface water from the west side of the Site is directed through a series of perimeter ditches and swales around the landfill footprints and along the interior roadways. The ditches and swales convey runoff to two stormwater retention basins. The outline of these basins and the sampling stations are shown on Figure 6-3.

These stormwater basins attenuate the peak flows during storm events and allow sedimentation. Surface water collected from the cover of the completed Phase I is directed Basin A (north basin). Surface water collected from the completed stages and

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perimeter of Phase II/III is directed to Basin B (south basin). The stormwater basins outlet to the watercourse via control features.

Drainage on the east side of the Site is less defined. Surface water runoff from the slopes of the cement kiln dust stockpile flows radially in all directions, including west toward the watercourse and north toward the quarry. There are relatively flat areas between the stockpile and the watercourse with isolated seasonally water-filled depressions.

The watercourse leaves the Site by a culvert under Water St. S. and eventually discharges into the Thames River approximately 500 m downstream of the Site.

### ***Surface Water Monitoring***

Semi-annual surface water monitoring is conducted as part of the landfill monitoring program. Water samples are collected in spring and fall from the watercourse and the two stormwater management basins. In the watercourse this includes upstream and downstream monitoring stations as well as a mid-site station between the stormwater basins. Samples are also collected from the inlets and outlets of basins. The main water quality indicators have been chloride, total phosphorus, iron and TSS.

Water levels are measured at all surface water stations during each monitoring event and stream flows are measured at the watercourse downstream station.

### ***Basin A***

Samples for Basin A are collected at two inlet points (north and south) and one outlet. Historically, chloride concentrations tended to be the highest at the north inlet which receives water from the north end of Phase I. The concentrations for 2004 to 2012 were in the 60 to 160 mg/L range. This sampling point has been dry since 2013. The concentrations at the south inlet were typically below 100 mg/L and it has also been sporadically dry.

The chloride concentrations at the Basin A outlet range from 30 to 130 mg/L. Iron and total phosphorus concentrations at the outlet are sporadically above the PWQO. TSS levels have had a historical range of less than 10 mg/L.

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### ***Basin B***

Samples for Basin B are collected at one inlet point and one outlet. These sampling stations are sporadically dry. Chloride concentrations at the inlet are typically higher than the outlet and exceeded the Aquatic Protection Value (APV) of 180 mg/L on two occasions (August 2012 and November 2014). Iron and phosphorous have been elevated levels typically exceeding the PWQO at both sampling stations. TSS at the outlet has generally been below 50 mg//L with occasional spikes to 60 to 80 mg/L. The quality at the Basin A outlet is better than the quality from Basin B.

### ***On-Site Watercourse***

Flows have been measured at the downstream surface water station since 1994. Flow rates vary from highs ranging from 200 to 600 L/s to lows of less than 5 L/s. The channel has also been dry. This reflects the small drainage area upstream of the site. As part of the EA work, flows were measured monthly in 2016 at the upstream and downstream locations from March to July and again in October. The comparison of flows between the stations showed the stream gaining water between upstream and downstream in the spring and fall. In the summer, the stream lost water between upstream and downstream.

There are three water quality sampling stations along the watercourse. Typically, the water quality is similar between upstream and downstream. This indicates no landfill impact on the watercourse. Chlorides at the upstream station have varied from 13 to 887 mg/L, phosphorus from less than detection limit to 0.69 mg/L and iron from 0.05 to 127 mg/L. Iron and phosphorous typically exceed PWQO at all three locations.

Benthic surveys were conducted in the watercourse in 1993, 1994, 1995, 1996, 1998, 2000, 2002, 2004 and 2006. The surveys compared qualitative and quantitative samples taken from upstream and downstream. The results of these surveys indicated no landfill impact on the benthic communities in the watercourse.

Five new monitoring wells were installed between the watercourse and the CKD pile in 2022. Two boreholes were drilled along the watercourse realignment. The groundwater levels in all monitoring wells between the CKD pile and the watercourse are higher than the base of the watercourse. It is therefore possible that a hydraulic connection exists between the CKD pile and watercourse. As such, groundwater could migrate through the more permeable soils (i.e., sand and silt meltwater deposits) towards the watercourse. However, Annual Monitoring concludes that no CKD impacts to the existing watercourse have been detected to date (2020 Monitoring Report by GM BluePlan Engineering, 2021).

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### **6.4.1.5 Ecology**

#### **Methodology**

Existing conditions were determined through a comprehensive search of existing records and a series of field investigations.

The records review covered lands within the On-site Study Area and Study Area Vicinity. Records, mapping, and databases included in the search were:

- Natural Heritage Information Center;
- Land Information Ontario, publicly available mapping;
- MNRF Interactive Map of Species at Risk by County/Region;
- Ontario Breeding Bird Atlas (OBBA 2001-2005);
- Conservation Authority/Fisheries and Oceans Canada (DFO) Aquatic Species at Risk mapping;
- Ontario Reptile and Amphibian Atlas (ORAA);
- OMAFRA Soil Surveys of Ontario;
- OMAFRA Agricultural Capability/Soils Classification;
- Upper Thames River Conservation Authority (UTRCA) Regulation Limit mapping;
- Town of St. Marys Official Plan;
- Perth County Official Plan;
- Aquatic Species at Risk in the Thames River Watershed (Cudmore et. al., 2004);
- Aquatic Ecosystem Recovery in the Thames River Watershed (Taylor 2004);
- The Thames River, Ontario Canadian Heritage Rivers System Ten Year Monitoring Report 2000-2012; and
- Plover Mills Watershed Report Card 2012.

The purpose of the site investigations was to verify the information collected through the background records review, further characterize known features, and identify any additional features not previously recorded. The site investigations and methodologies used are summarized in Table 6-11. Further information regarding the survey methodologies used are summarized and described in the Natural Heritage Assessment Report (Volume III, Appendix D).

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**Table 6-11: Methodology of Natural Heritage Field Investigations**

<b>Field Study</b>	<b>Purpose</b>	<b>Methodology</b>	<b>Date(s)</b>
Ecological Land Classification	To characterize vegetation communities.	<b>On-Site Study Area:</b> Ecological Land Classification for Southern Ontario (Lee et. al., 1998), including updated communities found in the 2008 draft version of the ecosystem catalogue for Southern Ontario. Vegetation classified to the Vegetation Type level.	May 8, 2015 August 21, 2015  Surveys occurred 9:30 a.m. to 4:00 p.m.
		<b>Study Area Vicinity:</b> Ecological Land Classification for Southern Ontario (Lee et. al., 1998) classified to the Community Series or Ecosite level through air photo interpretation and windshield survey only.	
Breeding Bird Surveys	To identify bird species which may be nesting at the site.	<b>On-Site Study Area:</b> Ontario Breeding Bird Atlas Guide for Participants (BSC, March 2001).	June 4, 2015 June 22, 2015 July 3, 2015  Surveys occurred 6:30 a.m. to 10:30 a.m.
		<b>Study Area Vicinity:</b> No surveys conducted. Bird communities identified from background records.	
Bobolink and Eastern Meadowlark Surveys	To confirm the presence or absence of Bobolink and Eastern Meadowlark which are Threatened Species protected under the ESA, 2007.	<b>On-Site Study Area:</b> Draft Survey Methodology under the ESA 2007 for Bobolink (2011).	June 4, 2015 June 22, 2015 July 3, 2015  Surveys occurred 6:30 a.m. to 10:30 a.m.
		<b>Study Area Vicinity:</b> No surveys conducted. Bird communities identified from background records.	
		<b>On-Site Study Area:</b>	April 30, 2014

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Field Study	Purpose	Methodology	Date(s)
Amphibian Call Surveys	To confirm the presence or absence of amphibians in on-site surface water features.	<p>Marsh Monitoring Program Participant's Handbook for Surveying Amphibians (BSC, 2009).</p> <p><b>Study Area Vicinity:</b> No surveys conducted. Amphibian communities identified from background records.</p>	<p>May 20, 2014 June 24, 2014</p> <p>Surveys occurred 9:30 p.m. to 10:30 p.m.</p>
Turtle Basking Surveys	To confirm the use of on-site surface water features by turtles.	<p><b>On-Site Study Area:</b> Visual search for basking turtles during bird surveys and snake coverboard searches.</p> <p><b>Study Area Vicinity:</b> No surveys conducted. Reptile communities identified from background records.</p>	In conjunction with ELC and breeding bird surveys.

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Field Study	Purpose	Methodology	Date(s)
Snake coverboard Surveys	To confirm the potential presence of two species listed as Special Concern under the ESA 2007 46: Eastern Milksnake ( <i>Lampropeltis triangulum</i> ) and Eastern Ribbonsnake ( <i>Thamnophis sauritus</i> ).	<p><b>On-Site Study Area:</b> Eastern Milksnake surveys were conducted by a combination of active hand searches (i.e., looking under and turning over potential cover objects by hand) cover board surveys, whereby artificial covers (1 m x 1 m plywood) were installed within the On-site Study Area to attract Eastern Milksnake seeking shelter. These cover boards were uniquely identified and labeled.</p> <p>Eastern Ribbonsnake surveys were conducted by walking transects and visually inspecting shoreline and wetland edges within the landfill limits for snakes moving around or basking. The Eastern Ribbonsnake is generally not found under cover materials.</p> <p><b>Study Area Vicinity:</b> No surveys conducted. Reptile communities identified from background records.</p>	<p>May 8, 2015 June 4, 2015 June 12, 2015 June 22, 2015 July 3, 2015 August 21, 2015.</p> <p>Surveys were conducted on sunny days when air temperature was between 8°C and 25°C.</p>

<sup>46</sup> As of June 15, 2016, Eastern Milksnake is no longer a species at risk under the Ontario Endangered Species Act. Although the Milksnake is still listed as a species of special concern under the federal Species at Risk Act, the Committee on the Status of Species at Risk in Ontario (COSSARO) has downlisted this species to “Not at Risk”. According to the MNR, “the status change was based largely on the fact that Milksnakes are relatively widespread in Ontario, there is no evidence of decline throughout most of its Canadian (Ontario) range, and threats to this species are limited outside of southern Ontario.” This status change has been updated throughout the remainder of this Report.



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Field Study	Purpose	Methodology	Date(s)
Bat Maternity Roosting Habitat Surveys	To identify potential roosting habitats for: Little Brown Myotis ( <i>Myotis lucifugus</i> ) and Northern Myotis ( <i>Myotis septentrionalis</i> ) both listed as Endangered.	<p><b>On-Site Study Area:</b> A search was conducted during ELC surveys for any large, mature trees with cavities which could provide habitat for bats.</p> <p><b>Study Area Vicinity:</b> No surveys conducted. Bat habitat identified from background records and air photo interpretation.</p>	<p>May 8, 2015 August 21, 2015</p> <p>Surveys occurred 9:30 a.m. to 4:00 p.m.</p>
Fish Habitat Characterization	To characterize aquatic habitat features and functions.	<p><b>On-Site Study Area:</b> Fish habitat was characterized using MTO/DFO/MNRF Fisheries Protocol – Environmental Guide for Fish and Fish Habitat (June 2009).</p> <p>The entire length of the subject watercourse was observed for morphology, function, as well as fish habitat and potential enhancement opportunities and limitations.</p> <p><b>Study Area Vicinity:</b> No surveys conducted. Fish habitat identified from background records and air photo interpretation.</p>	<p>April 30, 2014 June 22, 2015</p>
Fish Community Sampling	To identify fish species present.	<p><b>On-Site Study Area:</b> A fish presence investigation was conducted using baited minnow traps as well as targeted dip-net sampling. In total, seven minnow traps were set and distributed throughout the watercourse where conditions allowed</p>	<p>June 22, 2015 June 23, 2015</p>

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Field Study	Purpose	Methodology	Date(s)
		<p>(water depth) and where fish were most likely to be present (relatively deep pools). Traps were retrieved approximately 12 hours later, and their inventory was recorded. Targeted dip-net surveys were also conducted at locations throughout the complete length of watercourse within the site property.</p> <p><b>Study Area Vicinity:</b> No surveys conducted. Fish communities identified from background records.</p>	
Incidental flora and fauna observations	To document incidental sightings of flora and fauna which may not have been the target of specific field studies.	Visual observations of animals, tracks or scat and compilation of a plant inventory during all site visits.	Completed during all field investigations.

### Existing Ecology

Both the On-Site Study Area and Study Area Vicinity are significantly disturbed and include a high number of human-influenced features and landscapes. The Natural Heritage Assessment, found in Volume III, Appendix D, identified whether any of the following natural features were present:

- Significant wetlands/significant coastal wetlands;
- Significant woodlands;
- Significant valleylands;
- Significant wildlife habitat;
- Significant Areas of Natural and Scientific Interest (ANSIs);
- Fish and Fish Habitat;

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- Habitat of Endangered and Threatened species; and
- Other features identified in the Town’s Official Plan.

The presence and absence of these types of features is described in the following sections.

**Vegetation**

Vegetation communities are summarized in Table 6-12 and shown on Figure 6-4. None of these vegetation communities are rare or protected.

**Table 6-12: Vegetation Communities in the On-Site Study Area and Study Area Vicinity**

Vegetation Community Name	Community Description
<b>On-Site Study Area</b>	
Dry-Fresh Graminoid Meadow (MEGM3)	<p>This community represents the majority of the Site. Cool season grasses, including Smooth Brome (<i>Bromus inermis</i>), Quack Grass (<i>Elymus repens</i>) and Fescue species (<i>Festuca sp.</i>) are the dominant vegetation type found throughout this community.</p> <p>Tree and shrub cover in the canopy, subcanopy and understory is sparse (&lt;10% total coverage) within scattered small groupings and individual trees in less active areas of the landfill: groupings (inclusions) of Eastern Cottonwood (<i>Populus deltoides ssp. deltoides</i>), Black Walnut (<i>Juglans nigra</i>) and Eastern White Cedar (<i>Thuja occidentalis</i>) were documented and single open-grown Green Ash (<i>Fraxinus pennsylvanica</i>), Eastern Cottonwood and Black Locust (<i>Robinia pseudoacacia</i>) are also found. Common Buckthorn (<i>Rhamnus cathartica</i>) is found establishing throughout the meadow. Garden species, mainly annuals, likely originating from the compost area at the southeast corner of the Site, were recorded spreading southward into the meadow.</p>
Graminoid Mineral Shallow Marsh (MASM1)/Willow Mineral Deciduous Thicket Swamp (SWTM3)	<p>This mixed wetland represents the watercourse that extends from the northwest corner of the Site to the central east property limit, at the base of the slopes. Dominant vegetation found within the wetland varies between graminoid marsh dominated by Reed Canary Grass (<i>Phalaris arundinacea</i>), Common Reed or Narrowleaf Cattail, or deciduous swamp dominated by shrub</p>

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Vegetation Community Name	Community Description
	Willow species: <i>Salix eriocephala</i> , <i>S. petiolaris</i> , <i>S. exigua</i> and <i>S. lucida</i> , as well as Cracked Willow ( <i>Salix x rubens</i> ).
Cultural Woodland	This community is located on the east side of the Site, growing on the south facing portion of the slope. The dominant trees, Eastern Cottonwood and Manitoba Maple ( <i>Acer negundo</i> ), represent early successional species that indicate that this community is in the early stages of its establishment. Meadow species, such as Canada Goldenrod and cool season grasses are found throughout the majority of the community.
Cultural Hedgerows	<p>There are three Cultural Hedgerows identified within the On-Site Study Area: one at the west limit and the other along the south property limit. The former is predominantly White Spruce that has been planted to screen the landfill from Water Street South and the adjacent residences. Large deciduous species of Eastern Cottonwood and Green Ash are also found in the hedgerow, as well as groupings of Common Buckthorn.</p> <p>The hedgerow at the south property limit is dominated by Manitoba Maple with meadow groundcover (i.e., Smooth Brome, Canada Goldenrod) in the base in the western portion of the community. The hedgerow is much denser, with no groundlayer vegetation and is dominated by Apple (<i>Malus pumila</i>) with abundant Common Buckthorn.</p> <p>The third hedgerow is located at the northwest corner of the site, adjacent to the rural residence. It is comprised of a mix of mid-aged Eastern White Cedar, Black Walnut (<i>Juglans nigra</i>), Norway Spruce (<i>Picea abies</i>). It is contiguous with the hedgerows that surround the periphery of the residence.</p>
<b>Study Area Vicinity</b>	
Fresh-Moist Lowland Deciduous Forest (FODM7)	<p>This forest is located on the east side of the Thames River and is dominated by Willow with associates of White Elm (<i>Ulmus americana</i>) and Manitoba Maple.</p> <p>A cultural mixed wooded area is found north of On-Site Study Area, immediately east of Water Street South.</p> <p>Hedgerows associated with the roadside and separating agricultural properties generally consist of a single tree species including Black Walnut, Eastern Cottonwood, and Green Ash.</p>

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Vegetation Community Name	Community Description
	A spruce-dominated plantation, ornamental trees associated with rural residences and vegetated drainage features are also found within 1,000 m of the On-Site Study Area.

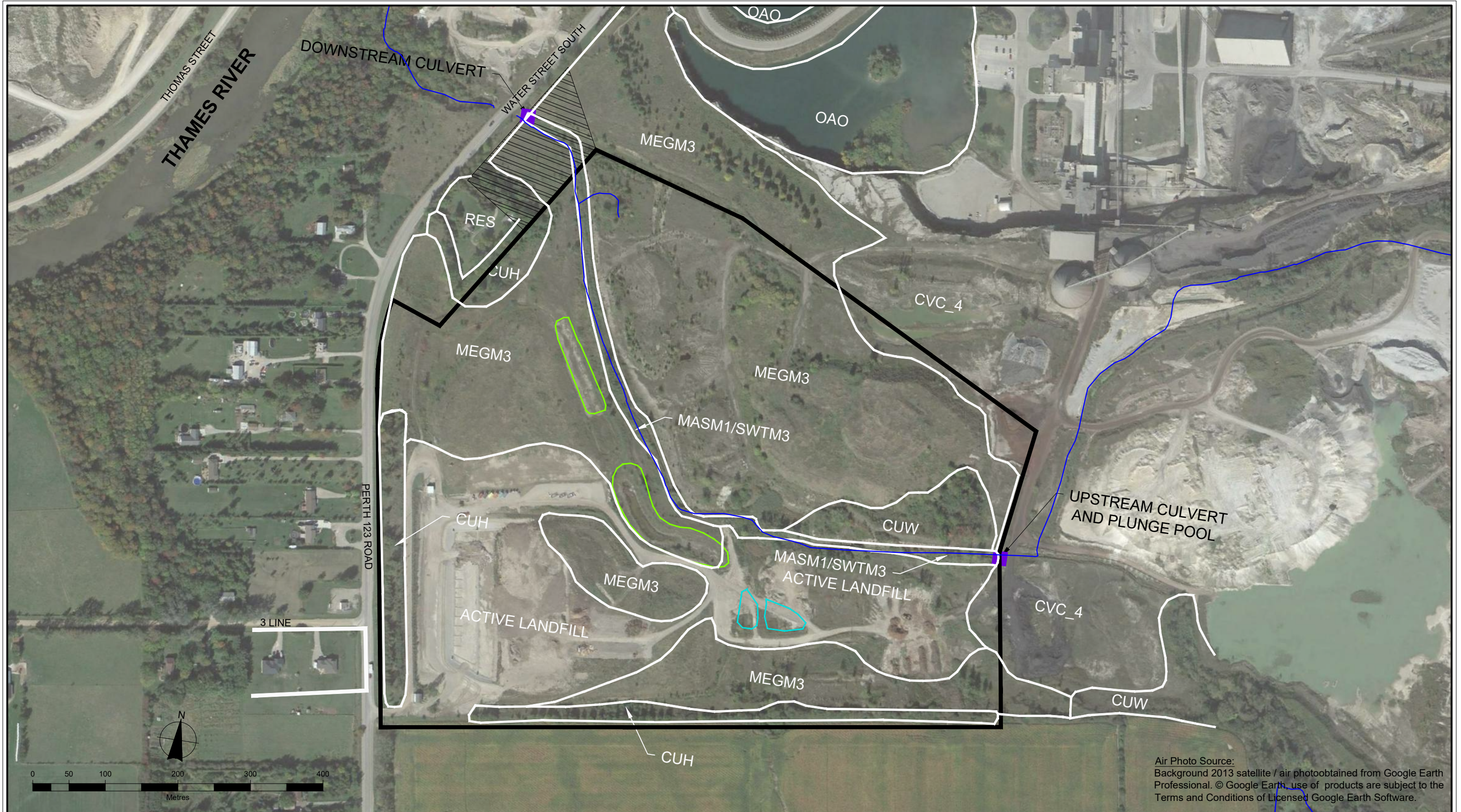
***Significant Wetlands, Woodlands, Valleylands and ANSIs***

There are no Significant Wetlands, Woodlands, Valleylands or ANSIs in the On-Site Study Area. With the exception of Significant Wetlands, all of these features are present in the Study Area Vicinity. Significant Woodlands and Valleylands are associated with the Thames River and the treed areas along its banks. The boundaries of the valley, including floodplain and adjacent vegetation are limited to the western side of Water Street South and do not extend onto the On-Site Study Area.

One ANSI was identified through the background information review: the St. Marys Cement Company Provincially Significant Earth Science ANSI. This ANSI is located west of the Thames River within the Study Area Vicinity. No other ANSIs were identified within the Study Area Vicinity.

Within the On-Site Study Area, there are no wetlands which could potentially meet the criteria for significance. There are two narrow stormwater management basins along the central portion of the Site. These are man-made and serve a stormwater control function. Due to their nature, stormwater management basins typically contain relatively poor water quality that could inhibit their use by wildlife. The habitat provided from these basins/ponds is marginal and does not include any habitat structures (i.e., logs, rocks). Both basins/ponds are also subject to ongoing disturbance from landfill activities and regular clean-out requirements. Some wetland vegetation is found within the riparian corridor along the existing watercourse. Species include Reed Canary Grass, Common Reed, Narrowleaf Cattail, and a variety of shrub willow species. There is little wetland function provided by this narrow strip of vegetation.

There are two ponds to the north of the On-Site Study Area within the St. Marys Cement operations. These are remnant pits from aggregate extraction activities and habitat features are minimal. No other wetlands were observed within the Study Area Vicinity.



Air Photo Source:  
 Background 2013 satellite / air photo obtained from Google Earth Professional. © Google Earth, use of products are subject to the Terms and Conditions of Licensed Google Earth Software.

**LEGEND**

- APPROXIMATE ON-SITE STUDY AREA
- WATERCOURSE
- STORMWATER MANAGEMENT BASIN
- WET DEPRESSION
- RIGHT-OF-WAY AND SEWER EASEMENT

**ECOLOGICAL LAND CLASSIFICATION**

- |       |                              |                   |  |
|-------|------------------------------|-------------------|--|
| CUH   | CULTURAL HEDGEROW            | COMMUNITY COMPLEX |  |
| CUW   | CULTURAL WOODLAND            | MASM1             | GRAMINOID MINERAL SHALLOW MARSH        |
| MEGM3 | DRY-FRESH GRAMINOID MEADOW   | SWTM3             | WILLOW MINERAL DECIDUOUS THICKET SWAMP |
| OAO   | OPEN WATER                   |                   |  |
| CVC_4 | EXTRACTION                   |                   |  |
| RES   | RESIDENTIAL (URBAN OR RURAL) |                   |  |



Client  
**TOWN OF ST. MARYS**

Figure Title  
**FUTURE SOLID WASTE DISPOSAL EA**  
 VEGETATION COMMUNITIES

Drawn CD	Checked JH	Date JUNE 2022	Figure No. <b>6-4</b>
Scale 1:4000	Project No. 300032339		

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### ***Avifauna***

At total of 35 summer resident bird species exhibiting some level of breeding evidence were observed within the On-Site Study Area during the breeding bird surveys conducted in 2015.

Four bird species listed as either provincially and/or federally significant were observed within the On-Site Study Area during the breeding bird surveys: Bald Eagle, Bank Swallow, Barn Swallow, and Eastern Meadowlark. Bald Eagle was a flyover observation only; no key habitat features required by this species are present at the site.

Barn Swallow was observed foraging over the graminoid meadows present within the landfill. No nesting habitat for this species is present within the On-Site Study Area.

A pair of Bank Swallows was observed at the beginning of the breeding bird season attempting to nest in a soil stockpile in the composting area of the landfill. Nesting habitat was confirmed at the active windrow composting area in the southeast portion of the landfill. One pair was observed on June 4, 2015 entering and exiting excavated burrows located on the vertical slopes of a topsoil pile. On subsequent visits during breeding bird surveys on June 22 and July 3, 2015, the topsoil pile was found to have slumped causing the entrances to the excavated burrows to partially collapse. An unidentified animal burrow was also noted immediately adjacent to the excavated sites. No Bank Swallows were observed utilizing the topsoil pile on these subsequent visits. The pair was likely forced to abandon the site when the site became unsuitable. MNRF was consulted after the first observation of breeding evidence on June 4, 2015 to determine what, if any, mitigation measures were required to be in place during active landfill operations in order to avoid disturbance or destruction to Bank Swallow habitat. A 50 m setback from the nesting site was implemented where disturbance was not permitted. Due to absence of breeding evidence at the topsoil pile on subsequent surveys, it was confirmed with MNRF that if no further evidence of breeding was observed at the site after the final and third breeding bird survey, it was safe to assume that the habitat was no longer suitable or occupied by this species and the Town could resume activities at the topsoil pile and surrounding area (pers. comm. with Graham Buck, June 24, 2015).

Nesting and foraging habitat for Eastern Meadowlark was confirmed in the Study Area. The extent of suitable nesting habitat for this species includes the two capped areas of the landfill that have been characterized as ELC community MEGM3 "Dry-Fresh Graminoid Meadow". These two capped areas of the landfill are not currently active areas of the landfill operations.

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### ***Amphibians and Reptiles***

One Midland Painted Turtle was observed in the existing watercourse on May 27, 2015. A second individual was observed on July 3, 2015 in the stormwater management basin located in the central portion of the landfill. Potential hibernation habitat for Midland Painted Turtle may be present within the existing watercourse. Observations made from the shoreline indicated that the plunge pool at the upstream culvert on the east side of the On-Site Study Area was noted to be approximately 2.5 to 3 m wide and could potentially have the depth and substrate required for turtle hibernation (i.e., to bury beneath the frost line). No evidence of turtle nesting was observed within the On-Site Study Area. Turtle habitat for species that are highly aquatic and that inhabit mainly larger waterbodies such as the Thames River is present within the Study Area Vicinity and the Thames River generally (e.g., Spiny Softshell and Northern Map Turtle). Given the large-perched culvert located at the downstream end of the landfill watercourse at Water Street South (i.e., draining into the Thames River), this culvert is considered a significant barrier for these two highly aquatic turtle species to access the watercourse present within the On-Site Study Area.

Three species of snakes were observed under cover board materials or materials adjacent to cover boards: Dekay's Brownsnake (*Storeria dekayi*), Eastern Gartersnake (*Thamnophis sirtalis sirtalis*) and Eastern Milksnake. Based on these observations, it is possible that reptile hibernaculum is present within the landfill limits. Anthropogenic features that may be suitable include mammal burrows and crevices that may be present within the landfill. A portion of the landfill was a former clay pit. Large excavations that have disturbed underlying material may have created suitable crevices that snakes can reach below the frost line during the winter months. No specific features that could support reptile hibernation were observed. Any features that may be present are anthropogenic in nature and will offer poor habitat conditions due to the nature of below ground materials which include CKD and waste. As such, any potential features which may be present is not considered provincially significant.

### ***Terrestrial Crayfish***

Some terrestrial crayfish are considered to be rare in the province. As such, crayfish burrows can be identified as a type of SWH. Because the presence of burrows or chimneys is often the only indicator of species presence, observance or collection of individuals is very difficult. Eight terrestrial crayfish burrows were incidentally observed on July 3, 2015 during breeding bird surveys/snake cover board surveys. The burrows were observed at the edges of damp Common Reed pockets that have established in the area northwest of the capped cement kiln dust pile.



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### ***Insect Habitat***

Two Monarch butterflies (*Danaus plexippus*) were recorded in the cultural meadow of the On-Site Study Area during the August site visit. The presence of Common Milkweed (*Asclepias syriaca*), which serves as both host (caterpillar) and nectar (food source) plant, indicates that suitable habitat for this species is present within the On-Site Study Area. Other wildflower nectar sources also support the species. Monarch is listed as Special Concern under the ESA, 2007.

### ***Mammal Habitat***

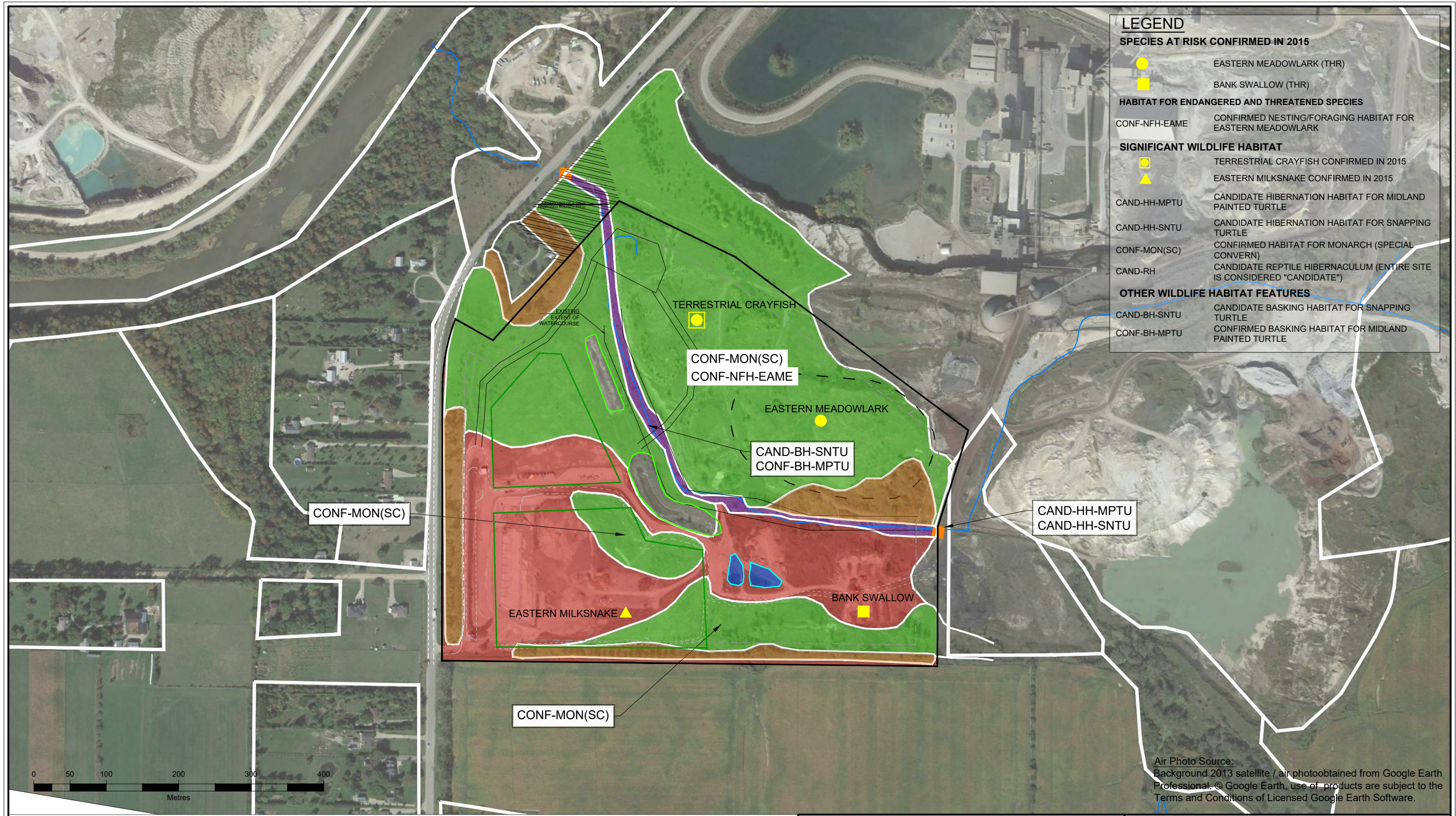
Several incidental observations of mammals were documented during the field investigations. These include: Muskrat (*Ondatra zibethicus*), White-tailed Deer (*Odocoileus virginianus*), Coyote (*Canis latrans*), Ermine (*Mustela ermine*), Striped Skunk (*Mephitis mephitis*) and Star-nosed Mole (*Condylura cristata*). White-tailed Deer appear to utilize the On-Site Study Area based on extensive tracks and signs (i.e., scat, browsing) observed during field investigations. Muskrat lodges were observed in one of the small ponds within the landfill. None of these species are listed as provincially and/or federally significant; all are considered to be common, widespread and abundant in the province.

### ***Significant Wildlife Habitat***

Based on the species observed and ecosystems present, three types of SWH have been confirmed present, including:

- Habitat for Terrestrial Crayfish;
- Habitat for Monarch Butterfly ; and,
- Turtle Overwintering Areas.

Several additional wildlife habitats may exist in the Study Area Vicinity, particularly within the Thames River and surrounding woodlands. This includes possible habitats for turtles, reptiles, amphibians and woodland birds. Significant Wildlife Habitats are shown in Figure 6-5.



**LEGEND**

**SPECIES AT RISK CONFIRMED IN 2015**

- EASTERN MEADOWLARK (THR)
- BANK SWALLOW (THR)

**HABITAT FOR ENDANGERED AND THREATENED SPECIES**

CONF-NFH-EAME CONFIRMED NESTING/FORAGING HABITAT FOR EASTERN MEADOWLARK

**SIGNIFICANT WILDLIFE HABITAT**

- TERRESTRIAL CRAYFISH CONFIRMED IN 2015
- ▲ EASTERN MILKSNAKE CONFIRMED IN 2015

CAND-HH-MPTU CANDIDATE HIBERNATION HABITAT FOR MIDLAND PAINTED TURTLE

CAND-HH-SNTU CANDIDATE HIBERNATION HABITAT FOR SNAPPING TURTLE

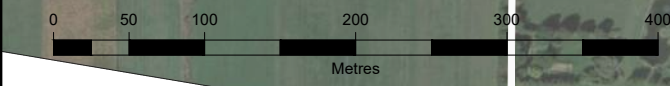
CONF-MON(SC) CONFIRMED HABITAT FOR MONARCH (SPECIAL CONVERN)

CAND-RH CANDIDATE REPTILE HIBERNACULUM (ENTIRE SITE IS CONSIDERED "CANDIDATE")

**OTHER WILDLIFE HABITAT FEATURES**

CAND-BH-SNTU CANDIDATE BASKING HABITAT FOR SNAPPING TURTLE

CONF-BH-MPTU CONFIRMED BASKING HABITAT FOR MIDLAND PAINTED TURTLE



Air Photo Source:  
Background 2013 satellite / air photo obtained from Google Earth Professional. © Google Earth. Use of products are subject to the Terms and Conditions of Licensed Google Earth Software.

**LEGEND**

- APPROXIMATE ON-SITE STUDY AREA
- WATERCOURSE
- EXISTING LIMIT OF WASTE
- STORMWATER MANAGEMENT BASIN
- WET DEPRESSION
- RIGHT-OF-WAY AND SEWER EASEMENT

**ELC CLASSIFICATION**

<span style="background-color: #d3d3d3; width: 15px; height: 10px; display: inline-block;"></span>	CULTURAL
<span style="background-color: #90ee90; width: 15px; height: 10px; display: inline-block;"></span>	MEADOW
<span style="background-color: #0000ff; width: 15px; height: 10px; display: inline-block;"></span>	WETLAND
<span style="background-color: #808080; width: 15px; height: 10px; display: inline-block;"></span>	CONSTRUCTED
<span style="background-color: #000000; width: 15px; height: 10px; display: inline-block;"></span>	OTHER



<b>TOWN OF ST. MARYS</b>	
Client	

<b>FUTURE SOLID WASTE DISPOSAL EA</b>			
SIGNIFICANT WILDLIFE HABITAT			
Drawn	Checked	Date	Figure No.
CD	JH	JUNE 2022	<b>6-5</b>
Scale	Project No.		
1:5000	300032339		

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### ***Fish Habitat***

With the exception of one “Common” Crayfish, no fish were visually observed or captured during the aquatic assessment and fish presence survey. This result, combined with the results of the background information (fish restricted to downstream and a pond upstream), and the lack of direct connectivity with the Thames River, indicates that this section of watercourse is not considered to be direct fish habitat. As such, the watercourse on-site does not contain or provide habitat for any fish SAR. However, because the subject watercourse is connected upstream to the Sgariglia Drain, and downstream to the Thames River, it is considered to be indirect fish habitat and contributes to the water quality and quantity of the Thames River. The Thames River provides habitat for a variety of fish species and several aquatic SAR. Due to amendments to the Fisheries Act (August 2019), any harmful alteration, disruption or destruction (HADD) to waters frequented by fish must be avoided or adequately mitigated as part of the proposed site works.

## **6.4.2 Cultural Environment**

### **6.4.2.1 Built Heritage Resources and Cultural Heritage Landscapes**

#### **Methodology**

A Cultural Heritage Resource Assessment (CHRA): Built Heritage Resources and Cultural Heritage Landscapes- Existing Conditions was undertaken by ASI in November 2015<sup>47</sup>. The CHRA assessed the presence of Built Heritage Resources and Cultural Heritage Landscapes in accordance with the Standards and Guidelines for Conservation of Provincial Heritage Properties (April 2010), Provincial Policy Statement and policies listed in the Town of St. Marys Official Plan (2007 Consolidation, Section 2.3). The assessment consisted of data collection, background historic research, review of secondary source material and field review. The purpose was to present an inventory of known or potential built heritage resources and/or cultural heritage landscapes as well as identify any potential impacts and proposed appropriate mitigation measures to minimize effects. The CHRA can be found in Volume III, Appendix E.

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<sup>47</sup> This Study was conducted as part of the evaluation of Alternative Methods and its findings were not available at the time of the evaluation of Alternatives To the Undertaking. The evaluation of Alternatives to the Undertaking was reviewed in light of this new information. It is not believed that this would change the overall results of that earlier evaluation, described in Section 3.8.3.

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### Existing Built Heritage and Cultural Heritage Landscapes

The background research, data collection, and field review conducted for the Study Area determined that 12 cultural heritage resources are located within the Study Area Vicinity, as summarized in Table 6-13. Of these, 11 are Cultural Heritage Landscapes and one is a Built Heritage Resource.

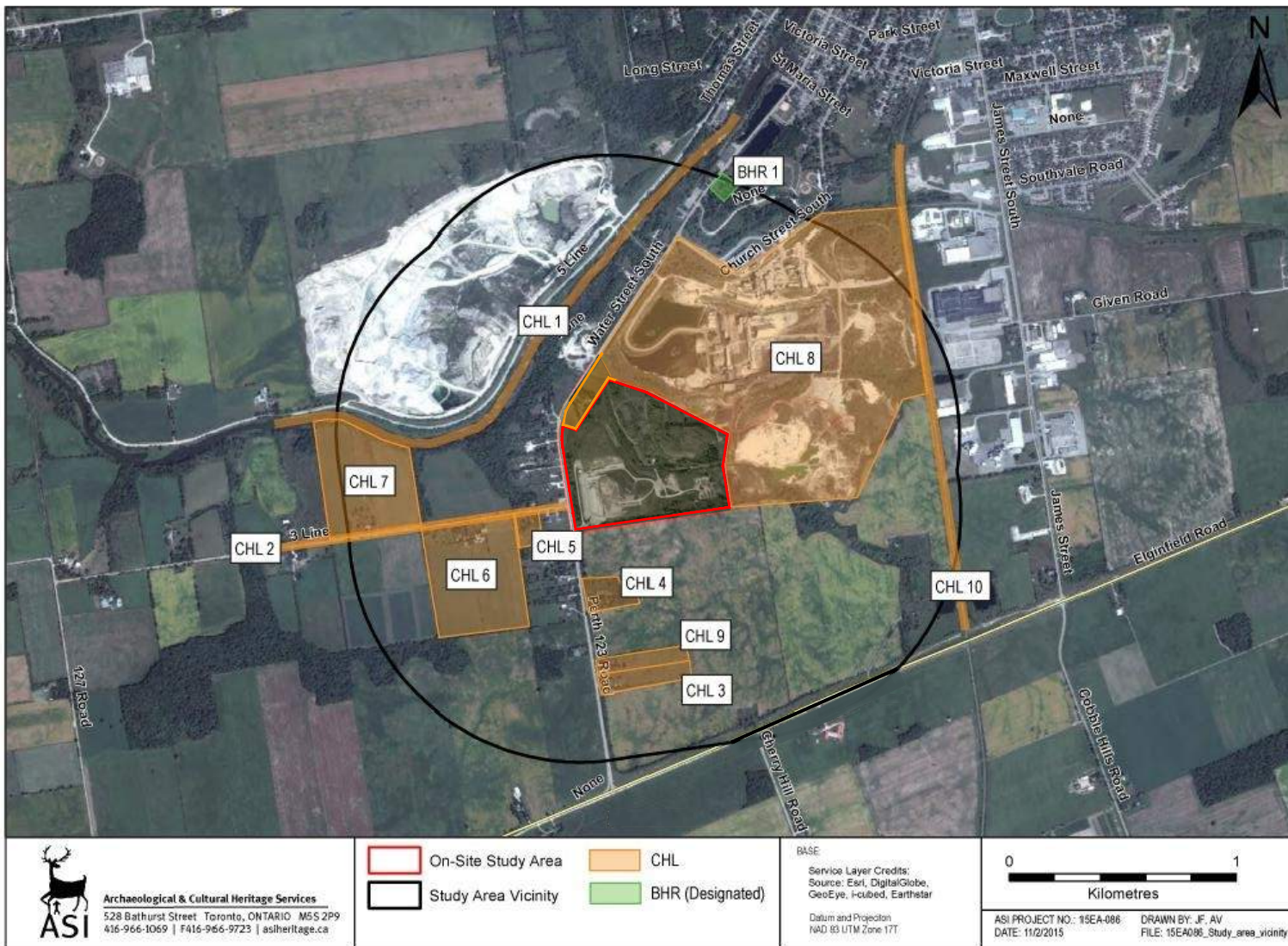
No cultural heritage resources were identified within the On-Site Study Area. Figure 6-6 shows the location of the cultural heritage resources.

**Table 6-13: Cultural Heritage Resources in the Study Area Vicinity**

Resource	Type	Location	Recognition
CHL 1	Waterscape and associated features	Thames River	Identified as a Canadian Heritage River
CHL 2	Roadscape	3 Line	Identified during background research/field review
CHL 3	Farmscape	1579 Perth Road 123	Identified during background research/field review
CHL 4	Farmscape	1631 Perth Road 123	Identified during background research/field review
CHL 5	Farmscape	4469 3 Line	Identified during background research/field review
CHL 6	Farmscape	4495 3 Line	Identified during background research/field review
CHL 7	Farmscape	4544 3 Line	Identified during background research/field review
CHL 8	Industrial Complex	St. Marys Cement Plant	Identified during background research/field review
CHL 9	Farmscape	1595 Perth Road 123	Identified during background research/field review
CHL 10	Railscape	Canadian National Rail Line	Identified during background research/field review
CHL 11	Farmscape	1025 Water Street South	Identified during background research/field review
BHR 1	Residence	481 Water Street South	Designated under Part IV of the Ontario Heritage Act (By-law 63-2008)

The closest resources to the landfill site are the St. Marys Cement Plant which covers the entirety of the St. Marys Cement active operations directly to the north and east of the landfill. The resource identified as CHL 11 in Table 6-13 is a farm property on Water St. S. which is directly adjacent to the landfill and surrounded by the landfill property on its northern, eastern, and southern borders.

## 6-14 CULTURAL HERITAGE RESOURCES



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### **6.4.2.2 Archaeological Resources**

#### **Methodology**

A Stage 1 Archaeological Assessment (under Project Information Form number P392-0171- 2015) was completed by ASI. A Stage 1 assessment consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, a property visit to inspect its current condition and contacting MHSTCI to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment (e.g., Stage 2-4) as necessary. The Stage 1 assessment was conducted in accordance with the *Ontario Heritage Act* and the Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism and Culture, 2011).

#### **Existing Archaeological Resources**

The Stage 1 Archaeological Assessment report has been entered into the Ontario Public Register of Archaeological Reports. The report concluded that the entire on-site study area has been documented to not retain archaeological potential and that these lands do not require further archaeological assessment.

The Stage 1 Archaeological Assessment is included in Volume III - Appendix F.

### **6.4.3 Transportation**

#### **Methodology**

A Traffic Impact Study (TIS) was prepared as part of the EA process. The following background reports were reviewed to identify existing traffic conditions:

- Official Plan of the Town of St. Marys (Town of St. Marys, October 2007);
- Population Discussion Paper prepared to support the Official Plan Update;
- Town of St. Marys 2011 Development Charge Background Study (Watson & Associates, September 29, 2017);
- St. Marys Engineering Design Guidelines and Supplemental Specifications for Municipal Services – draft (Town of St. Marys, May 3, 2017);
- Town of St. Marys Road Assessment Study Asset Management Plan (R.J. Burnside & Associates Limited, October 2014); and
- County of Perth Official Plan (County of Perth, consolidated April 2015).

The TIS can be found in Volume III, Appendix H.

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### **Existing Traffic Conditions**

The St. Marys Landfill access is a tar and chip driveway, located on the east side of Water St. S. The landfill site access is stop-sign controlled and forms a T-intersection with Water St. S. All traffic into and out of the site uses this entrance. The TIS conducted for the EA provides detailed analysis on the traffic patterns in the areas outside of the landfill facility. The TIS assessed traffic patterns, accounting for the transportation links to the landfill and adjacent arterial roads.

Water St. S. (also referred to as Perth Road 123) is a two-lane arterial road, which has a posted speed of 80 km/hr in the landfill access area. This road is under the jurisdiction of the County of Perth. Roughly 470 m north of the landfill entrance, the road becomes under the jurisdiction of St. Marys. The road has a posted speed of 50 km/hr.

There are no new developments or planned road improvements in the Study Area that may impact traffic on Water Street S. near the landfill. There are no existing traffic concerns associated with the entrance or major access routes to the landfill.

#### **6.4.4 Land Use**

##### **Methodology**

Land Use was studied in conjunction with the Socio-economic conditions and is described in the Socio-economic Impact Assessment found in Volume III, Appendix G. Existing land uses were identified through a review of the following documents and data sources:

- Official Plan of The Town of St. Marys October 1987 (Consolidated October 1, 2007).
- County of Perth Official Plan (Consolidated February 2016).
- Town of St. Marys Zoning By-law, consolidated December 2018.
- Township of Perth South Consolidated Zoning By-law 4-1999.
- Agricultural Information Atlas (OMAFRA, accessed April 2016)

In addition, a windshield survey was conducted in May 2015 to document farm types.

##### **Existing Land Use**

The Town of St. Marys, located on the banks of the Thames River in Southwestern Ontario, has a thriving tourism sector and places significant importance on its natural and cultural heritage sites. St. Marys recognizes the importance of maintaining its historical and cultural heritage sites. The landfill property is located along the southwestern edge of the Town, bordering the Township of Perth South in the County of Perth. Adjacent lands, therefore, span multiple jurisdictions.

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### *Official Plans*

According to the Towns of St. Marys Official Plan, the landfill property is identified as an Environmental Constraint area. Surrounding land uses within the Town include Extractive Industrial uses to the north, northeast and west that encompass the operations of St. Marys Cement.

The Township of Perth South lies adjacent to the western and southern boundaries of the landfill. The Township does not have its own Official Plan and, instead, defers to the County of Perth Official Plan. According to Schedule A of the Perth County Official Plan, lands to the immediate south and east fall outside of the Town's limits but are designated as Licensed Quarry Pit/Limestone Resource and Agricultural Lands with a small amount of Natural Resources/Environment adjacent to the Thames River. A small number of residences are located on the east side of Water St. S. immediately adjacent to the landfill.

### *Zoning By-laws*

The Town of St. Marys Zoning By-law identifies the southwestern portion of the landfill property as Extractive Industrial. This Extractive Industrial zoning corresponds with the aggregate extraction license previously in effect for this portion of the property. Lands surrounding the landfill to the north and east are all identified as Extractive Industrial. The small residential property immediately to the west of the landfill is zoned as Development. This indicates that its existing residential use is permitted. New development within this zone would require additional study to ensure compatibility with the landfill. Currently, no properties have been assigned this zone as no future developments are proposed in close proximity to the landfill.

The Township of Perth South Zoning By-law does not include any special provisions for development on lands adjacent to the landfill. Township lands adjacent to the St. Marys Landfill are currently zoned Mineral Aggregate Resource to the south and Agricultural to the west. There is also a small Institutional designation to the west associated with the Union Gas pipeline pumping station located on the northwest corner of Water Street and 3<sup>rd</sup> Line. A Natural Resources/Environmental Zone Two designation is present for a small area along the Thames River.

### *Agricultural Land Uses*

Agriculture is important in the local economy. Perth County has a large agricultural industry with over 2,200 farms operating within the County (Perth County Agriculture and Food, 2012). In 2006, primary agricultural industries accounted for 18% of the County's labour force and since 2001, the total land on farms increased 0.7% to 506,291 acres, with an average farm size of 225 acres. Perth County has a high concentration of labour



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in agriculture and food compared to the rest of southwestern Ontario (County of Perth, 2010).

The Agriculture, Value Added Agriculture and Agri-Food Sector provide 5,535 jobs and employ 5,340 residents in the region. The region is a net importer of 195 agriculture-related jobs (Town of St. Marys, 2015). According to 2006 Census data, many of the jobs are on farms (3,775) and in food manufacturing (1,610). It was estimated that the specialty food sector has been growing by 9% annually (prior to 2010) and is expected to rise by a further 12% annually through 2015 (County of Perth, 2010). Indeed, the County of Perth, Town of St. Marys and City of Stratford combined (also referred to as “the region”) have a significant agricultural heritage since much of the land base and climatic conditions are suited for agricultural and farming activities (County of Perth, 2010).

Several assessments conducted during the development of the County of Perth, Town of St. Marys and City of Stratford Economic Development Strategy and Action Plan (2010) determined that overall, the region’s growth has been driven by a strong agricultural and manufacturing economy and that the region’s agriculture industry is a dominant employment industry. It was concluded that, despite the declining employment growth in this industry, any further economic development efforts need to include agriculture and farming.

Agricultural production is present in rural areas throughout the Township of Perth South, including lands adjacent to the landfill. The agricultural industry relies on high quality agricultural soils and a clean water source for irrigation, where required. The existing landfill has not affected surrounding agricultural soils or water sources and agricultural production has successfully coexisted adjacent to the landfill to date.

It is noted, however, that during the preparation of the TOR, correspondence was received indicating that a neighbouring farm was affected by odour from the landfill. The letter stated that strong odour had deterred customers from purchasing their produce, hence negatively impacting farmgate sales.

Agricultural lands are present in the Study Area Vicinity to the south and west of the landfill. Agricultural lands appear to be primarily in cash crop production. As noted above, the agricultural lands adjacent to the southern boundary of the landfill are zoned Mineral Extractive. According to the Agricultural Information Atlas (Ontario Ministry of Agriculture, Food and Rural Affairs, accessed April 2016), some adjacent farmland is tile drained. The actual number of farms within the Study Area Vicinity is difficult to ascertain as landownership data is not readily available and multiple fields may be in single ownership. Farming is concentrated to the southwest and south of the landfill, with approximately six farms within the Study Area Vicinity, encompassing approximately 320 ha of agricultural land.

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**Compatibility with Adjacent Land Uses**

Sixteen residences are located within 120 m of the landfill and an additional 28 residences are located within the 1 km Study Area Vicinity. Land use related conflicts, including odour, noise and dust concerns, between residents and landfills are not unusual. Annual Monitoring Reports (AMRs) have been prepared since landfill operations began in 1984<sup>48</sup>. Monitoring events are completed twice a year; in the Spring and in the Fall, in compliance with the site’s Environmental Compliance Approval (ECA). A review of AMRs reveals that there were no complaints received in the reporting periods 2010, 2011 and 2012. From 2013 through 2015 a total of nine complaints have been received from residents related to odour from the landfill. Town complaint summaries indicate that odour issues are influenced by wind direction (from the east or northeast) following wet site conditions. The Complaint Summary, presented in Table 6-14, shows two odour complaints in 2016 and four odour complaints in 2018 with no odour complaints in 2017, 2019, 2020, 2021 and through May 4, 2022<sup>49</sup>. The 2019 to date cessation of odour complaints can likely be attributed to the Town’s revised operating practise of using a thicker cover and more localized cover stockpiles, as recommended in the 2018-09-19 and 2018-09-23 investigations.

**Table 6-14: Complaint Summary (2013 to 2022)**

<b>Date</b>	<b>Type</b>
Calendar 2013, 2014 and 2015	Odour – Nine complaints
2016-04-14	Odour
2016-04-27	Odour
2018-03-10	Odour
2018-07-09	Odour
2018-09-19	Odour
2018-09-23	Odour
2019-04-10	Noise – Backup beeper
2020	None
2021	None
2022	None received through 2022-May-4

In recent years, visual impacts to the area have been significantly reduced through the placement of earthen berms and tree screens near the site boundaries where visual impacts could occur.

<sup>48</sup> Burnside completed AMRs for 2013 through 2017, inclusive.

<sup>49</sup> Confirmed by Town email dated May 5, 2022 (D.Blake to J.Hollingsworth)

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## **6.4.5 Socio-Economic Environment**

### **6.4.5.1 Employment**

#### **Methodology**

Employment characteristics were obtained from the following documents and data sources:

- County of Perth, Town of St. Marys and City of Stratford Economic Development Strategy and Action Plan: 2010-2014.
- Final Economic Prosperity CIP, March 9, 2015 – The Town of St Marys Community Improvement Plan (Draft 2015).
- Final Report, Town of St. Marys, Community Based Strategic Plan, February 2010.
- 2016 Census of Canada (Statistics Canada).

Existing employment levels at the landfill were obtained from the City.

Additional information can be found in the Socio-economic Impact Assessment provided in Volume III, Appendix G.

#### **Existing Employment**

##### ***Income and Employment Characteristics***

Surveys conducted by Statistics Canada for the National Household Survey in 2011 reveal that for St. Marys, 3,525 people were employed and 195 were unemployed for a total labour force of 3,720. In 2011, the employment rate for St. Marys was at 64.3% and the unemployment rate was at 5.2%. This is slightly better than Ontario as a whole.

The top occupations are in Service support and other service occupations, Labourers in processing, agriculture, manufacturing, arts, entertainment and recreation, wholesale trade, construction and utilities, and Professional occupations in education services (County of Perth, 2010). In 2016, 25.6% of St. Marys labour force was employed in management occupations, educational and social services, business, and finance, or as health care practitioners.

In 2010, the combined total income for the Town was \$206.6 million (Statistics Canada, 2011). The median employment income was \$45,263 for the working population (age 15 and over) compared to \$50,116 for Ontario as a whole. Statistics obtained from the Town's Community Based Strategic Plan (2010), suggests that the Town has a higher percentage of income earners between \$30,000 and \$99,999 when compared to other regions (Perth, Stratford and the GTA) but lags in the percentage of households earning \$100,000 or over.

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### ***Direct Landfill Related Employment***

There are eight persons employed at the existing landfill:

- Site Attendant – a full time position;
- Compactor Operator – a part-time position;
- (Four) Equipment Operators – as occasionally needed;
- Supervisor of Environmental Services – as occasionally needed; and
- Supervisor of Operations – as occasionally needed.

The Town of St. Marys 2016 budget attributed total staff salary for these employees as approximately \$106,000. For clarity, the Supervisor of Operations spends only a portion of their time dealing with the existing landfill operations. This is also true for others noted “as occasionally needed”. As a result, only a portion of their salaries are attributed to the landfill operations in the budget. The full amount of the site attendant’s salary is included.

#### **6.4.5.2 Social Conditions**

In total, there are 16 residences within 120 m of the landfill and 28 residences within the 1 km Study Area Vicinity. Several commercial and light industrial businesses are present along James Street South, east of St. Marys Cement. The Canadian Baseball Hall of Fame and Museum, Hall of Fame baseball diamonds and other recreational facilities are located north of St. Marys Cement, outside of the Study Area Vicinity.

The Study Area Vicinity is characterized by industrial uses and a small number of houses and businesses. The landfill provides a social service to the community by providing a safe and sanitary means of disposing of the Town’s solid waste. There are no community spaces, public parks or other social services provided in the Study Area Vicinity.

#### **6.4.6 Indigenous Communities and Treaty Rights**

Indigenous and Treaty Rights are protected under Section 35 of the *Constitution Act, 1982*. Indigenous Rights are associated with practices, customs or traditions that are integral to the distinctive culture of the Indigenous community claiming the right. Treaty Rights are those specified in historic treaties signed between Indigenous people and the Crown.

The St. Marys Landfill is located in close proximity to the Thames River, which was an important travel corridor, source of sustenance and culturally significant feature for the Indigenous people who historically lived in the area. The unnamed watercourse running through the landfill property outlets to the Thames River. The Thames River continues

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to be important to several Indigenous communities. The river is used for fishing, drinking water, collecting traditional and medicinal plants and as a source of spiritual connection.

Traditional practices continue to occur along the Thames River but have not occurred on the landfill property since before St. Marys Cement was active on the site.

The St. Marys Landfill is located within lands subject to Treaty 29, 1827. Aamjiwnaang First Nation, Caldwell First Nation, Chippewas of Kettle and Stony Point, Chippewas of the Thames First Nation and Walpole Island First Nation and the Haudenosaunee Confederacy have Indigenous and Treaty Rights associated with lands in, and around, the landfill, as described in Section 3.7.1.2. The most proximate Haudenosaunee communities to the St. Marys Landfill are Oneida Nation of the Thames and Six Nations of the Grand River.

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## **7.0 Phase 5: Assess Alternative Methods for Carrying Out the Undertaking**

This Section documents the assessment of Alternative Methods or Alternative landfill designs.

This Section has been modified from the final EA document submitted in August 2021. Government Review Team (GRT) comments on the August 2021 EA raised several concerns regarding Alternative 3 particularly the proximity to, and the potential effects of, the Cement Kiln Dust (CKD) Pile on the relocated watercourse. In an effort to address these concerns the Town re-engaged with St Mary's Cement (SMC) to discuss the watercourse realignment and how far onto SMC lands it might extend. As a result of those discussions, SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their *Aggregate Resources Act* license. Therefore, the Town has sought another solution.

Reflecting on both the comments on the August 2021 EA and the limitations with respect to SMC lands, the study team revisited Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to realign the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a refinement to the preferred alternative, Alternative 3A which has been added to the evaluation of alternatives described in the chapter and which is described in Section 7.1 below.

The technical information to support the development and assessment of Alternative 3A is described in Appendix D of this report.

### **7.1 Alternative Methods to be Assessed**

Alternative Methods (hereafter referred to as "Alternatives") are different ways to implement the preferred alternative solution, expansion to landfill as determined in Section 3.12, to address the revised Problem Statement. In this case, the Alternatives are different ways in which the landfill could be expanded. The expanded landfill will continue to use the existing haul routes and site entrance, landfill liner system and leachate collection system (LCS) with leachate disposal to the St Marys WTP.

Five conceptual Alternatives were identified and developed. The "Do Nothing" Alternative has also been brought forward as a baseline against which the other Alternatives can be compared.

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The Alternatives are as follows:

- Do Nothing:
  - As a requirement of the EA Act, the ‘Do Nothing’ Alternative must be considered. Do Nothing represents the result of no action being taken to address the Problem Statement and serves as a baseline against which other Alternatives can be compared.
  - No new capacity is provided with this option beyond the existing capacity, as specified in the current ECA which will expire in September of 2022.
- Alternative 1, Vertical Expansion:
  - This Alternative Method involves an expansion in the vertical direction within the existing footprint of the landfill.
  - Approximately 500,000 m<sup>3</sup> of disposal capacity can be provided. This could sufficiently serve the Town’s waste disposal needs for approximately 30 years but not the full 40-year period currently sought by the Town.
- Alternative 2, Horizontal expansion of the existing landfill:
  - This Alternative Method involves an expansion outside of the existing landfill footprint. The watercourse running through the property would be relocated to the northern boundary of the property.
  - With this Alternative, approximately 733,000 m<sup>3</sup> of disposal capacity can be provided which is more than sufficient to meet the Town’s waste disposal needs for at least 40 years.
- Alternative 3, Combination of vertical and horizontal expansion:
  - This Alternative Method would involve partial vertical expansion along with some horizontal expansion of the landfill footprint. The watercourse running through the property would be relocated to the northern boundary of the property.
  - With this Alternative, approximately 756,000 m<sup>3</sup> of disposal capacity can be provided which is more than sufficient to meet the Town’s waste disposal needs for at least 40 years.
- Alternative 4, Development of a new landfill footprint:
  - This Alternative Method involves closure of the existing 8 ha footprint and development of a new landfill footprint elsewhere on the landfill property.
  - Approximately 397,000 m<sup>3</sup> of disposal capacity can be provided. This could sufficiently serve the Town’s waste disposal needs for approximately 25 years but not the full 40-year period currently sought by the Town.

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- Alternative 5, Vertical expansion plus a new footprint:
  - This Alternative Method would involve partial vertical expansion along with development of a new landfill footprint elsewhere on the landfill property.
  - With this Alternative, approximately 974,000 m<sup>3</sup> of disposal capacity can be provided which is more than sufficient to meet the Town's waste disposal needs for at least 40 years.

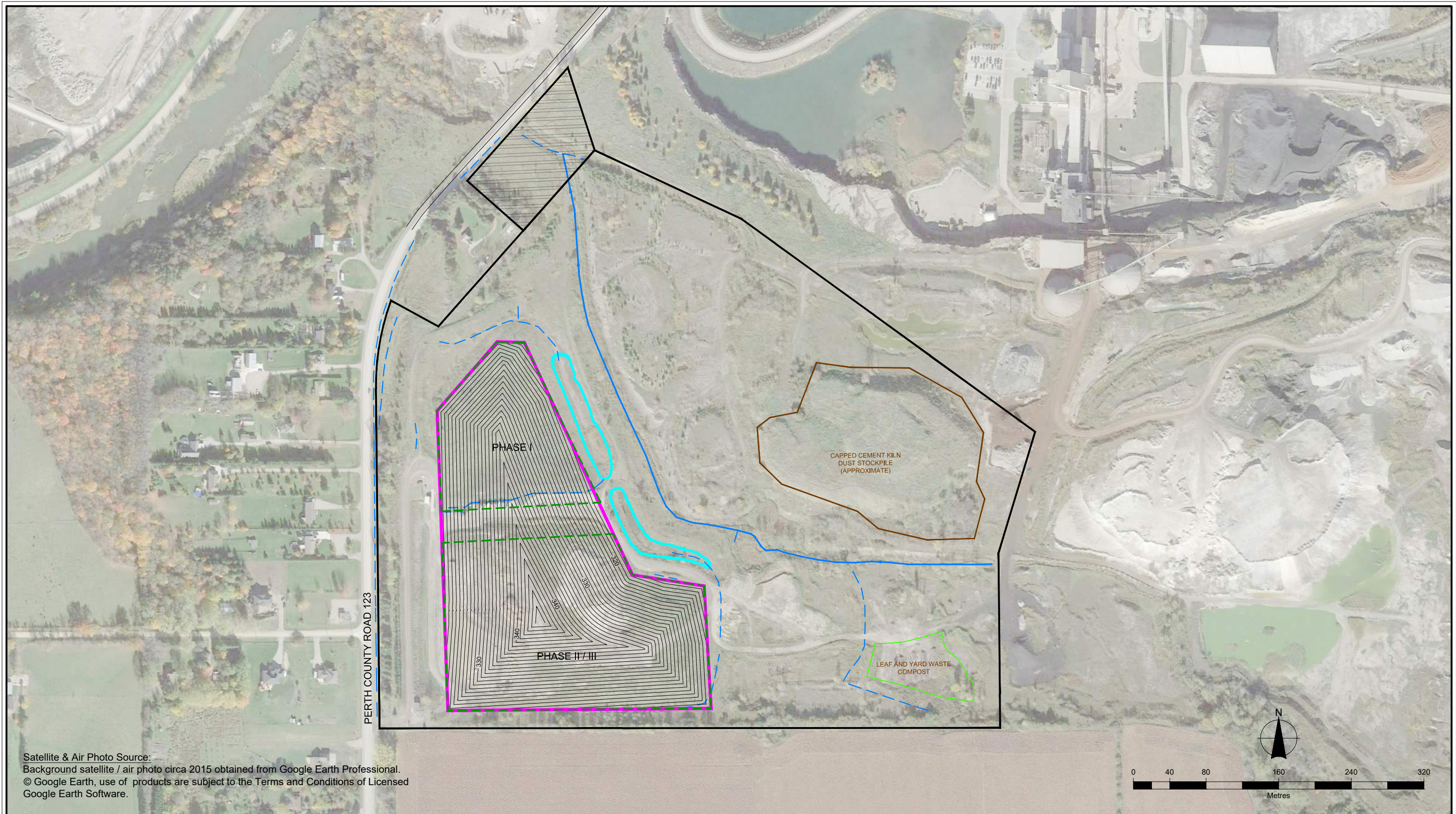
Alternatives 2 and 3 require relocation of the watercourse to the northern boundary of the property, with some encroachment onto SMC lands. As noted, SMC identified concerns with the encroachment onto their lands and the impact it would have on their Aggregate Resources Licence. In addition, concerns were raised with respect to the proximity of the relocated watercourse to the CKD pile. To address these concerns, the team identified a refinement to Alternative 3, which resulted in a new Alternative (Alternative 3A) which has been added to the evaluation of alternatives described in this chapter. Alternative 3A is similar to Alternative 3, including both vertical and horizontal expansion. However, rather than relocating the watercourse entirely, a short section (approximately 230m in length) will be realigned slightly to the northeast of its current position.

All Alternatives, including Alternative 3A are shown in Figure 7-1 through Figure 7-6.

While the six Alternatives and Do Nothing option were initially considered, Alternatives 1 and 4 do not provide the necessary disposal capacity (708,000 m<sup>3</sup>) to meet the Town's needs for the full 40-year planning period. As such, Alternatives 1 and 4 were discarded as possible solutions and were not considered further in this evaluation.

Table 7-1 summarizes the key characteristics of each remaining Alternative (i.e., Do Nothing and Alternatives 2, 3, 3A and 5). Standard mitigation and operating procedures common to all Alternatives are summarized in Table 7-2.





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- LEGEND**
- PROPERTY BOUNDARY
  - EXISTING LIMIT OF WASTE
  - LANDFILL EXPANSION FOOTPRINT
  - WATERCOURSE
  - DRAINAGE SWALE
  - STORM WATER MANAGEMENT BASIN

- COMPOST AREA
- CAPPED CEMENT KILN DUST STOCKPILE (APPROXIMATE)
- RIGHT-OF-WAY AND SEWER EASEMENT

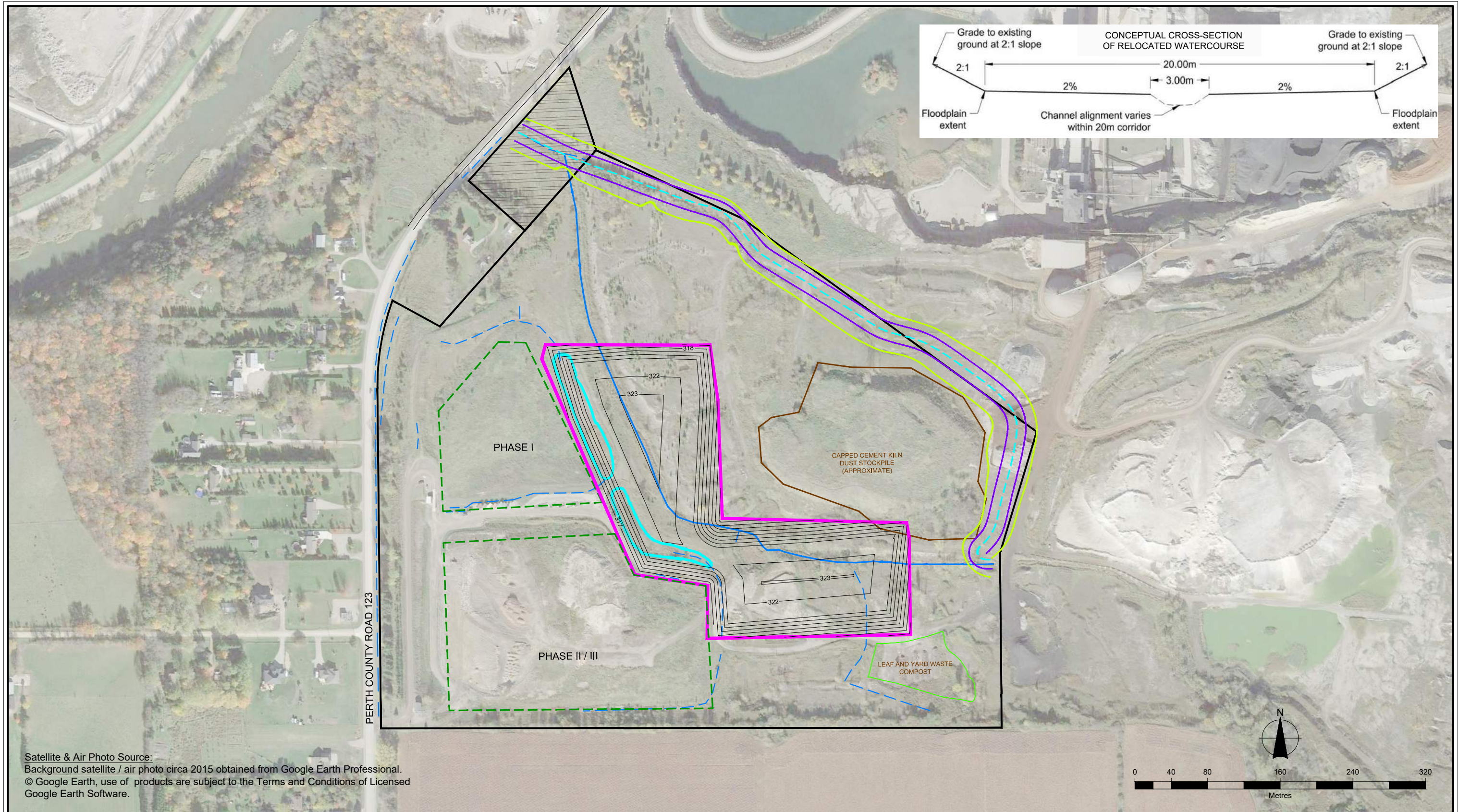


Figure Title  
**FUTURE SOLID WASTE DISPOSAL EA**  
 ALTERNATIVE 1 - VERTICAL EXPANSION

Client  
**TOWN OF ST. MARYS**

Drawn SK	Checked TR	Date JUNE 2022
Scale 1:4,000	Project No. 300032339	

Figure No.  
**7-1**



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**LEGEND**

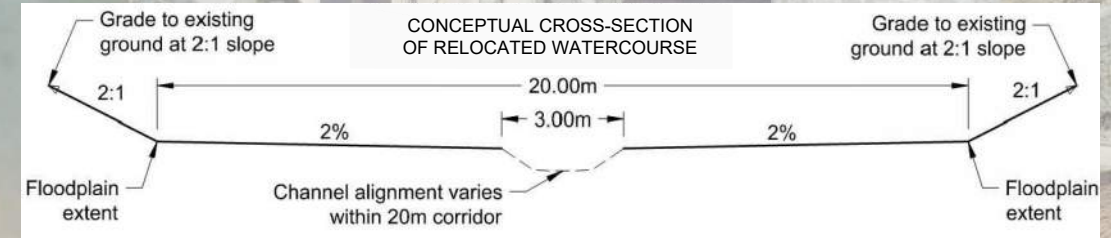
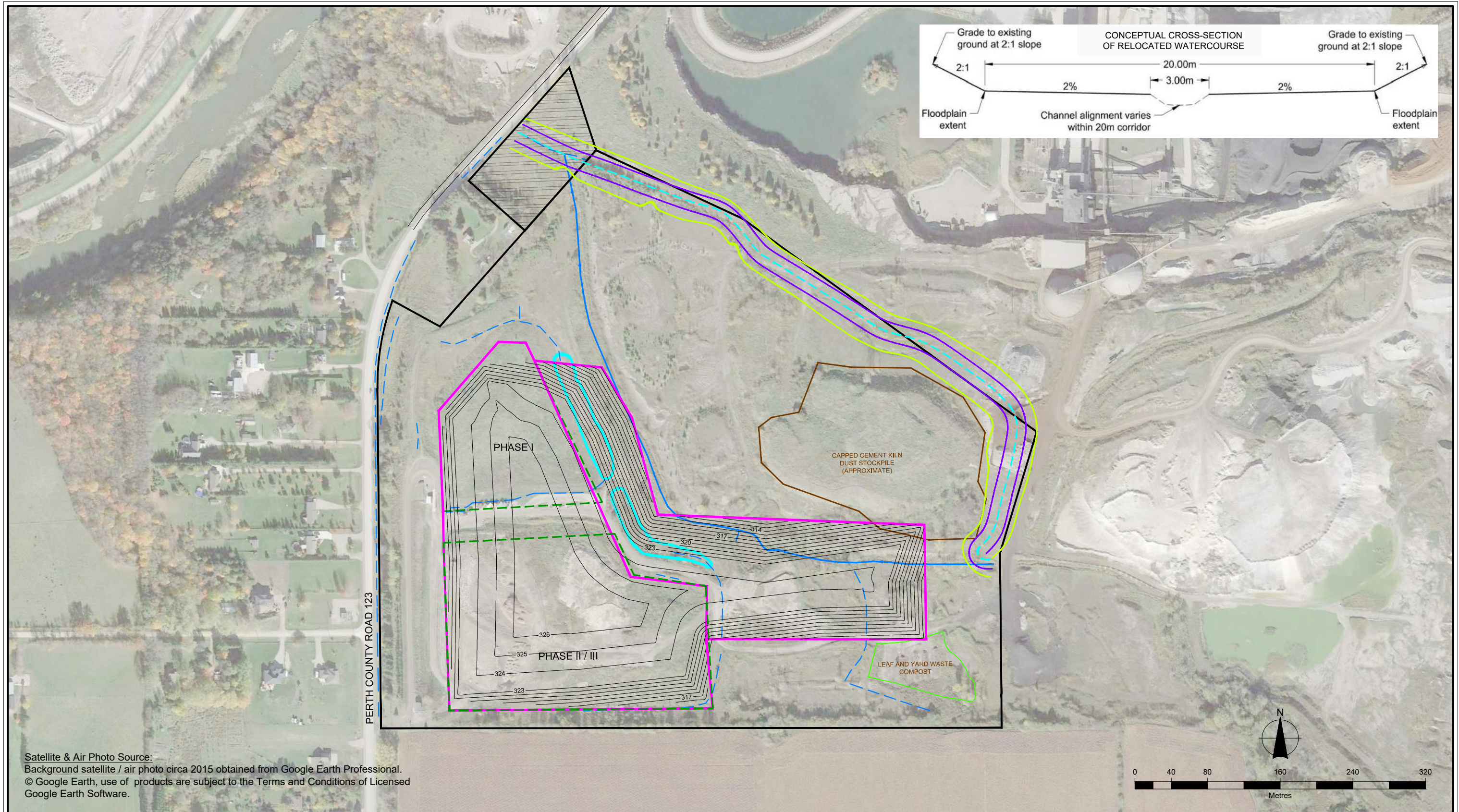
- PROPERTY BOUNDARY
- EXISTING LIMIT OF WASTE
- LANDFILL EXPANSION FOOTPRINT
- WATERCOURSE
- DRAINAGE SWALE
- STORM WATER MANAGEMENT BASIN
- RELOCATED WATERCOURSE
- CONCEPTUAL WATERCOURSE GRADING LIMIT
- CONCEPTUAL WATERCOURSE FLOODPLAIN
- COMPOST AREA
- CAPPED CEMENT KILN DUST STOCKPILE (APPROXIMATE)
- RIGHT-OF-WAY AND SEWER EASEMENT



Client  
**TOWN OF ST. MARYS**

Figure Title  
**FUTURE SOLID WASTE DISPOSAL EA**  
 ALTERNATIVE 2 - HORIZONTAL EXPANSION

Drawn SK	Checked TR	Date JUNE 2022	Figure No.
Scale 1:4,000	Project No. 300032339		7-2



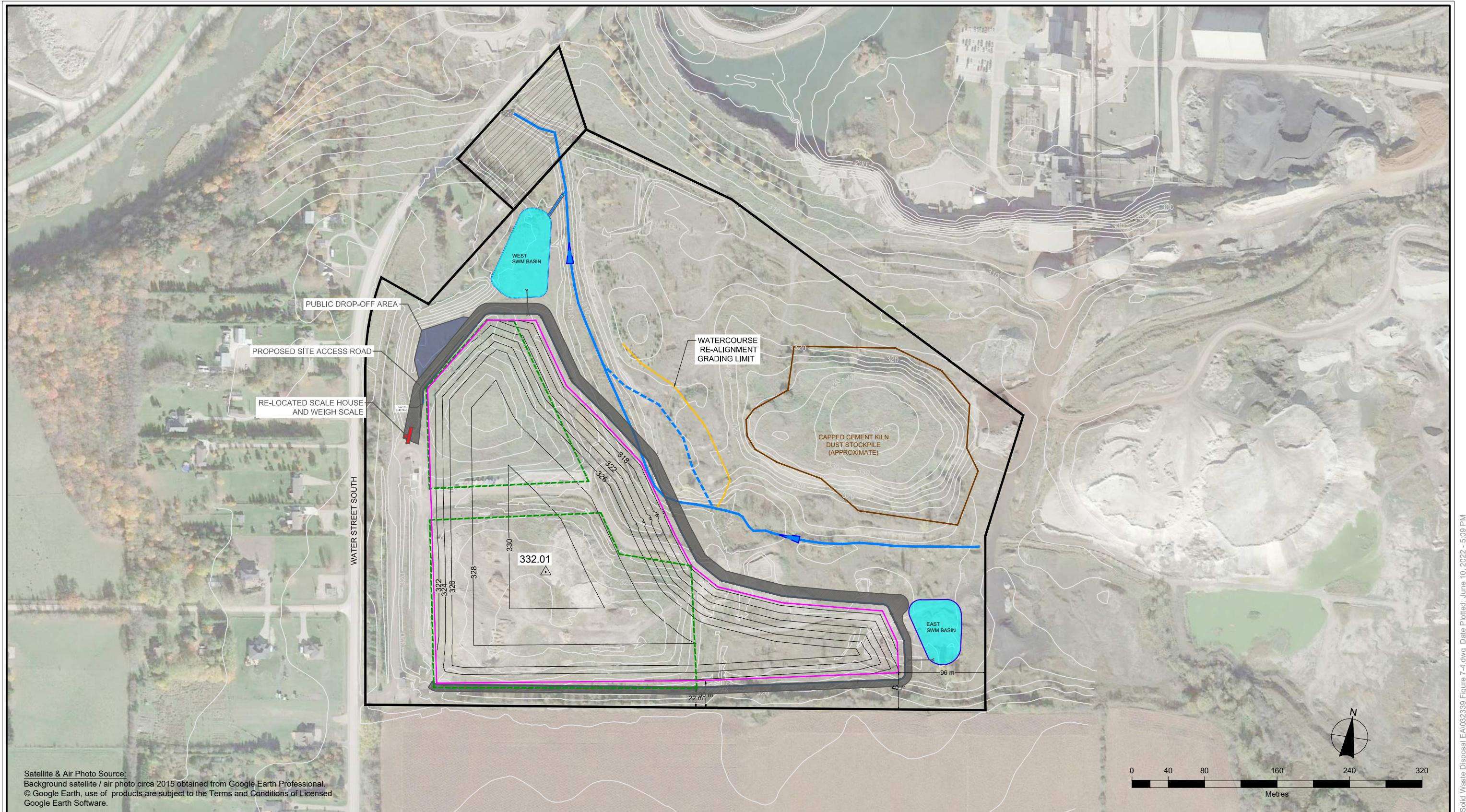
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LEGEND	
	PROPERTY BOUNDARY
	EXISTING LIMIT OF WASTE
	LANDFILL EXPANSION FOOTPRINT
	WATERCOURSE
	DRAINAGE SWALE
	STORM WATER MANAGEMENT BASIN
	RELOCATED WATERCOURSE
	CONCEPTUAL WATERCOURSE GRADING LIMIT
	CONCEPTUAL WATERCOURSE FLOODPLAIN
	COMPOST AREA
	CAPPED CEMENT KILN DUST STOCKPILE (APPROXIMATE)
	RIGHT-OF-WAY AND SEWER EASEMENT

Client

**TOWN OF ST. MARYS**

Figure Title			
<b>FUTURE SOLID WASTE DISPOSAL EA</b>			
ALTERNATIVE 3 - VERTICAL AND HORIZONTAL EXPANSION WITH WATERCOURSE RELOCATION			
Drawn	Checked	Date	Figure No.
SK	TR	JUNE 2022	<b>7-3</b>
Scale	Project No.		
1:4,000	300032339		



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**LEGEND**

- PROPERTY LINE
- APPROXIMATE CKD PILE COVER LIMIT
- EXISTING WATERCOURSE
- PROPOSED WATERCOURSE ALIGNMENT
- EXISTING LIMIT OF WASTE
- LANDFILL EXPANSION FOOTPRINT
- EXISTING CONDITIONS CONTOURS (1m)
- PROPOSED WASTE CONTOURS (2m)
- APPROXIMATE PEAK OF WASTE (mast)
- STORMWATER FLOW DIRECTION
- RIGHT-OF-WAY AND SEWER EASEMENT
- PROPOSED STORMWATER BASIN (APPROXIMATE)



Client

**TOWN OF ST. MARYS**

Figure Title

**FUTURE SOLID WASTE DISPOSAL EA**  
 ALTERNATIVE 3A - VERTICAL AND HORIZONTAL  
 EXPANSION WITH WATERCOURSE RELOCATION

Drawn

SK

Scale  
 1:4,000

Checked

TR

Date

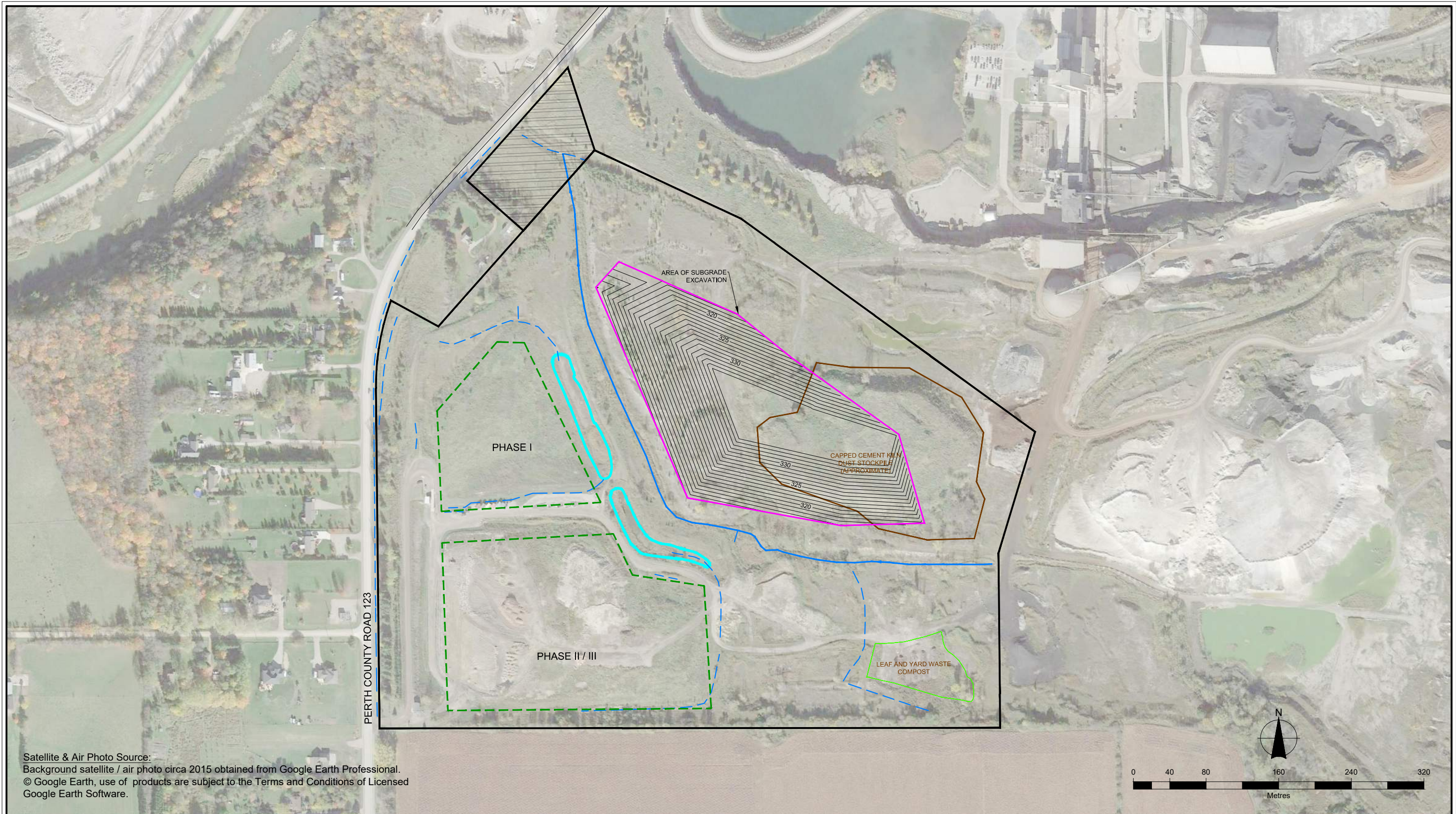
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Project No.

300032339

Figure No.

**7-4**



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**LEGEND**

- PROPERTY BOUNDARY
- EXISTING WASTE FOOTPRINT
- LANDFILL EXPANSION FOOTPRINT
- WATERCOURSE
- DRAINAGE SWALE
- STORM WATER MANAGEMENT BASIN
- COMPOST AREA
- CAPPED CEMENT KILN DUST STOCKPILE (APPROXIMATE)
- RIGHT-OF-WAY AND SEWER EASEMENT

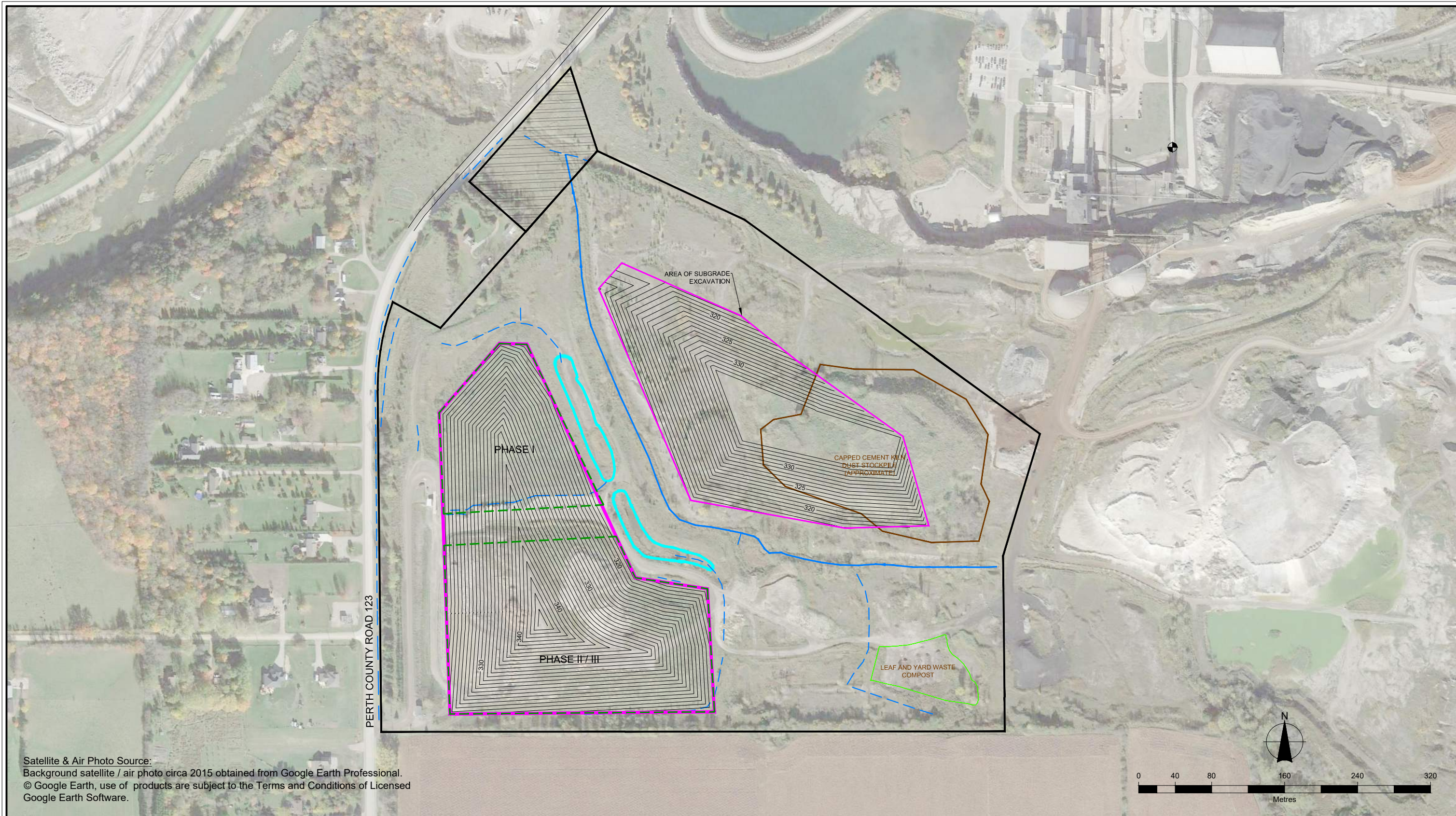


Figure Title  
**FUTURE SOLID WASTE DISPOSAL EA**  
**ALTERNATIVE 4 - NEW LANDFILL FOOTPRINT**

Client  
**TOWN OF ST. MARYS**

Drawn SK	Checked TR	Date JUNE 2022
Scale 1:4,000	Project No. 300032339	

Figure No.  
**7-5**



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- LEGEND**
- PROPERTY BOUNDARY
  - EXISTING LIMIT OF WASTE
  - LANDFILL EXPANSION FOOTPRINT
  - WATERCOURSE
  - DRAINAGE SWALE
  - STORM WATER MANAGEMENT BASIN

- COMPOST AREA
- CAPPED CEMENT KILN DUST STOCKPILE (APPROXIMATE)
- RIGHT-OF-WAY AND SEWER EASEMENT



Figure Title  
**FUTURE SOLID WASTE DISPOSAL EA**  
 ALTERNATIVE 5 - VERTICAL EXPANSION  
 WITH NEW LANDFILL FOOTPRINT

Client  
**TOWN OF ST. MARYS**

Drawn SK	Checked TR	Date JUNE 2022
Scale 1:4,000	Project No. 300032339	

Figure No.  
**7-6**

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**Table 7-1: Key Characteristics of Each Alternative**

	<b>Do Nothing Alternative</b>	<b>Alternative 2: Horizontal Expansion of the Existing Landfill</b>	<b>Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location</b>	<b>Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment</b>	<b>Alternative 5: Vertical Expansion plus a New Footprint</b>
<b>Description</b>	Continue waste collection and disposal using current practices as specified under the current ECA and then cease operations in September 2022 when the ECA expires.	Expand the landfill horizontally to the north and east of the existing landfill footprint. Relocate the watercourse north of the CKD pile.	Expand the landfill vertically, above the existing landfill footprint and horizontally to the north and east of the existing landfill footprint. Relocate the watercourse north of the CKD pile.	Expand the landfill vertically, above the existing landfill footprint and horizontally to the north and east of the existing landfill footprint. Realign a small portion of the watercourse.	Expand the landfill vertically, above the existing landfill footprint and add a new, separate waste footprint on the north side of the watercourse.
<b>Total Footprint</b> <sup>50</sup>	80,000 m <sup>2</sup>	150,000 m <sup>2</sup>	116,000 m <sup>2</sup>	117,000 m <sup>2</sup>	141,000 m <sup>2</sup>
<b>Total New Disposal Volume</b> <sup>51</sup>	Zero – Only provides currently permitted capacity	733,000 m <sup>3</sup> (>40 years)	756,000 m <sup>3</sup> (>40 years)	709,000 m <sup>3</sup> (40 years)	974,000 m <sup>3</sup> (>40 years)
<b>Highest Final Peak</b> <sup>52</sup>	327 masl	323 masl	327 masl	331 masl	345 masl
<b>Changes to Watercourse</b>	No changes to the watercourse.	The entire watercourse through the site (±790 metres) must be relocated north of the CKD Pile.	The entire watercourse through the site (±790 metres) must be relocated north of the CKD Pile.	The watercourse through the site needs a small (±230 metres) realignment.	No changes to the watercourse.
<b>Changes to Ancillary Facilities</b>	<ul style="list-style-type: none"> <li>No changes required.</li> </ul>	<ul style="list-style-type: none"> <li>No changes to scale, scale house or public drop-off area.</li> <li>Existing stormwater ponds A and B to be replaced with larger ponds in a new location.</li> <li>New internal and external ditching required around new waste footprint.</li> <li>New access road and perimeter road required for waste trucks and site maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>Scale and scale house to be relocated. New public drop-off area required.</li> <li>Existing stormwater ponds A and B to be replaced with larger ponds in a new location.</li> <li>New internal and external ditching required around new waste footprint.</li> <li>New access road and perimeter road required for waste trucks and site maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>Scale and scale house to be relocated. New public drop-off area required.</li> <li>Existing stormwater ponds A and B to be replaced with larger ponds in a new location.</li> <li>New internal and external ditching required around new waste footprint.</li> <li>New access road and perimeter road required for waste trucks and site maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>Scale and scale house to be relocated. New public drop-off area required.</li> <li>Existing stormwater ponds A and B to be maintained at their current size and location.</li> <li>New footprint, north of watercourse, requires new separate ponds and ditching.</li> <li>New access road and perimeter road required for waste trucks and site maintenance.</li> <li>New bridge/culvert required for access road to cross the watercourse.</li> </ul>

<sup>50</sup> Includes footprint of existing landfill in addition to expansion footprint.

<sup>51</sup> The design of Alternatives 2, 3 and 5 is such that more disposal volume can be provided than what is required. Through this EA only 708,000 m<sup>3</sup> will be approved and any excess volume will not be used without further approvals.

<sup>52</sup> Includes final cover. For Alternatives 2, 3 and 5, where excess disposal volume is provided, actual final peak may be 1-2m lower.

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**Table 7-2: Standard Mitigation and Operating Practices Common to All Alternatives**

Phase	Mitigation/Standard Operating Practice
Construction	<ul style="list-style-type: none"> <li>• Keep construction equipment well maintained and in good working order.</li> <li>• Limit use of equipment to daytime hours and adhere the Town’s Noise By-law.</li> <li>• Require contractors to ensure construction activities conform to the criteria set out in Noise Pollution Control (NPC) 115 of 83 dB.</li> <li>• Apply dust suppressants, as required.</li> <li>• Install and maintain erosion and sediment control (ESC) measures prior to any earth works and until the site has been stabilized and then remove them.</li> <li>• Inspect ESC measures to confirm they are functioning and are maintained as required. If control measures are not functioning properly, limit work in the area until the problem is resolved.</li> <li>• Apply wet weather restrictions during site preparation and excavation. Avoid work near watercourses during periods of excessive precipitation and/or excessive snow melt.</li> <li>• Refuel and maintain construction equipment within designated areas only.</li> <li>• Handle hazardous materials used for construction in accordance with best practices and O. Reg. 347.</li> <li>• Store stockpiled material at least 30 m from any waterway to prevent the discharge of deleterious substances into the water.</li> <li>• Immediately contain and clean up spills or depositions into watercourses in accordance with provincial regulatory requirements and the contingency plan. Keep a hydrocarbon spill response kit on-site at all times during construction.</li> <li>• Report spills to the Ontario Spills Action Centre at 1-800-268-6060.</li> <li>• Clear vegetation outside of the bird and bat nesting/roosting season, noted to be April 1 to September 31.</li> </ul>



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Phase	Mitigation/Standard Operating Practice
	<ul style="list-style-type: none"> <li>• Compensate for the loss of Eastern Meadowlark by creating habitat elsewhere in accordance with the ESA Regulations, or a species conservation charge paid to the Species at Risk Conservation Trust (effective April 29, 2022).</li> <li>• Erect ESC fencing around work areas to prevent wildlife from entering work zones. Relocate wildlife from within work zones, if required. If a SAR species is encountered in a work zone, cease all work in the area and contact MECP for further instruction. Obtain necessary permitting to relocate salvaged wildlife prior to construction.</li> <li>• Complete a Tree Inventory and Landscape Plan to include restoration and visual buffers. Replant trees at a 10:1 ratio for trees lost during construction.</li> <li>• Manage construction traffic to avoid traffic congestion and safety concerns at the landfill entrance on Water St. S.</li> <li>• Monitor and repair site access roads and perimeter ditching as necessary during construction.</li> <li>• Contact the Archaeology Program Unit and MHSTCI at <a href="mailto:archaeology@ontario.ca">archaeology@ontario.ca</a> in the unexpected event that archaeological remains are found during construction activities. Indigenous communities will also be notified if the resources appear to pertain to Indigenous groups.</li> <li>• Avoid the creation of temporary vertical or near-vertical spoil piles within the landfill and compost pile that are prone to frequent disturbance from landfill construction to reduce the chance of attracting nesting Bank Swallow. Following Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario (MNRF, 2017).</li> </ul>
Operation	<ul style="list-style-type: none"> <li>• Apply dust control measures, such as water, as required.</li> <li>• Apply daily cover to control landfill gas emissions, odour, dust, reduce blowing litter and control vermin.</li> <li>• Continue to operate the landfill within daylight hours only. Existing operations are only carried out between 8:30 am and 4:30 pm, four days per week.</li> <li>• Maintain and operate a functional LCS to capture leachate for treatment at the Town’s wastewater treatment plant (WWTP).</li> </ul>

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Phase	Mitigation/Standard Operating Practice
	<ul style="list-style-type: none"> <li>• In the case of a temporary WWTP shut-down or short-term lack of capacity in the system, close the LCS discharge and hold leachate in the landfill until treatment can resume at the WWTP.</li> <li>• Regularly monitor the site for seepage due to leachate mounding. If a seep occurs that escapes the LCS, follow Spills/Leachate Seep Protocols (refer to Section 9.0 and 11.3), including patching seeps, closing outlets in SWM basins (where escaped leachate will collect) and directing contaminated water from the SWM basins to the LCS.</li> <li>• Maintain a network of groundwater and surface water monitoring wells/stations, including monitoring of private drinking water wells and report on findings in Annual Monitoring Reports. Implement Adaptive Management Plans based on monitoring results (refer to Section 11.3).</li> <li>• Maintain existing monitoring wells located within the CKD Stockpile for use in determining groundwater contours and flow direction at the site. Periodically sample these wells (i.e., once every 3 years) until sampling results show stable or predictable results to the satisfaction of MECP and then discontinue monitoring.</li> <li>• Provide and maintain stormwater control measures to direct, slow and retain water, including:             <ul style="list-style-type: none"> <li>– Additional berms against the waste fill area.</li> <li>– Stormwater retention ponds/basins.</li> <li>– Flow control measures for stormwater management ditches (which may include rip-rap or vegetation).</li> <li>– Vegetated buffer areas along waterways.</li> </ul> </li> <li>• Manage and direct waste collection vehicles to avoid traffic congestion and safety concerns at the landfill entrance on Water St. S.</li> <li>• Apply contingency measures for bird and vermin control, on an as-needed basis, including the use of noise makers, poisons, traps or professional pest control.</li> <li>• Provide visual barriers, such as berms or tree plantings to block sightlines.</li> <li>• Conduct regular inspections by landfill staff to observe, record any operational issues and implement corrective actions, including:             <ul style="list-style-type: none"> <li>– Fence patrol and litter collection.</li> </ul> </li> </ul>

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Phase	Mitigation/Standard Operating Practice
	<ul style="list-style-type: none"> <li>- Cover and vegetation inspections.</li> <li>- Erect portable litter fencing.</li> <li>• Continue the existing program to record, investigate, and respond to public complaints and take corrective actions.</li> <li>• Monitor cover placement (application quality and placement schedule) to minimize the attractiveness of the Site to vectors<sup>53</sup> and vermin<sup>54</sup> as well as larger animals.</li> <li>• Avoid the creation of temporary vertical or near-vertical spoil piles within the landfill and compost pile that are prone to frequent disturbance from landfill operations to reduce the chance of attracting nesting Bank Swallow. Following Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario (MNRF, 2017).</li> </ul>
Closure	<ul style="list-style-type: none"> <li>• Prepare a Closure Plan at least two years prior to closure of the landfill site as per ECA A150203 Condition 14.11 and Condition 26.0 and obtain MECP approval prior to closure.</li> <li>• Reseed grassed areas with native grasses and wildflowers, where possible.</li> <li>• Maintain a network of long-term groundwater and surface water monitoring wells/stations and reporting on findings in Annual Post-Operational Monitoring Reports. Implement Adaptive Management measures based on monitoring results (refer to Section 11.3).</li> <li>• Prepare and carry out procedures during post closure including, but not limited to:               <ul style="list-style-type: none"> <li>- Operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;</li> <li>- Inspect and repair areas of settlement, erosion, or leachate seeps;</li> <li>- Record keeping and reporting;</li> <li>- Complaint contact and response procedures; and,</li> <li>- Assessing the landfill's contaminating lifespan based on results of groundwater monitoring programs.</li> </ul> </li> </ul>

<sup>53</sup> A *vector* is an organism, such as a mosquito or tick, which carries disease-causing micro-organisms from one host to another.

<sup>54</sup> *Vermin* are various small animals or insects, such as rats, gulls or cockroaches, which are destructive, annoying, or injurious to health.

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## 7.2 Evaluation Indicators

Positive and negative environmental effects that could potentially arise were identified and described for each of the Alternatives using the indicators in Table 7-3. The indicators are organized around the natural, social, cultural and man-made components of the environment. Effects were characterized based on their magnitude, duration, frequency and reversibility.

Any change can result in some type of effect. Although the Preferred Alternative will be selected on the basis that it will result in minimal effects, some effect is still likely to be felt. Measures for mitigating potential negative environmental effects from Alternative have been identified and described. Any net effects that cannot be fully mitigated were then identified.

The evaluation of Alternative Methods considered the potential effects of each alternative on the various components of the environment taking into consideration the mitigation efforts that can be made to reduce or eliminate these effects and the net effects which cannot be mitigated. The Preferred Alternative was selected based on which Alternative was most likely to result in the least number of net effects of high magnitude, long duration, repetitive frequency and which have a limited chance to be reversed. At the conclusion of the assessment a Preferred Method for Carrying Out the Undertaking was identified.

Draft evaluation indicators were provided in the Terms of Reference. Section 5.4.5 of the TOR indicated that, "Criteria [i.e., indicators] may be further refined as a result of comments received from the public, Aboriginal communities and agencies during the EA process".

Some modifications to the indicators have been made. The final indicators and reason for changes to the indicators are presented in Table 7-3.

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**Table 7-3: Evaluation Indicators**

Environmental Sub-component	Original Indicator	Revised Indicator	Justification
<b>Atmosphere</b>			
Air Quality	<ul style="list-style-type: none"> <li>• Emissions modelling outputs</li> <li>• Number of people potentially impacted</li> </ul>	<ul style="list-style-type: none"> <li>• Changes in air quality due to construction and closure activities</li> <li>• Changes in air quality due to landfill operations</li> </ul>	<p>The indicators have been revised to better articulate if there are changes to air quality effects experienced by receptors as a result of the landfill expansion. This change enhances the ability of the indicators to measure effects. There is no change to the effects assessed as a result of the revision to the indicators.</p>
Odours	<ul style="list-style-type: none"> <li>• Amount generated by existing operations</li> <li>• Number of potential impacts</li> <li>• Predicted boundary operations</li> </ul>	<ul style="list-style-type: none"> <li>• Number of receptors potentially impacted by odour</li> <li>• Frequency of odour impacts</li> </ul>	<p>The indicators have been revised to measure characteristics of odour impacts namely the number of receptors impacted and the frequency with which the impacts may be experienced given odour impacts depend on the proximity of the working face to receptors. The revised indicators are more understandable and combine the original indicators to better articulate impacts. There is no change to the impacts assessed as a result of the revision to the indicators.</p>
Noise	<ul style="list-style-type: none"> <li>• Amount generated by existing operations</li> <li>• Times noise is anticipated during operations</li> <li>• Number of impacts</li> <li>• Boundary conditions</li> </ul>	<ul style="list-style-type: none"> <li>• Change in noise levels due to construction and closure activities</li> <li>• Number of receptors experiencing noise above provincial criteria due to landfill operations</li> <li>• Number of receptors experiencing a change in noise level due to landfill operations</li> </ul>	<p>The indicators have been combined and revised to distinguish between noise related to construction and to operation and to measure the change in noise impact associated with the landfill expansion. This recognizes that impacts are already being experienced at receptors and addresses whether or not those impacts will change and how. There is no change to the impacts assessed as a result of the revision to the indicators.</p>
<b>Hydrogeology</b>			
Groundwater Impacts	<ul style="list-style-type: none"> <li>• Contaminating lifespan</li> <li>• Hydraulic head, local and regional hydrogeology</li> <li>• Nearby groundwater receivers</li> <li>• Number and severity of potential impacts</li> <li>• Potential Drinking Water Source Impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Risk of increasing leachate generation or strength</li> <li>• Risk of impacting groundwater quality and flow</li> <li>• Risk of altering groundwater flow</li> </ul>	<p>The indicators have been revised and combined to better articulate the risks to groundwater associated with the alternatives and, specifically, the risks associated with the proximity of the CKD pile. The new indicators synthesize the information and data measured by the previous indicators. Thus, the indicators are better measures of the potential risks and impacts. The original intent of the indicators is being maintained and the revised indicators better articulate the risks to groundwater from each alternative.</p>

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Environmental Sub-component	Original Indicator	Revised Indicator	Justification
Geology – Aggregate Extraction Considerations	<ul style="list-style-type: none"> <li>Remaining reserves in the vicinity of the landfill property</li> <li>Status of the license and any attached conditions</li> </ul>	<ul style="list-style-type: none"> <li>Indicator removed.</li> </ul>	<p>St. Marys Cement surrendered their licence under Aggregate License 4494 dated September 21, 2016, for the existing and potential expanded landfill areas. This surrender was approved under Section 16(2) of the <i>Aggregate Resources Act</i> by the Ministry of Natural Resources and Forestry on November 8, 2016. The entire St. Marys Landfill property is now unencumbered by the aggregate extraction license and thus, aggregate extraction is no longer potentially impacted by landfill expansion.</p>
<b>Surface Water</b>			
Quality	<ul style="list-style-type: none"> <li>Number of watercourses in study area</li> <li>Size of watercourses in area</li> <li>Predicted impacts to offsite quality</li> </ul>	<ul style="list-style-type: none"> <li>Risk of contaminated runoff reaching surface water</li> <li>Risk of leachate from seeps reaching surface water</li> <li>Risk of leachate from CKD Pile reaching surface water</li> <li>Risk of on-site surface water quality impacting Thames River</li> </ul>	<p>The indicators have been revised to better articulate the risks to surface water associated with the alternatives and, specifically, the risks associated with the proximity of the CKD pile. The new indicators synthesize the data from monitoring, design information and other data and are better measures of the risks and impacts. The original intent of the indicators is being maintained and the revised indicators better articulate the risks to surface water from each alternative. In particular, one indicator specifically addresses the potential risk to water quality of the Thames River in response to GRT comments.</p>
Quantity	<ul style="list-style-type: none"> <li>Duration/frequency/severity of potential on and off site impacts</li> </ul>	<ul style="list-style-type: none"> <li>Changes to surface water flow</li> </ul>	<p>The indicator has been revised to better define the potential effect as a change to surface water flows rather than the previous vague indicator. It is appropriate to focus on changes to flow in order to better capture the effects to surface water quantity of the relocation or realignment of the watercourse and associated site drainage.</p>
<b>Ecology</b>			
Terrestrial	<ul style="list-style-type: none"> <li>Impact and duration of site changes on habitat</li> <li>Number and populations of species at risk present</li> <li>Potential for interactions</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to Significant Wildlife Habitat</li> <li>Impacts to Habitat of Endangered and Threatened Species</li> <li>Impacts to Other Wildlife</li> </ul>	<p>The site has been significantly impacted historically by industrial operations and more recently landfilling. There are few habitat features present on site and what is present is of low quality and poorly connected to larger habitat patches. Furthermore, species using these habitat patches are acclimatized to the landfilling and industrial operations on site. The indicators have been revised to more clearly focus on effects to the remaining habitat patches. The original intent of the indicators is being maintained and the revised indicators better articulate and measure the effects. There is no change to the effects assessed as a result of the revision to the indicator.</p>
Aquatic	<ul style="list-style-type: none"> <li>Quantity and variety of SAR present</li> <li>Changes as a result of site development</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to fish habitat</li> <li>Impacts to Aquatic Species at Risk</li> </ul>	<p>The aquatic habitat within the watercourse on site is limited by the lack of connectivity to the Thames River. However, the watercourse is connected to the Thames River and contributes to water quality and quantity thus contributes to indirect fish habitat. The indicators have been revised to more clearly address the potential effects associated with the alternative methods. The original intent of the indicators is being maintained and the revised indicators better articulate and measure the effects. There is no change to the effects assessed as a result of the revision to the indicators.</p>

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Environmental Sub-component	Original Indicator	Revised Indicator	Justification
<b>Cultural Heritage Resources</b>			
Buildings	<ul style="list-style-type: none"> <li>Number of significant buildings present in the local area</li> <li>Potential impacts to buildings</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to Built Heritage Resources and Cultural Heritage Landscapes.</li> </ul>	<p>Criteria were changed upon advice from MTCS (Now MHSTCI) to address the comments raised and increase the clarity of the assessment. In an August 4, 2017 letter, Dan Minkin of MTCS noted that, "...if the three classes of cultural heritage resources are to be grouped into two subsections, it would make sense to group BHRs and CHLs into one subsection and deal with archaeological resources in another, reflecting the way these types of resources are grouped for the purposes of investigation through technical studies and development of mitigation measures."</p> <p>He also recommended, that, "the headings of subsections B1 and B2 in Section 7.2.2.2 use the terms Built Heritage Resources and Cultural Heritage Landscapes instead of Heritage Structures and Heritage Landscapes." The indicators are changed to align with the headings and to reflect terminology used by MHSTCI.</p> <p>There is no change to the effects assessed as a result of the revision to the indicators.</p>
Viewscapes	<ul style="list-style-type: none"> <li>Presence of significant viewscapes</li> </ul>	<ul style="list-style-type: none"> <li>Combined with criteria above.</li> </ul>	
Archaeological Resources	<ul style="list-style-type: none"> <li>Presence of or likelihood of archaeological resources</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to Archaeological Resources</li> </ul>	<p>Criteria were changed to measure the potential effects to the resource rather than the presence of the resource. There is no change to the effects assessed as a result of the revision to the indicator.</p>
<b>Transportation</b>			
Local	<ul style="list-style-type: none"> <li>Amount/type of traffic generated</li> </ul>	<ul style="list-style-type: none"> <li>Impacts to traffic on Water St.</li> </ul>	<p>The indicator was revised to address the traffic effects more specifically since traffic effects are localized to Water St. S. with all methods proposed. The amount of traffic generated by the landfill is not anticipated to change for any of the alternatives. There is no change to the effects assessed as a result of the revision to the indicator.</p>
Regional	<ul style="list-style-type: none"> <li>Amount/type of traffic generated</li> </ul>	<ul style="list-style-type: none"> <li>Indicator removed.</li> </ul>	<p>This indicator had relevance to the evaluation of Alternatives To the Undertaking but not the Alternative Methods as the landfill will only serve the Town therefore all effects are local.</p>
<b>Land Use</b>			
General	<ul style="list-style-type: none"> <li>Amount of land required</li> <li>Current land use</li> <li>Presence of sensitive lands within study areas</li> </ul>	<ul style="list-style-type: none"> <li>First two indicators removed as all of the land is currently designated for landfill and is owned by the Town.</li> </ul>	<p>There was no change to these indicators.</p>
Agriculture	<ul style="list-style-type: none"> <li>Number and type of farms in study area</li> </ul>	<ul style="list-style-type: none"> <li>Indicator removed.</li> </ul>	<p>Dealt with under sensitive land uses above</p>

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Environmental Sub-component	Original Indicator	Revised Indicator	Justification
Aggregate Resources	<ul style="list-style-type: none"> <li>• Conditions and Status of the Aggregate License relevant to this site.</li> <li>• Potential for interference with aggregate extraction operations on-site and within the study area vicinity.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts to aggregate extraction and processing in the study area vicinity</li> </ul>	<p>St. Marys Cement surrendered their licence under Aggregate License 4494 dated September 21, 2016, for the existing and potential expanded landfill areas. This surrender was approved under Section 16(2) of the <i>Aggregate Resources Act</i> by the Ministry of Natural Resources and Forestry on November 8, 2016. The entire St. Marys Landfill property is now unencumbered by the aggregate extraction license.</p> <p>SMC continues to be an adjacent land use however, the portions of the SMC site adjacent to landfilling operations are used for stockpiling of materials and thus, will be unaffected by landfilling operations. SMC has not raised any concerns about landfilling operations to date nor the expansion plans.</p>
<b>Socio-economic conditions</b>			
Employment	<ul style="list-style-type: none"> <li>• Number, type, duration of changes to local workforce</li> </ul>	<ul style="list-style-type: none"> <li>• Indicator removed.</li> </ul>	<p>This indicator had relevance to the evaluation of Alternatives To the Undertaking but not the Alternative Methods. For the alternative methods for landfill expansion there is no difference in the employment created.</p>
Financial	<ul style="list-style-type: none"> <li>• Short, medium, long term financial costs to the Town, Present Value assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Construction Costs</li> <li>• Operational and Maintenance Costs</li> </ul>	<p>Indicators revised to provide a more understandable measure of costs associated with the development and operation of the landfill site.</p>
Economic	<ul style="list-style-type: none"> <li>• Changes to revenues, costs, taxes anticipated to local businesses</li> </ul>	<ul style="list-style-type: none"> <li>• Indicator removed.</li> </ul>	<p>This indicator had relevance to the evaluation of Alternatives To the Undertaking but not the Alternative Methods as it was capturing the economic impact of moving landfill operations out of the Town of St Marys.</p>
Social	<ul style="list-style-type: none"> <li>• Number of residences impacted, type/ area of impacted land uses etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts to enjoyment of life/private property</li> </ul>	<p>The indicator has been revised to better articulate the social effects to residents potentially impacted, including the overall effects of noise, odour, air quality, traffic etc. There is no change to the effects assessed as a result of the revision to the indicators.</p>
Environmental	<ul style="list-style-type: none"> <li>• Includes activities as discussed in the above sections, with additional emphasis placed on the items brought forward as concerns.</li> </ul>	<ul style="list-style-type: none"> <li>• Relocated under Indigenous component.</li> </ul>	<p>This indicator has been moved as environmental concerns described by Indigenous communities are only relevant only to the Indigenous component.</p>



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Environmental Sub-component	Original Indicator	Revised Indicator	Justification
<b>Indigenous Communities</b>			
Cultural/ Environmental	<ul style="list-style-type: none"> <li>• Presence of known sites within the area. Records of previous site disturbances.</li> <li>• Distance to established communities</li> <li>• Expressed concerns</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts to culturally or environmentally significant features identified by Indigenous communities.</li> </ul>	The indicator has been revised to more clearly focus on the features and concerns identified by the Indigenous Communities and the potential for effects upon them. The new indicator synthesizes the results of other technical assessments with respect to how features of cultural or environmental significance to Indigenous communities are impacted
Land Use	<ul style="list-style-type: none"> <li>• Existing land use focusing on First Nation's significance, size of area, presence of any sensitive uses.</li> </ul>	<ul style="list-style-type: none"> <li>• Indicator removed.</li> </ul>	This indicator was not relevant to the Study Area nor to the alternatives for landfill expansion as there are no current uses of the site area by Indigenous peoples.

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### **7.3 Evaluation Framework**

The evaluation of Alternatives was carried out in several steps, as follows:

- The effects for each alternative were identified based on each of the indicators identified in Table 7-3. It was assumed that the standard landfill mitigation, design and operational measures listed in Table 7-2 will be implemented. Only effects remaining after standard mitigation is applied were identified.
- Any additional mitigation measures specific to each Alternative were identified. In addition, monitoring may identify unanticipated effects and, using an Adaptive Management approach, additional mitigation measures may be implemented. Where there is uncertainty about the predicted effects these additional mitigative measures that may be implemented have also been identified.
- Finally, any net effects remaining after the additional mitigation is applied were identified. The magnitude, duration, frequency, and reversibility of any net effects was also described to better characterize the net effects.

The net effects of each alternative were ranked as follows for each environmental component:

- Most Preferred
- 2<sup>nd</sup> Most Preferred
- 3<sup>rd</sup> Most Preferred
- 4<sup>th</sup> Most Preferred
- Least Preferred

The Preferred Alternative overall is the Alternative that is most preferred for most criteria and is identified based on reasoned trade-offs between the alternatives. These trade-offs are discussed in both the summary tables and the text as appropriate. No indicators were given greater weight or significance than others.

The evaluation of Alternative Methods is presented in the following sections.

### **7.4 Impacts to the Atmosphere**

#### **7.4.1 Air Quality**

##### **Current Conditions and Indicators of Effect**

Under the current conditions, landfill operations and equipment emit dust and products of combustion (i.e., vehicle exhaust) while the landfill materials are a source of

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particulate matter and contaminants typically found in landfill gas. Current emissions from all of these sources are within provincial limits.

With the landfill expansion there is some potential for emissions to increase. The following indicators were used to assess any potential changes in air quality experienced by residents of Water St. S., the closest receptors, due to the landfill expansion:

- Indicator 1: Changes in air quality due to construction/closure activities
- Indicator 2: Changes in air quality due to landfill operations

### **Effects**

An assessment of air quality effects was completed in the Emission Summary and Dispersion Modelling Report provided in Volume III, Appendix A for all Alternatives except Alternative 3A which is assessed in Appendix D. Findings are summarized in Table 7-4 and the following discussion:

#### ***Indicator 1: Changes in air quality due to construction/closure activities:***

There is no construction associated with the Do Nothing Alternative. However, should this Alternative be selected, the landfill would be closed at the end of the current ECA which expires in September 2022. Some closure-related activities are similar to landfill construction and would involve the use of construction equipment and machinery. This equipment will emit vehicle exhaust. The quantities of these emissions are relatively minimal and for a short period of time when compared to the ongoing traffic on Water St. S. and regular landfill operations. Some dust emissions can be expected. Dust will be suppressed with water, as required to reduce effects.

For all other Alternatives, construction and closure activities will be required over the lifespan of the landfill. Construction will occur over different time periods depending on the Alternative selected and it will occur while the landfill site is operating. However, construction for all Alternatives is expected to take approximately the same amount of time, using the same type of construction equipment and materials. Therefore, there are no significant differences between dust or construction vehicle emissions during construction or closure for Alternatives 2, 3, 3A and 5.

There are no specific regulated limits on emissions from construction activities. However, for all Alternatives, emissions are expected to be relatively minor and within the range typically expected during construction projects.

Overall, changes in air quality due to construction and closure activities are minor. There is a slightly less effects associated with the Do Nothing Alternative because there is no construction phase and only a closure phase.

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***Indicator 2: Changes in air quality due to landfill operations:***

During landfill operations, all Alternatives are expected to emit products of combustion, and particulate matter from vehicles as well as various contaminants known to be found in landfill gas. An Air Dispersion Model was used to predict current conditions and air quality effects to be expected from Alternatives 2, 3 and 5. The results were compared to the “Air Contaminants Benchmarks List: Standards, Guidelines and Screening Levels for Assessing Point of Impingement Concentrations of Air Contaminants”, (MECP, 2018). The model showed that for all Alternatives, based on site emissions, the predicted concentrations of contaminants in the air are expected to be below the provincially accepted levels. There were no significant differences in the quantity or type of emissions between Alternatives 2, 3 or 5 or the Do Nothing Alternative and no significant changes from current conditions. With the Do Nothing Alternative, emissions are expected over a shorter timeframe as the landfill will close in the near future. Some emission of landfill gas will continue after closure but at a lower level than during operations.

Alternative 3A was not modeled. However, emissions from Alternative 3A are expected to be similar or better than emissions produced by Alternative 3. The model considers the effect at the property line and anywhere off property. As a result, the maximum ground level concentration can be at one location for one scenario and a different location for another scenario. The footprint of the landfill in Alternative 3A is the same distance to the western property line as Alternative 3. The model also considers the final landfill height. The maximum concentration of air contaminants occurs at ground level. With increasing height, there is greater dispersion and, therefore, lower concentrations of contaminants in the air. Alternative 3A will have a final landfill height that is higher than Alternative 3. Therefore, relative to Alternative 3, Alternative 3A can be expected to have slightly lower concentrations of air contaminants. For the purposes of this evaluation, the differences are expected to be minimal and are considered negligible.

Overall, only very minor changes in air quality due to landfill operations are expected, primarily related to the differences in height and footprint of each Alternative. None of the Alternatives are significantly different and all emissions are predicted to be below provincial limits. The Do Nothing Alternative has slightly fewer effects because landfilling will cease in the near future and, therefore landfill gas creation and emissions will begin to decrease and will continue to decrease over time.

**Additional Mitigation**

Standard operating procedures are sufficient to maintain LFG and other emissions at low levels for all Alternatives.

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There are currently no requirements for St. Marys to monitor LFG emissions. However, should signs of significant LFG emission become apparent (e.g., significant odour may signify that higher-than-expected emissions are occurring), monitoring for LFG may become necessary. As a contingency measure to be addressed through Adaptive Management, an LFG monitoring program may be required. Subject to findings, additional measures, such as additional cover or LFG collection may be required. Adaptive Management measures will be developed in conjunction with MECP, as warranted.

### **Net Effects**

The net effects of all Alternatives are similar as emissions are expected to be similar and within provincial limits. The Do Nothing Alternative is slightly preferred as there will be no construction-related air emissions and emissions from landfill operations will cease in the short term. All other Alternatives are considered to have equal minor net effects, meeting all provincial limits, as summarized in Table 7-4.

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**Table 7-4: Potential Effects to Air Quality**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Indicator 1:</b> <b>Changes in air quality due to construction/closure activities</b>	There will be no construction effects. There will be some dust emission associated with closure activities expected to occur in the near future. This is expected to be minor and within levels typically expected for construction.	Dust may increase during construction and closure but will be suppressed with water. Any dust emissions are expected to be minor and within levels typically expected for construction.	Dust may increase during construction and closure but will be suppressed with water. Any dust emissions are expected to be minor and within levels typically expected for construction.	Dust may increase during construction and closure but will be suppressed with water. Any dust emissions are expected to be minor and within levels typically expected for construction.	Dust may increase during construction and closure but will be suppressed with water. Any dust emissions are expected to be minor and within levels typically expected for construction.
<b>Indicator 2:</b> <b>Changes in air quality due to landfill operations</b>	Air quality contaminant levels at the landfill boundary will be within provincial limits. Emissions will decrease when the landfill closes at the end of the current ECA.	Air quality contaminant levels at the landfill boundary will be within provincial limits.	Air quality contaminant levels at the landfill boundary will be within provincial limits.	Air quality contaminant levels at the landfill boundary will be within provincial limits.	Air quality contaminant levels at the landfill boundary will be within provincial limits.
<b>Additional Mitigation</b>	Should signs of significant LFG emission become apparent (e.g., significant odour may signify that higher-than-expected emissions are occurring), monitoring for LFG may become necessary. As a contingency measure to be addressed through Adaptive Management, an LFG monitoring program may be required. Subject to findings, additional measures, such as additional cover or LFG collection may be required.				
<b>Net Effects</b>  M= Magnitude D= Duration F= Frequency R= Reversibility	No change to existing effects anticipated: <b>M:</b> Minor. All air emissions are within provincial guidelines. <b>F:</b> Contaminants will be emitted in a low level in the short-term during closure and then reducing over time post-closure. <b>D:</b> Emissions are expected through the construction, operation and closure phases of the landfill. <b>R:</b> Air quality effects are reversible but only after landfill closure.	Minor net effects anticipated: <b>M:</b> Minor. All air emissions are within provincial guidelines. <b>F:</b> Contaminants will be emitted in a low level on an ongoing basis. <b>D:</b> Emissions are expected through the construction, operation and closure phases of the landfill. <b>R:</b> Air quality effects are reversible but only after landfill closure.	Minor net effects anticipated: <b>M:</b> Minor. All air emissions are within provincial guidelines. <b>F:</b> Contaminants will be emitted in a low level on an ongoing basis. <b>D:</b> Emissions are expected through the construction, operation and closure phases of the landfill. <b>R:</b> Air quality effects are reversible but only after landfill closure.	Minor net effects anticipated: <b>M:</b> Minor. All air emissions are within provincial guidelines <b>F:</b> Contaminants will be emitted in a low level on an ongoing basis. <b>D:</b> Emissions are expected through the construction, operation and closure phases of the landfill. <b>R:</b> Air quality effects are reversible but only after landfill closure.	Minor net effects anticipated: <b>M:</b> Minor. All air emissions are within provincial guidelines. <b>F:</b> Contaminants will be emitted in a low level on an ongoing basis. <b>D:</b> Emissions are expected through the construction, operation and closure phases of the landfill. <b>R:</b> Air quality effects are reversible but only after landfill closure.
<b>Evaluation</b>	<b>Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>

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## 7.4.2 Odours

### Current Conditions and Indicators of Effect

Odours were modeled using the same air dispersion model used in the evaluation of air quality. The differences between Alternatives have been assessed based on the number of sensitive receptors (i.e., residences) likely to experience odour concerns and the frequency of those concerns. At sensitive receptors, the impact of 6 Odour Units (OU) appears to match the level of odour at which complaints tend to be received. Under current conditions, approximately ten receptors may experience 6 OU up to 0.7% of the time.

Modeling was conducted to identify any changes in odour using the following indicators:

- Indicator 1: the number of receptors impacted by odour; and,
- Indicator 2: the frequency at which odour impacts can be expected.

### Effects

An assessment of odour effects was completed in the in the Emission Summary and Dispersion Modelling Report provided in Volume III, Appendix A for all Alternatives except Alternative 3A which is assessed in Appendix D. A summary is provided in Table 7-6 and in the following discussion.

#### ***Indicator 1: the number of receptors impacted by odour and Indicator 2: the frequency at which odour impacts can be expected:***

Both indicators predicting the number of receptors affected and the frequency at which they will be affected were modeled simultaneously. All Alternatives are expected to emit odour during operations. During construction and closure, odours are expected to be minimal and less than current operating conditions, a such, the effects assessment focuses on the operational period only.

There is no specific provincially-regulated limit for odour. Ideally, odour should be below 1OU. However, at the St. Marys landfill the impact of 6 OU appears to match the level of odour at which complaints tend to be received, based on the complaints record.

During operations, for each of the Alternatives the effects are similar to current conditions, with only minor differences, as shown in Table 7-5. Alternative 3A was not modelled but is expected to have similar effects to Alternative 3 as its height and footprint are relatively similar.

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**Table 7-5: Predicted Odour Impacts**

Receptors	Existing			Alternative Method 2			Alternative Method 3			Alternative Method 5		
	< 1 OU (%)	1 to 6 OU (%)	> 6 OU (%)	< 1 OU (%)	1 to 6 OU (%)	> 6 OU (%)	< 1 OU (%)	1 to 6 OU (%)	> 6 OU (%)	< 1 OU (%)	1 to 6 OU (%)	> 6 OU (%)
1	97.62%	2.38%		98.86%	1.14%		98.69%	1.31%		98.21%	1.79%	
2	97.52%	2.48%		98.81%	1.19%		98.58%	1.42%		98.14%	1.86%	
3	96.96%	2.57%	0.47%	98.45%	1.53%	0.02%	97.93%	2.07%		97.33%	2.67%	
4	96.98%	2.50%	0.52%	98.45%	1.49%	0.07%	97.88%	2.12%		97.13%	2.82%	0.05%
5	97.19%	2.28%	0.53%	98.43%	1.41%	0.16%	97.77%	2.01%	0.23%	96.83%	3.00%	0.17%
6	97.32%	2.23%	0.45%	98.32%	1.46%	0.22%	97.56%	2.08%	0.36%	96.52%	3.18%	0.30%
7	97.83%	2.13%	0.04%	97.72%	1.86%	0.42%	96.28%	2.93%	0.78%	97.04%	2.24%	0.72%
8	97.86%	2.13%	0.01%	97.72%	1.85%	0.43%	96.38%	3.08%	0.54%	97.44%	1.92%	0.64%
9	98.03%	1.97%		97.68%	1.93%	0.39%	96.53%	3.04%	0.43%	97.70%	1.77%	0.54%
10	98.14%	1.86%		97.66%	1.95%	0.39%	96.69%	2.94%	0.37%	97.83%	1.75%	0.42%
11	98.23%	1.77%		97.65%	2.02%	0.33%	96.90%	2.85%	0.26%	97.91%	1.78%	0.32%
12	98.58%	1.42%		97.78%	2.14%	0.08%	97.79%	2.14%	0.07%	98.16%	1.81%	0.03%
13	98.65%	1.35%		97.87%	2.07%	0.06%	97.92%	2.04%	0.04%	98.25%	1.74%	0.01%
14	96.68%	2.75%	0.58%	98.39%	1.60%	0.02%	97.82%	2.18%		97.31%	2.69%	
15	96.71%	2.59%	0.70%	98.33%	1.60%	0.07%	97.76%	2.24%		97.04%	2.90%	0.06%
16	96.89%	2.43%	0.69%	98.32%	1.52%	0.16%	97.65%	2.17%	0.18%	96.78%	2.99%	0.22%
17	97.10%	2.33%	0.58%	98.24%	1.53%	0.24%	97.44%	2.12%	0.44%	96.29%	3.36%	0.35%
18	98.56%	1.44%		97.67%	2.22%	0.11%	97.72%	2.18%	0.10%	98.13%	1.81%	0.06%
19	98.65%	1.35%		97.80%	2.11%	0.09%	97.88%	2.05%	0.07%	98.24%	1.74%	0.02%
20	98.66%	1.34%		99.23%	0.77%		99.16%	0.84%		98.89%	1.11%	
21	98.52%	1.48%		99.19%	0.81%		99.11%	0.89%		98.77%	1.23%	
22	97.35%	2.65%		98.75%	1.25%		98.61%	1.39%		98.04%	1.96%	
23	98.61%	1.39%		99.19%	0.81%		99.11%	0.89%		98.82%	1.18%	
24	98.51%	1.49%		99.17%	0.83%		99.06%	0.94%		98.75%	1.25%	
25	97.34%	2.66%		98.71%	1.29%		98.52%	1.48%		97.93%	2.07%	
<b>Maximum:</b>			0.70%			0.43%			0.78%			0.72%



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- Under the Do Nothing Alternative, odour effects will remain at their current level and will then decrease when the landfill is closed. Currently, 10 of twenty-four receptor locations monitored experienced over 6 OU, up to 0.7% of the time. Of these, six could experience it between 0.5% and 0.78% of the time. The remainder of the receptors will experience odour less than 0.5% of the time.
- Under Alternative 2, 17 residences may experience more than 6 OU up to 0.43% of the time, similar to existing conditions.
- Under Alternative 3, thirteen residences may experience more than 6 OU up to 0.78% of the time. Of these, two could experience it between 0.5% and 0.78% of the time. The remainder of the receptors will experience odour less than 0.5% of the time. This is a slight increase over existing conditions.
- Alternative 3A is similar to Alternative 3 because all of the odour sources are in the same location; therefore, it was not modeled. It can be assumed that Alternative 3A will have the same effect as Alternative 3.
- Under Alternative Method 5, fifteen residences may experience more than 6 OU up to 0.72% of the time. Of these, three could experience it between 0.5% and 0.72% of the time. The remainder of the receptors will experience odour less than 0.5% of the time. This is a slight increase over existing conditions.

The differences between the Alternatives are minor and relate to the footprint of the landfill for each Alternative. Alternatives with a larger footprint have a greater surface area over which odour can be emitted. The Do Nothing Alternative has the smallest footprint and will be closed in the near future, therefore odour effects are expected to be minimal. Alternatives 2 and 5, with larger footprints will have greater odour effects. Alternatives 3 and 3A, with moderately sized footprints will have moderate odour effects.

### **Additional Mitigation**

No specific mitigation is required, beyond standard operating procedures, described in Table 7-2. However, at the request of MECP, odour will be re-modelled during detailed design. A commitment to update the modelling is included in Table 11-1, Summary of EA Commitments.

### **Net Effects**

Net effects are expected to be minimal for all Alternatives. Do Nothing is preferred as the landfill will close in the near future and odour will be significantly reduced. Differences between the remaining Alternatives are minor. However, Alternatives 3 and 3A are predicted to be slightly preferred over other Alternatives as thirteen receptors may experience minor odour effects over seventeen receptors in Alternative 2 and fifteen receptors in Alternative 5.

Effects are summarized in Table 7-6.

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**Table 7-6: Potential Effects due to Odour**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment <sup>55</sup>	Alternative 5: Vertical Expansion plus a New Footprint
<b>Indicator 1: Number of Receptors Potentially Impacted by Odour</b>	10 receptors may experience odour over 6 OU. This impact is expected to be reduced when the landfill closes.	17 receptors may experience odour over 6 OU.	13 receptors may experience odour over 6 OU.	13 receptors may experience odour over 6 OU.	15 receptors may experience odour over 6 OU.
<b>Indicator 2: Frequency of odour impacts</b>	Each of the 10 receptors will experience odour less than 0.7% of the time. Of these, 4 will be less than 0.5%. This impact is expected to be reduced when the landfill closes.	Each of the 8 receptors will experience odour less than 0.5% of the time.	11 of the receptors will experience odour less than 0.5% of the time.  2 of the receptors will experience odour less than 0.8% of the time.	11 of the receptors will experience odour less than 0.5% of the time.  2 of the receptors will experience odour less than 0.8% of the time.	12 of the receptors will experience odour less than 0.5% of the time.  3 of the receptors will experience odour less than 0.8% of the time.
<b>Additional Mitigation</b>	No additional mitigation is required, beyond standard operating procedures, described in Table 7-2.	Odour will be re-modelled during detailed design. Any additional mitigation, monitoring and contingency measures identified as a result of re-modelling will be implemented.			

<sup>55</sup> Effects were not modelled for this Alternative but can be assumed to be similar to Alternative 3 as all odour sources are in the same location.

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Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment <sup>55</sup>	Alternative 5: Vertical Expansion plus a New Footprint
<p><b>Net Effects</b></p> <p>M= Magnitude D= Duration F= Frequency R= Reversibility</p>	<p>Net improvement when landfill closes.</p> <p><b>M:</b> Minor – Effect is expected to be low and in-line with existing conditions.</p> <p><b>F:</b> Infrequent – Odour effects are expected very infrequently.</p> <p><b>D:</b> Short-Term – Odour effects will be experienced only in the short-term and will be reduced when the landfill closes in September 2022.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>	<p>Moderate net effects anticipated.</p> <p><b>M:</b> Moderate – Effect is expected to be low and only slightly higher than existing conditions. A slightly larger number of receptors will be affected over all other Alternatives.</p> <p><b>F:</b> Infrequent – Odour effects are expected very infrequently.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>	<p>Minor net effects anticipated.</p> <p><b>M:</b> Minor – Effect is expected to be low and only slightly higher than existing conditions.</p> <p><b>F:</b> Infrequent – Odour effects are expected infrequently but potentially more often than other Alternatives at two receptors.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>	<p>Minor net effects anticipated.</p> <p><b>M:</b> Minor – Effect is expected to be low and only slightly higher than existing conditions.</p> <p><b>F:</b> Infrequent – Odour effects are expected infrequently but potentially more often than other Alternatives at two receptors.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>	<p>Minor-Moderate net effects.</p> <p><b>M:</b> Minor-Moderate – Effect is expected to be low and only slightly higher than existing conditions. More receptors will be affected than Alternatives 3 and 3A but fewer than Alternative 2.</p> <p><b>F:</b> Infrequent – Odour effects are expected only infrequently.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>
<p><b>Evaluation</b></p>	<p><b>Most Preferred</b></p>	<p><b>4<sup>th</sup> Most Preferred</b></p>	<p><b>2<sup>nd</sup> Most Preferred</b></p>	<p><b>2<sup>nd</sup> Most Preferred</b></p>	<p><b>3<sup>rd</sup> Most Preferred</b></p>

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### 7.4.3 Noise

#### Current Conditions and Indicators of Effect

Under current conditions, residences along Water St. S. (called receptors 56 in noise modeling) experience some noise from the on-going operations at the landfill. Modeling demonstrates that the closest residents experience up to 51 dBA as a result of the existing landfill operations. The maximum noise from the traffic on Water St. S. is 60 dBA.

All Alternatives are expected to generate some noise during the construction, operational and closure phases of the landfill expansion, with the exception of the Do Nothing Alternative which does not include a construction phase. The Do Nothing Alternative does include a short operational period until the end of the current ECA and a final closure phase.

During the construction phase of Alternatives 2, 3, 3A and 5, noise will be generated from construction activities in combination with the continued landfilling that will occur in existing portions of the landfill.

During the operational phase of the landfill expansion for all Alternatives, current standard operating procedures are not expected to change. No changes are expected in the size of the open landfill face, the number of waste collection trucks visiting the site each day and the number and type of equipment operating at the site to deposit and cover the waste. Nonetheless, there may be minor differences in the noise levels experienced at receptors, depending on the expanded landfill design and its location relative to the receptors on Water St. S.

All Alternatives will have a closure period. Noise during closure of the landfill is expected to be similar to that experienced during construction except that all operations will have ceased. It is expected that the noise generated due to closure-related activities will be similar for all Alternatives. Because closure is required, and will generate similar noise levels, regardless of the Alternative selected, noise generated during the closure period has not been used as an indicator (i.e., such an indicator would not reveal any distinction between any of the Alternatives)

In summary, to assess any potential changes in noise levels experienced by residents of Water St. S. as a result of the landfill expansion, each Alternative was reviewed to identify effects associated with:

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<sup>56</sup> A receptor is a modelled point on a residential property near the house. Because of spacing, some houses are indicated by more than 1 receptor.

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- Indicator 1: Noise levels at receptors as a result of construction<sup>57</sup>;
- Indicator 2: Number of receptors experiencing noise above provincial limit during landfill operations; and,
- Indicator 3: Number of receptors experiencing a change in noise level relative to current conditions during landfill operations.

## Effects

An assessment of noise effects was completed in the in the Noise Impact Assessment provided in Volume III, Appendix B for all Alternatives except Alternative 3A which is detailed in Appendix D. A summary is provided in Table 7-7 and in the following discussion.

### ***Indicator 1: Noise levels at receptors as a result of construction:***

With the Do Nothing Alternative, there will be no construction-related noise. However, there will be noise associated with operations until the site's closure in September 2022, at which time there will be some noise associated with closure activities.

Construction is likely to be the noisiest period. Construction noise is not regulated and therefore was only estimated for the purposes of this study. It was assumed that construction activities would likely include one or more of each of the following equipment: excavator, wheel tractor scraper, bulldozer, construction truck, and a compactor, along with vehicles arriving for on-site delivery of materials. Construction noise was predicted to be 67 dBA at the nearest receptor<sup>58</sup>. This is well below the typical value used in construction noise control plans of 80 dBA. This noise level is greater than the maximum predicted noise level from existing landfill operations (50 dBA) or the maximum noise from the traffic (50 to 60 dBA). However, as the construction will be confined to relatively short periods (likely two to three months at a time) compared to years of landfill operations, the disruption due to construction is considered minor. Construction noise is expected to be similar for all Alternatives as construction is likely to take approximately the same amount of time and use the same type of equipment.

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<sup>57</sup> Noise will be generated from construction activities in combination with the continued landfilling that will occur in existing portions of the landfill. Values derived for this indicator include the combined noise of construction and operations.

<sup>58</sup> This value includes consideration for existing noise from ongoing landfill operations.

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***Indicator 2: Number of receptors experiencing noise above provincial limit during landfill operations:***

For the Do Nothing Alternative and Alternative 3, all receptors are expected to experience no more than 50 dBA during landfill operations. Alternative 3A was not modelled but is assumed to be similar to Alternative 3 as its height and distance from receptors is similar. For Alternatives 3 and 5, receptors will experience no more than 51 dBA. The difference between 50 and 51 dBA is indistinguishable to the human ear. The provincially set limit for noise for ongoing activities, such as landfill operations, is 55 dBA. Therefore, for all Alternatives, the amount of noise generated and experienced by sensitive receptors is below the provincial limit.

***Indicator 3: Number of receptors experiencing a change in noise level relative to current conditions during landfill operations:***

With the Do Nothing Alternative, none of the receptors will experience any change in noise level over existing conditions. However, the remaining operational period is short, coming to an end when the current ECA expires in September 2022. Therefore, noise related to landfill operations will only be experienced by nearby residents for a short period of time.

With Alternatives 2, 3, 3A and 5, the noise experienced at some receptors will decrease while at other receptors it may increase. The differences in sound level<sup>59</sup> are summarized as follows:

Alternative 2:

- One receptor will experience a very significant reduction (-11 dBA) in noise level.
- One receptor will experience a significant reduction (-10 dBA) in noise level.
- One receptor will experience a significant increase (+5 dBA) in noise level.
- One receptor will experience a significant increase (+7 dBA) in noise level.

Alternative 3:

- One receptor will experience a significant reduction (-10 dBA) in noise level.
- One receptor will experience a significant reduction (-9 dBA) in noise level.

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<sup>59</sup> Differences in sound level are described in accordance with the MOEE/GO Transit Noise and Vibration Protocol (December 1994), as follows:

0-2.99 dB= Insignificant  
3.0-4.99 dB= Noticeable  
5.0-9.99 dB= Significant  
10+ dB= Very Significant

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- One receptor will experience a significant increase (+6 dBA) in noise levels.
- One receptor will experience a noticeable increase (+4 dBA) in noise levels.
- Two receptors will experience a noticeable increase (+3 dBA) in noise level.

Alternative 3A:

- Assumed to be the same as Alternative 3.

Alternative 5:

- One receptor will experience a very significant reduction (-11 dBA) in noise level.
- One receptor will experience a significant (-9 dBA) reduction in noise level.
- Two receptors will experience a significant increase (both +6 dBA) in noise level.
- One receptor will experience a significant increase (+7 dBA) in noise level.
- Three receptors will experience a noticeable increase (all +3 dBA) in noise level.

The various increases or decreases in noise level associated with Alternatives 2, 3, 3A and 5 are similar and within the same general range, meaning there are no significant differences between these Alternatives. The differences in noise levels primarily relate to the height of each Alternative and the location of the working face relative to the closest receptors. The maximum noise impact at any receptor for all Alternatives is 51 dBA which is noticeably below the provincial limit.

### **Additional Mitigation**

No specific mitigation is required, beyond standard operating procedures, described in Table 7-2.

### **Net Effects**

The net effects of all Alternatives are expected to be within provincial limits. The Do Nothing Alternative is slightly preferred as there will be no construction noise and noise from landfill operations will cease in the short term. All other Alternatives are considered to have equal minor net effects, meeting all provincial limits, as summarized in Table 7-7.

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**Table 7-7: Potential Effects to Noise**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment <sup>60</sup>	Alternative 5: Vertical Expansion plus a New Footprint
<b>Indicator 1: Noise levels at receptors as a result of construction/ closure activities</b>	There will be no construction noise. There will be some noise associated with closure activities expected to occur in the near future.	Construction and closure-related noise will be higher than current operational noise but within levels typically expected for construction.	Construction and closure-related noise will be higher than current operational noise but within typical expected levels for construction.	Construction and closure-related noise will be higher than current operational noise but within typical expected levels for construction.	Construction and closure-related noise will be higher than current operational noise but within typical expected levels for construction.
<b>Indicator 2: Number of receptors experiencing noise above provincial limit during landfill operations</b>	0 residences will experience sound levels above the provincial limit of 55 dBA during the operational phase of the landfill.  Maximum noise impact at any receptor is 50 dBA which is significantly below the provincial limit.	0 residences will experience sound levels above the provincial limit of 55 dBA during the operational phase of the landfill.  Maximum noise impact at any receptor is 51 dBA which is noticeably below the provincial limit.	0 residences will experience sound levels above the provincial limit of 55 dBA during the operational phase of the landfill.  Maximum noise impact at any receptor is 50 dBA which is significantly below the provincial limit.	0 residences will experience sound levels above the provincial limit of 55 dBA during the operational phase of the landfill.  Maximum noise impact at any receptor is 50 dBA which is significantly below the provincial limit.	0 residences will experience sound levels above the provincial limit of 55 dBA during the operational phase of the landfill.  Maximum noise impact at any receptor is 51 dBA which is noticeably below the provincial limit.
<b>Indicator 3: Number of receptors experiencing a change in noise level during landfill operations</b>	No change in noise levels will be experienced at any receptor.	Two receptors will experience a Significant (-10 dBA) or Very Significant (-11 dBA) reduction in noise levels.  Two receptors will experience a Significant (+5 and +7 dBA) increase in noise levels over existing conditions.  Regardless of these changes, the maximum noise impact at any receptor is 51 dBA which is noticeably below the provincial limit.	Two receptors will experience a Significant (-10 and -9 dBA) reduction in noise levels.  Three receptors will experience a Noticeable (+3, +3 and +4 dBA) increase in noise levels.  One receptor will experience a Significant (+6 dBA) increase in noise levels over existing conditions.  Regardless of these changes, the maximum noise impact at any receptor is 51 dBA which is	Two receptors will experience a Significant (-10 and -9 dBA) reduction in noise levels.  Three receptors will experience a Noticeable (+3, +3 and +4 dBA) increase in noise levels.  One receptor will experience a Significant (+6 dBA) increase in noise levels over existing conditions.  Regardless of these changes, the maximum noise impact at any receptor is 51 dBA which	Two receptors will experience a Significant (-9 dBA) or Very Significant (-11 dBA) reduction in noise levels.  Three receptors will experience a Noticeable (both +3 dBA) increase in noise levels.  Two receptors will experience a Significant (both +6 dBA) increase in noise levels over existing conditions.  Regardless of these changes, the maximum noise impact at

<sup>60</sup> Not modelled but assumed to be the same as Alternative 3 as its height and distance from receptors is similar.



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Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment <sup>60</sup>	Alternative 5: Vertical Expansion plus a New Footprint
			noticeably below the provincial limit.	is noticeably below the provincial limit.	any receptor is 51 dBA which is noticeably below the provincial limit.
<b>Additional Mitigation</b>	No additional mitigation is required.				
<b>Net Effects</b>  M= Magnitude D= Duration F= Frequency  R= Reversibility	No net effects anticipated	Minor net effects anticipated:  <b>M:</b> Minor. All noise is within provincial guidelines at all receptors. However, small increases or decreases may be experienced at a small number of receptors.  <b>F:</b> Noise will be ongoing during operational hours.  <b>D:</b> Noise is expected through the construction, operation and closure phases of the landfill.  <b>R:</b> Noise effects are reversible but only after landfill closure.	Minor net effects anticipated:  <b>M:</b> Minor. All noise is within provincial guidelines at all receptors. However, small increases or decreases may be experienced at a small number of receptors.  <b>F:</b> Noise will be ongoing during operational hours.  <b>D:</b> Noise is expected through the construction, operation and closure phases of the landfill.  <b>R:</b> Noise effects are reversible but only after landfill closure.	Minor net effects anticipated:  <b>M:</b> Minor. All noise is within provincial guidelines at all receptors. However, small increases or decreases may be experienced at a small number of receptors.  <b>F:</b> Noise will be ongoing during operational hours.  <b>D:</b> Noise is expected through the construction, operation and closure phases of the landfill.  <b>R:</b> Noise effects are reversible but only after landfill closure.	Minor net effects anticipated:  <b>M:</b> Minor. All noise is within provincial guidelines at all receptors. However, small increases or decreases may be experienced at a small number of receptors.  <b>F:</b> Noise will be ongoing during operational hours.  <b>D:</b> Noise is expected through the construction, operation and closure phases of the landfill.  <b>R:</b> Noise effects are reversible but only after landfill closure.
<b>Evaluation</b>	<b>Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>

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## 7.5 Impacts to Hydrogeology

### Current Conditions and Indicators of Effect

Under baseline conditions, the effects to groundwater from existing operations are minimal. There is little indication of groundwater effects at the site. This is due to the combination of the low permeable till and the LCS. The LCS collects leachate at the bottom of the landfill and directs it into the Town's sanitary sewer system and then further to the wastewater treatment plant (WWTP). Leachate levels in the LCS manholes are checked twice yearly. The levels are consistently low indicating that the leachate is being effectively drained and there is no leachate mounding (i.e., leachate collecting and building up into the waste pile).

Each of the expansion Alternatives includes a new or expanded LCS. As with any LCS, there is some potential for the system to fail or to be breached, allowing leachate to be transmitted through the till to the bedrock aquifer, causing groundwater contamination beyond the site. The risk of contamination varies depending on soil characteristics below the landfill, the landfill design and characteristics, including the quantity and chemical concentration (i.e., strength) of the leachate generated. Landfill height and footprint are also risk factors. There is also some potential for the landfill to alter shallow groundwater flow direction.

To assess any potential effects on hydrogeology because of the landfill expansion, each Alternative was reviewed to determine if it would result in any changes to groundwater quality or flow using the following indicators:

- Indicator 1: Risk of increasing leachate generation and strength
- Indicator 2: Risk of impacting groundwater quality
- Indicator 3: Risk of altering groundwater flow

### Effects

An analysis of effects was completed in the Hydrogeology Study provided in Vol III, Appendix C for all Alternatives except Alternative 3A the analysis for which is detail in Appendix D. A summary is provided in Table 7-8 and in the following discussion:

#### ***Indicator 1: Risk of increasing leachate generation and strength:***

Leachate is generated as precipitation falls on the landfill and flows through the waste. Landfills with a greater footprint tend to generate more leachate as there is more interaction between water and waste over a larger area. Based on that:

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- With the Do Nothing Alternative, landfilling will continue under current conditions and no additional quantity of leachate will be generated beyond existing amounts. Leachate generation will be reduced over time once landfilling ceases.
- Alternative 2, with the largest footprint (150,000 m<sup>2</sup>), is likely to generate more leachate than under current conditions and the most leachate of all the Alternatives.
- Alternative 5, with the second largest footprint (141,000 m<sup>2</sup>), is likely to generate less leachate than Alternative 2 but more than other Alternatives.
- Alternatives 3 and 3A, with moderately sized footprints (116,000 m<sup>2</sup> and 117,000 m<sup>2</sup> respectively), are likely to generate less leachate than Alternatives 2 and 5 but more than Doing Nothing.

Placing new waste over existing waste could change the strength of the leachate. Under the Do Nothing Alternative, landfilling will continue under existing conditions and no change to leachate strength is expected. Over time, once the landfill is closed, leachate strength will decrease.

Under the remaining Alternatives, the following changes may occur:

- Alternative 2: New waste will not be placed above the existing landfill. Therefore, interactions with other contaminants or existing waste are not expected and leachate strength is expected to be similar to current conditions.
- Alternative 3: New waste will be placed above the existing landfill which has the potential to increase the proportion of contaminants within the leachate (i.e., strengthen its contaminant concentration).
- Alternative 3A: New waste will be placed above the existing landfill which has the potential to increase the proportion of contaminants within the leachate (i.e., strengthen its contaminant concentration).
- Alternative 5: New waste will be placed above the existing landfill which has the potential to increase the proportion of contaminants within the leachate (i.e., strengthen its contaminant make-up). In a very unlikely circumstance, leachate from the CKD pile, could push its way up and breach the LCS from below and mix with the landfill leachate. This could theoretically, change the leachate chemistry in the LCS. It is unclear whether the WWTP could effectively treat this altered leachate.

***Indicator 2: Risk of impacting groundwater quality:***

In addition to the risks associated with the leachate characteristics, there are aspects of a landfill design that can increase the risk of a breach in the LCS. A breach of the LCS could occur in two ways. First, a seep could be created in the side slope of the waste pile, allowing leachate to escape to the surface and flow across the landfill surface to be collected by the landfill's stormwater management system, bypassing proper treatment

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controls. Second, leachate could be forced downward and break through the landfill's liner, moving directly into groundwater below.

Both types of situations are unlikely and can be identified quickly through regular landfill monitoring. However, there are several aspects of the landfill's design which make either type of breach slightly more likely to occur, resulting in an increased risk of contaminating groundwater.

Increasing the height of the waste pile can increase the height of the leachate mounding within the waste. Mounding occurs when leachate builds up inside the waste pile rather than draining through the LCS. The current LCS was put in place to control leachate mounding in the existing phases. If the height of the waste above it is increased, it may result in increased leachate generation which could overload the system and create mounding. Mounding can, in turn, cause breakouts on the side slopes or downward pressure and movement of leachate through the liner.

There are seams of varying sand and silt composition (also known as inter-till meltwater deposits) across the landfill site. These deposits are more permeable than the clay till which is present across the site and which acts, in tandem with the LCS, to prevent leachate from moving through the groundwater to areas beyond the site. A meltwater deposit is present below the existing landfill. If the liner is breached, leachate could make its way into this deposit where it can flow more freely through the subsurface. A back-up system was installed below the existing landfill footprint to address this concern. A collector pipe takes groundwater present in the meltwater deposits to the landfill's stormwater management system. The groundwater collected in this secondary system is monitored twice annually at Manhole B. Routine water level monitoring demonstrates that the meltwater deposit near the landfill is often dry, indicating that the LCS is working. Increasing the amount of leachate in the system could change that.

Meltwater deposits are also present in other locations across the landfill site, including areas between the existing watercourse and CKD pile. The various components of the landfill expansion have the potential to intersect one of these deposits and create a conduit for leachate movement into the groundwater. This includes the relocated/realigned watercourse. In Alternatives 2 and 3 the watercourse will be relocated close to the CKD pile. If the new watercourse intersects a meltwater deposit seam, it could create a conduit for CKD-derived leachate<sup>61</sup> to enter the groundwater system.

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<sup>61</sup> Recent groundwater monitoring indicates that some leachate created by the CKD pile is migrating through the groundwater but no effects to the watercourse have been observed.

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In Alternative 5, waste will be placed above a portion of the CKD pile. Placing waste above the CKD pile could compress the CKD and cause a CKD leachate seep.

Given the various risks noted in the preceding discussion, the following effects to groundwater quality could occur:

- Do Nothing: No change from current conditions are expected. Currently the landfill does not exhibit significant concerns associated with mounding and rare seepage issues are addressed immediately. The meltwater till below the landfill includes a back-up solution to address seepage through the liner, should it occur.
- Alternative 2: No new waste will be placed above the existing landfill. Therefore, there is no additional risk for seepage in the existing landfill footprint. The expansion footprint has potential to come into contact with a meltwater deposit creating a pathway for any escaped leachate to enter and contaminate surrounding groundwater. The relocated watercourse also has potential to create a conduit for CKD leachate to enter a meltwater deposit and move through the groundwater.
- Alternative 3: New waste will be placed above the existing landfill area, increasing the overall height of the waste. This increases the risk for seepage from the side slopes or downward leachate movement into the meltwater deposit under the existing landfill area. The expansion footprint has potential to intersect a meltwater deposit creating a pathway for any escaped leachate to enter and contaminate surrounding groundwater. The relocated watercourse also has potential to create a conduit for CKD leachate to enter a meltwater deposit and move through the groundwater.
- Alternative 3A: New waste will be placed above the existing landfill area, increasing the overall height of the waste. The overall height will be higher than in Alternative 3. This increases the risk for seepage from the side slopes or downward leachate movement into the sand seam under the existing landfill area. The expansion footprint has potential to intersect a meltwater deposit creating a pathway for any escaped leachate to enter and contaminate surrounding groundwater. The realigned watercourse will bring a small section of the watercourse closer to the CKD pile but not as close as Alternatives 2 and 3. Alternative 3A is therefore less likely to create a conduit for CKD leachate to enter a meltwater deposit and move through the groundwater.
- Alternative 5: New waste will be placed above the existing landfill area, increasing the overall height of the waste. This Alternative is the highest above the existing waste. This results in the greatest risk for seepage from the side slopes or downward leachate movement into the sand seam under the existing landfill area. A portion of the new landfill footprint will be placed above the CKD pile, creating risk of CKD seepage.

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***Indicator 3: Risk of altering groundwater flow:***

Currently, shallow groundwater (i.e., groundwater that is closest to the surface) flows towards the watercourse from both north and south of the watercourse. The direction of this flow could be altered by changing the topography and drainage around the watercourse. The following changes to groundwater flow could occur:

- Do Nothing: There will be no changes to the watercourse or the topography surrounding the watercourse and therefore no change to shallow groundwater flow.
- Alternative 2: The watercourse will be relocated north of the CKD pile and the existing watercourse will be filled with landfilled facilities and waste, thus changing to overall topography in the area. Shallow groundwater now flowing towards the watercourse may shift direction as the watercourse area is filled. Its altered flow path is unknown.
- Alternative 3: The watercourse will be relocated north of the CKD pile and the existing watercourse will be filled with landfilled facilities and waste, thus changing to overall topography in the area. Shallow groundwater now flowing towards the watercourse may shift direction as the watercourse area is filled. Its altered flow path is unknown.
- Alternative 3A: A short section of the watercourse will be realigned and the topography around the watercourse will change slightly. Changes to shallow groundwater flow will be imperceptible.
- Alternative 5: There will be no changes to the watercourse or the topography immediately surrounding the watercourse and therefore no change to shallow groundwater flow.

**Additional Mitigation**

**No additional mitigation is required for the Do Nothing Alternative.**

With Alternatives 2 and 3, the watercourse will be relocated close to the CKD pile. Measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD and direct it to the LCS, similar to the pipe in the meltwater deposit below the existing landfill.

With Alternative 3A, interactions between CKD and the watercourse are not expected. However, if, as a result of the Annual Monitoring Program, effects from CKD are observed in the realigned watercourse, measures to separate the watercourse from the CKD will be required. This may include a barrier and interceptor pipe to trap CKD and direct it to the LCS, similar to the pipe in the meltwater deposit below the existing landfill.

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With Alternative 5, the design of the LCS will need to be more robust than with other Alternatives to limit the potential for mixing of landfill and CKD leachates and avoid creating CKD leachate seeps.

For all Alternatives, an Annual Monitoring Program and Adaptive Management Plan will be used to identify if unanticipated effects are occurring and to proposed measures to resolve the unanticipated effects. Adaptive Management Plans and their triggers are described in Section 11.3.

### **Net Effects**

After mitigation, the risks to groundwater associated with each Alternative are relatively low.

Do Nothing is preferred as the landfill will soon close and leachate generation will slowly decrease. No new risk of contact between the landfill and groundwater will be created.

The risk associated with Alternative 3A is relatively minor and can be reduced significantly with appropriate design elements.

Alternatives 2 and 3 have a slightly increased risk over Alternative 3A due to the relocation of the watercourse which may create a conduit for CKD leachate to enter a meltwater deposit and move through the groundwater. Although this risk can be lowered with an appropriate design, some risk still persists.

Alternative 5 will have the greatest risk of groundwater contamination due to its large footprint and potential groundwater interactions between the landfill and CKD waste, should a breach of the LCS occur.

Effects are summarized in Table 7-8.

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Table 7-8: Groundwater Effects Assessment

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Indicator 1: Risk of Increasing Leachate Generation and Strength</b>	<ul style="list-style-type: none"> <li>Existing landfill to close at end of current ECA.</li> <li>No new leachate generation after closure and no interaction with CKD pile. Therefore, leachate strength will decrease over time.</li> </ul>	<ul style="list-style-type: none"> <li>Largest footprint (150,000 m<sup>2</sup>) will generate the most leachate.</li> <li>No interaction with existing landfill. Therefore, there is no risk of increased leachate strength over existing conditions.</li> </ul>	<ul style="list-style-type: none"> <li>Moderate increase in footprint (116,000 m<sup>2</sup>) will generate moderate increase in leachate.</li> <li>New waste to be placed above existing landfill, potentially increasing leachate strength.</li> </ul>	<ul style="list-style-type: none"> <li>Moderate increase in footprint (117,000 m<sup>2</sup>) will generate moderate increase in leachate.</li> <li>New waste to be placed above existing landfill, potentially increasing leachate strength.</li> </ul>	<ul style="list-style-type: none"> <li>Second largest footprint (141,000 m<sup>2</sup>) will generate significant increase in leachate.</li> <li>New waste to be placed above existing landfill, potentially increasing leachate strength.</li> </ul>
<b>Indicator 2: Risk of impacting groundwater</b>	<ul style="list-style-type: none"> <li>No change to risk of leachate mounding and related seepage.</li> </ul>	<ul style="list-style-type: none"> <li>Similar height to existing therefore no change to risk of leachate mounding or leachate seeps.</li> <li>Largest footprint therefore broadest area for leachate to interact with groundwater.</li> <li>Moderate risk of landfill and CKD leachate migrating through a meltwater deposit.</li> </ul>	<ul style="list-style-type: none"> <li>Increased height over existing landfill area and therefore increased risk of leachate mounding or leachate seeps.</li> <li>Moderate increase in footprint, therefore, moderately sized area for leachate to interact with groundwater.</li> <li>Moderate risk of landfill and CKD leachate migrating through a meltwater deposit.</li> </ul>	<ul style="list-style-type: none"> <li>Increased height over existing landfill area and therefore increased risk of leachate mounding or leachate seeps.</li> <li>Moderate increase in footprint, therefore, moderately sized area for leachate to interact with groundwater.</li> <li>Moderate risk of landfill leachate migrating through a meltwater deposit.</li> </ul>	<ul style="list-style-type: none"> <li>Increased height over existing landfill area and therefore increased risk of leachate mounding or leachate seeps.</li> <li>Second largest footprint, therefore second largest area for leachate to interact with groundwater.</li> <li>High risk of landfill and CKD leachate migrating through a meltwater deposit.</li> </ul>
<b>Indicator 3: Risk of altering groundwater flow</b>	<ul style="list-style-type: none"> <li>No potential for shift of groundwater flow</li> </ul>	<ul style="list-style-type: none"> <li>High potential for shift of shallow groundwater flow due to the relocation of the watercourse. Groundwater now flowing towards the watercourse may shift direction as the watercourse area is filled.</li> </ul>	<ul style="list-style-type: none"> <li>High potential for shift of shallow groundwater flow due to the relocation of the watercourse. Groundwater now flowing towards the watercourse may shift direction as the watercourse area is filled.</li> </ul>	<ul style="list-style-type: none"> <li>Low potential for shift of groundwater flow due to the watercourse re-alignment. The small alignment may cause a minor shift in groundwater flow.</li> </ul>	<ul style="list-style-type: none"> <li>Very low potential for shift of groundwater flow. The watercourse location will not be altered. Minor changes in topography may result in minor changes to groundwater flow but they are likely to be imperceptible.</li> </ul>
<b>Additional Mitigation</b>	<ul style="list-style-type: none"> <li><b>None required.</b></li> </ul>	<ul style="list-style-type: none"> <li>Measures to separate the relocated watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> </ul>	<ul style="list-style-type: none"> <li>Measures to separate the relocated watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> </ul>	<ul style="list-style-type: none"> <li><b>As a contingency only, if effects from CKD are observed in the realigned watercourse through the Annual Monitoring Program, measures to separate the watercourse from the CKD will be required.</b> This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> </ul>	<ul style="list-style-type: none"> <li>The LCS in expansion area must be specifically designed to prevent CKD pile leachate from mixing with the waste leachate.</li> </ul>



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Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<p><b>Net Effects</b></p> <p>M= Magnitude D= Duration F= Frequency R= Reversibility</p>	<p>No net effects beyond existing conditions.</p>	<p>Moderate net effects anticipated:</p> <p><b>M:</b> Moderately higher risk of effects due to large footprint and potential interactions with CKD pile. <b>D:</b> Groundwater effects would persist for the contaminating lifespan of the site controlled by the continued operation of the LCS. <b>F:</b> Leachate generation and risk of groundwater impact is continuous over life of landfill. <b>R:</b> Effects to groundwater are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>Moderate net effects anticipated:</p> <p><b>M:</b> Moderately higher risk of effects due to large footprint and potential interactions with CKD pile. <b>D:</b> Groundwater effects would persist for the contaminating lifespan of the site controlled by the continued operation of the LCS. <b>F:</b> Leachate generation and risk of groundwater impact is continuous over life of landfill. <b>R:</b> Effects to groundwater are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>Minor net effects anticipated:</p> <p><b>M:</b> Minor increase in risk of effects after mitigation. <b>D:</b> Groundwater effects would persist for the contaminating lifespan of the site controlled by the continued operation of the LCS. <b>F:</b> Leachate generation and risk of groundwater impact is continuous over life of landfill. <b>R:</b> Effects to groundwater are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>Significant net effects anticipated:</p> <p><b>M:</b> Highest risk of effects due to interactions with CKD pile and relatively large waste footprint and quantity of leachate generated. <b>D:</b> Groundwater effects would persist for the contaminating lifespan of the site controlled by the continued operation of the LCS. <b>F:</b> Leachate generation and risk of groundwater impact is continuous over life of landfill. <b>R:</b> Effects to groundwater are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>
<p><b>Evaluation</b></p>	<p><b>Most Preferred</b></p>	<p><b>3<sup>rd</sup> Most Preferred</b></p>	<p><b>3<sup>rd</sup> Most Preferred</b></p>	<p><b>2<sup>nd</sup> Most Preferred</b></p>	<p><b>Least Preferred</b></p>

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## **7.6 Impacts to Surface Water**

### **7.6.1 Surface Water Quality**

#### **Current Conditions and Indicators of Effect**

Under baseline conditions, the effects to surface water quality from existing operations are minimal. Surface water quality sampling results have shown that water quality is somewhat impaired, but conditions are similar both upstream and downstream of the landfill, indicating that the landfill is not a significant contributor to surface water quality. Sampling stations both upstream and downstream of the waste have recorded concentrations above the Provincial Water Quality Objectives, particularly for iron and phosphorus.

There is some potential that the expanded landfill could affect surface water quality and cause impairment beyond existing conditions.

To assess potential changes to surface water quality resulting from landfill expansion, each Alternative was reviewed to identify the risk of contamination using the following indicators:

- Indicator 1: Risk of contaminated runoff reaching surface water
- Indicator 2: Risk of leachate from seeps reaching surface water
- Indicator 3: Risk of leachate from CKD pile reaching surface water

Indigenous communities identified a concern with potential water quality effects in the Thames River and therefore a fourth indicator was added, as follows:

- Indicator 4: Risk of on-site surface water quality impacting Thames River

#### **Effects**

The potential sources of, and risks to, surface water contamination were addressed in the Hydrogeology Study provided in Vol III, Appendix C for all Alternatives except Alternative 3A the analysis for which is detail in Appendix D. A summary of potential effects is provided in Table 7-9 and in the following discussion:

#### ***Indicator 1: Risk of contaminated runoff reaching surface water:***

With all Alternatives, the landfill will be designed to direct precipitation or runoff that comes into contact with waste into the LCS. Should any contaminated runoff escape the LCS, it will be directed to the site's stormwater management facilities and ponds, which are regularly tested for contamination.

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With Alternatives 2, 3 and 3A, SWM basins A and B will be removed and relocated. There is some risk that contaminated water from the SWM basins could be released into the watercourse and subsequently to the Thames River downstream. These SWM basins will be maintained in their current configuration for Alternative 5 and the Do Nothing Alternative. As such, no effects are expected for those Alternatives.

***Indicator 2: Risk of leachate from seeps reaching surface water:***

Increasing the height of the waste pile can increase the height of the leachate mounding within the waste. Mounding occurs when leachate builds up inside the waste pile rather than draining downward through the LCS. The current LCS was installed to control the mounding in the existing phases. If the height of the waste above the LCS is increased, it may increase leachate generation which could overload the system and create mounding. Mounding can, in turn, cause breakouts on the side slopes or downward pressure and movement of leachate through the liner.

**Therefore, the following effects to surface water quality could occur:**

- Do Nothing: No change from current conditions is expected. The landfill does not currently exhibit significant concerns associated with mounding and rare seepage issues are addressed immediately.
- Alternative 2: No new waste will be placed above the existing landfill. Therefore, there is no additional risk for seepage in the existing landfill footprint. The height of the new footprint is lower than the existing landfill and therefore there is no additional risk.
- Alternative 3: New waste will be placed above the existing landfill area, increasing the overall height of the waste. This increases the risk for seepage from the side slopes. Seepage could then flow into the stormwater management system and into the watercourse.
- Alternative 3A: New waste will be placed above the existing landfill area, increasing the overall height of the waste. The overall height will be higher than in Alternative 3. This increases the risk for seepage from the side slopes. Seepage could then flow into the stormwater management system and into the watercourse.
- Alternative 5: New waste will be placed above the existing landfill area, increasing the overall height of the waste. This Alternative has the highest overall height above the existing waste. This results in the greatest risk for seepage from the side slopes. Seepage could then flow into the stormwater management system and into the watercourse.

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***Indicator 3: Risk of leachate from CKD pile reaching surface water:***

With the Do Nothing Alternative, there will be no interaction between the landfill, watercourse and CKD pile and therefore no increased risks from CKD beyond existing conditions.

Discontinuous meltwater deposits are present across the landfill site, including areas between the existing watercourse and CKD pile. The various components of the landfill expansion have the potential to intersect one of these deposits and create a conduit for leachate movement. This includes the relocated/realigned watercourse. In Alternatives 2 and 3 the watercourse will be relocated close to the CKD pile. The new watercourse will intersect a meltwater deposit seam. This could create a conduit for CKD-derived leachate to enter the relocated watercourse. In addition, cutting a new channel near the toe of the CKD pile could induce contaminated shallow groundwater flow from the CKD pile into the channel.

There is a lower risk of CKD effects reaching the watercourse with Alternative 3A as the watercourse realignment is minor and farther from the CKD pile compared to Alternatives 2 and 3.

With Alternative 5, there will be no change to the watercourse. However, a portion of the new landfill footprint will be placed above the CKD pile. The increased pressure on the CKD from the landfill above could create seeps, expelling CKD-related leachate to the surface where it will drain to surface water features.

***Indicator 4: Risk of on-site surface water quality impacting Thames River:***

Surface water from the site eventually drains to the Thames River. Existing landfill operations show no measurable impact on water quality exiting the landfill property, and therefore no impact on water quality in the Thames River. With the Do Nothing Alternative, the risk to the Thames River will not be changed over existing conditions.

The risk of contamination is higher in Alternatives 2, 3 and 5 than in Alternative 3A. This is because there is a higher chance of interactions with the CKD material as a result of the watercourse relocation in Alternatives 2 and 3 and a higher chance of CKD material interactions as a result of the landfilling above the CKD pile in Alternative 5.

With Alternative 3A, the watercourse realignment is minor and farther from the CKD pile compared to Alternatives 2 and 3.

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### **Additional Mitigation**

No additional mitigation is required for the Do Nothing Alternative.

With Alternatives 2 and 3, the watercourse will be relocated close to the CKD pile. Measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD and direct it to the LCS, similar to the pipe in the meltwater deposit below the existing landfill.

With Alternative 3A, interactions between CKD and the watercourse are not expected. However, if annual monitoring indicates there are effects to water quality from CKD, measures to separate the watercourse from the CKD will be required. This may include a barrier and interceptor pipe to trap CKD and direct it to the LCS, similar to the pipe in the meltwater deposit below the existing landfill.

With Alternative 5, the design of the LCS will need to be more robust than with other Alternatives to limit the potential for mixing of landfill and CKD leachates and avoid creating CKD leachate seeps.

For all Alternatives, an Annual Monitoring Program and Adaptive Management Plan will be used to identify if unanticipated effects are occurring and to proposed measures to resolve the unanticipated effects. Adaptive Management Plans and their triggers are described in Section 11.3.

### **Net Effects**

With the Do Nothing Alternative, no net effects are expected. Alternative 3A represents a low to moderate risk of effects to surface water and Alternatives 2, 3 and 5 are high risk due to their potential interactions with the CKD pile. All other potential effects can be adequately mitigated.

A high-level summary of the potential net effects to surface water quality is provided in Table 7-9.

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**Table 7-9: Potential Effects to Surface Water Quality**

<b>Evaluation Factors</b>	<b>Do Nothing Alternative</b>	<b>Alternative 2: Horizontal Expansion of the Existing Landfill</b>	<b>Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location</b>	<b>Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment</b>	<b>Alternative 5: Vertical Expansion plus a New Footprint</b>
<b>Indicator 1: Risk of contaminated runoff reaching surface water</b>	Negligible risk of runoff or precipitation contacting waste once landfill is closed.	Low risk of runoff or precipitation contacting waste and exiting footprint to reach surface water.  SWM basins A and B will be removed and relocated. During removal there is a risk that contaminated water from the SWM basins could be released into the watercourse and subsequently to the Thames River downstream.	Low risk of runoff or precipitation contacting waste and exiting footprint to reach surface water.  SWM basins A and B will be removed and relocated. During removal there is a risk that contaminated water from the SWM basins could be released into the watercourse and subsequently to the Thames River downstream.	Low risk of runoff or precipitation contacting waste and exiting footprint to reach surface water.  SWM basins A and B will be removed and relocated. During removal there is a risk that contaminated water from the SWM basins could be released into the watercourse and subsequently to the Thames River downstream.	Low risk of runoff or precipitation contacting waste and exiting footprint to reach surface water.
<b>Indicator 2: Risk of leachate from seeps reaching surface water</b>	No increase in risk of leachate seeps reaching surface water beyond existing conditions.	Similar height to existing therefore no change to risk of leachate mounding and seeping out of waste slopes to surface and then to surface water features.	Increased height over existing landfill area and therefore increased risk of leachate mounding and seeping out of waste slopes to surface and then to surface water features.	Increased height over existing landfill area and therefore increased risk of leachate mounding and seeping out of waste slopes to surface and then to surface water features.	Increased height over existing landfill area and therefore increased risk of leachate mounding and seeping out of waste slopes to surface and then to surface water features.
<b>Indicator 3: Risk of leachate from CKD pile reaching surface water</b>	No increased risk of CKD pile effects on surface water beyond existing conditions.	High risk due to proximity of relocated watercourse to CKD pile and uncertainties associated with potential to disturb CKD waste, creating potential pathways for leachate migration.	High risk due to proximity of relocated watercourse to CKD pile and uncertainties associated with potential to disturb CKD waste, creating potential pathways for leachate migration.	Low to moderate risk due to proximity of relatively short watercourse realignment closer to CKD pile and low potential to disturb CKD waste.	High risk for surface water effects due to high risk of creating CKD leachate seeps when placing waste above CKD pile.
<b>Indicator 4: Risk of on-site surface water quality impacting Thames River</b>	Existing landfill operations show no measurable impact on water quality exiting the landfill property, and therefore no impact on water quality in the Thames River	Surface water from the site eventually drains to the Thames River. This option represents a high risk to on-site surface water quality relative to the other Alternatives and therefore a high risk to the Thames River downstream.	Surface water from the site eventually drains to the Thames River. This option represents a high risk to on-site surface water quality relative to the other Alternatives and therefore a high risk to the Thames River downstream.	Surface water from the site eventually drains to the Thames River. This option represents a low to moderate risk to on-site surface water quality relative to the other Alternatives and therefore a low to moderate risk to the Thames River downstream.	Surface water from the site eventually drains to the Thames River. This option represents a high risk to on-site surface water quality relative to the other Alternatives and therefore a high risk to the Thames River downstream.

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Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Additional Mitigation</b>	None required.	Measures to separate the relocated watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.	Measures to separate the relocated watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.	As a contingency only, if effects from CKD are observed in the realigned watercourse through the Annual Monitoring Program, measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.	The LCS in expansion area must be specifically designed to prevent CKD pile leachate from mixing with the waste leachate.
<b>Net Effects</b>  M= Magnitude D= Duration F= Frequency R= Reversibility	No net effects anticipated.	High risk of net effect anticipated:  <b>M:</b> High risk of effect due to potential watercourse/CKD pile interactions. <b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan. <b>F:</b> Risk of surface water impact is continuous over life of landfill. <b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.	High risk of net effect anticipated:  <b>M:</b> High risk of effect due to potential watercourse/CKD pile interactions. <b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan. <b>F:</b> Risk of surface water impact is continuous over life of landfill. <b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.	Low risk of net effect anticipated:  <b>M:</b> Low risk of effect with mitigation and monitoring <b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan. <b>F:</b> Risk of surface water impact is continuous over life of landfill. <b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.	High risk of net effect anticipated:  <b>M:</b> High risk of effect due to waste height and potential seepage from CKD pile. <b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan. <b>F:</b> Risk of surface water impact is continuous over life of landfill. <b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.
<b>Evaluation</b>	<b>Most Preferred</b>	<b>Least Preferred</b>	<b>Least Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>Least Preferred</b>

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## 7.6.2 Surface Water Quantity

### Current Conditions and Indicators of Effect

Surface water flow in the On-site Study Area and Study Area Vicinity has been altered significantly by past and on-going industrial activities. The watercourse through the existing landfill and the upstream SMC lands has been straightened and shifted as a result of past SMC operations. The current flow path appears to have been in place for several decades.

Upstream of the landfill, several stretches of the watercourse and its upstream tributaries are managed municipal drains, known as the Sgariglia Drain and Richardson Drain. Through the landfill property, the watercourse is channelized and straightened. Through the landfill, there are steep berms along the northern bank of the watercourse. Near Water St. S., portions of the channel bed contain rip-rap and angular stone. After alterations over many decades as a result of quarrying and landfilling activities, the watercourse does not exhibit a natural geometry. Water flows into the landfill from the east via a 600mm diameter culvert and exists at the northwestern landfill boundary via a 1500mm diameter culvert.

There are various stormwater management features on the landfill property, including permitter ditches and stormwater ponds, to control run-off. Surface water from the landfill is ultimately discharged to the watercourse, which outlets to the Thames River.

This section will consider potential changes to surface water flow pathways and quantities by examining each Alternative based on the following indicator:

- Indicator 1: Changes to surface water flow.

### Effects

Changes to surface water flow are summarized in Table 7-10 and in the discussion below.

#### ***Indicator 1: Changes to surface water flow:***

With the Do Nothing Alternative there will be no change to surface water flow relative to current conditions.

With Alternatives 2 and 3, the watercourse (approximately 790m) will be relocated north of the CKD pile. It will be designed to mimic the existing watercourse and make use of natural channel design principles, where appropriate. Its entrance and exit to and from the landfill site will remain the same.



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With Alternative 3A, a short section (approximately 230m) of the watercourse will be realigned to the northeast. The realignment will occur in the central portion of the landfill property. Similar to Alternatives 2 and 3, the watercourse will mimic the existing watercourse and make use of natural channel design principles. It will continue to enter and exit the landfill via the existing culverts at the east and west property lines, respectfully.

No changes to the watercourse are proposed with Alternative 5.

Each of the Alternatives may result in minor changes to topography which could increase runoff and decrease infiltration but these effects will be addressed through stormwater management controls included in each landfill design to ensure that flows leaving the landfill property are similar to existing conditions. This may involve changes to the sizing and location of stormwater management ponds and ditches. In all cases (apart from the Do Nothing Alternative) there will be alterations to how, and where, water flows through the landfill property. However, there will be no changes to up- or downstream water quantity or flow. Therefore, there will be no overall effects to surface water quantity as a result of any of the Alternatives.

### **Additional Mitigation**

For the Do Nothing Alternative and Alternative 5, no additional mitigation is required beyond the stormwater management controls that will be part of the design of all landfill Alternatives.

The realigned/relocated watercourse will be monitored for two years post-construction. Any additional mitigation identified as a result of the monitoring will be implemented. This may include additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.

### **Net Effects**

There will be no net effects to surface water quantity as a result of any of the Alternatives. A summary of the potential effects to surface water quantity is provided in Table 7-10.

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**Table 7-10 Potential Effects to Surface Water Quantity**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Indicator 1: Changes to Surface Water Flow</b>	<ul style="list-style-type: none"> <li>Existing surface water flow patterns in the On-Site Study Area and beyond are not expected to change.</li> </ul>	<ul style="list-style-type: none"> <li>Watercourse relocation will alter the flow path for ~790 m through the landfill property.</li> <li>Quantity and location of surface water flow entering and leaving the On-Site Study Area will not change.</li> </ul>	<ul style="list-style-type: none"> <li>Watercourse relocation will alter the flow path for ~790 m through the landfill property.</li> <li>Quantity and location of surface water flow entering and leaving the On-Site Study Area will not change.</li> </ul>	<ul style="list-style-type: none"> <li>Watercourse relocation will alter the flow path for ~230 m through the landfill property.</li> <li>Quantity and location of surface water flow entering and leaving the On-Site Study Area will not change.</li> </ul>	<ul style="list-style-type: none"> <li>Quantity and location of surface water flow entering and leaving the On-Site Study Area will not change.</li> </ul>
<b>Additional Mitigation</b>	<ul style="list-style-type: none"> <li>No additional mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>Post-construction monitoring of the relocated watercourse will be carried out. Any additional mitigation identified at that stage will be implemented, such as:                             <ul style="list-style-type: none"> <li>additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Post-construction monitoring of the relocated watercourse will be carried out. Any additional mitigation identified at that stage will be implemented, such as:                             <ul style="list-style-type: none"> <li>additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Post-construction monitoring of the realigned watercourse will be carried out. Any additional mitigation identified at that stage will be implemented, such as:                             <ul style="list-style-type: none"> <li>additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>No additional mitigation required.</li> </ul>
<b>Net Effects</b>  M= Magnitude D= Duration F= Frequency R= Reversibility	<ul style="list-style-type: none"> <li>No net effects anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>No net effects anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>No net effects anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>No net effects anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>No net effects anticipated.</li> </ul>
<b>Evaluation</b>	<b>Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>

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## 7.7 Impacts to Ecology

### 7.7.1 Terrestrial Ecology

#### Current Conditions and Indicators of Effect

Under current conditions the On-Site Study Area is highly disturbed and provides relatively few ecological features and functions. The Natural Heritage Assessment provided in Vol III, Appendix D, indicated that the following features are present, or may be present, in the On-Site Study Area:

- Significant Wildlife Habitats, including:
  - Habitat for Monarch Butterfly, a species designated as Special Concern;
  - Habitat for terrestrial crayfish;
  - Turtle Wintering Area
- Habitat of Endangered and Threatened Species:
  - Eastern Meadowlark, a species designated as Threatened.

Bank Swallows, a Threatened species, unsuccessfully attempted to nest in a soil stockpile in the composting area of the landfill in 2015. There is some potential that nesting could be attempted again in the future.

In addition, a variety of wildlife was observed, including turtles, amphibians, snakes and birds. These were observed in small numbers and many of these are likely to have been migrants, passing through the area. Some may be opportunists, making use of available features even where those features do not provide ideal habitat conditions or habitat that meets the characteristics for “provincial significance”.

Additional natural features are present in the Study Area Vicinity, primarily along the Thames River. Potential effects to these features are assessed under Aquatic Ecology, in Section 7.7.2.

To assess any potential changes to terrestrial ecology as a result of the landfill expansion, each Alternative was reviewed against the mapping of ecological features to determine if any effects to these features would result using the following indicators:

- Indicator 1: Impacts to Significant Wildlife Habitats;
- Indicator 2: Impacts to Habitat of Endangered and Threatened Species; and,
- Indicator 3: Impacts to Other Wildlife.

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## Effects

An assessment of ecological effects was completed in the Natural Heritage Assessment provided in Volume III, Appendix D for all Alternatives except Alternative 3A the analysis for which is detailed in Volume I Appendix D. Findings are summarized in Table 7-11 and the following discussion:

### ***Indicator 1: Impacts to Significant Wildlife Habitats:***

With respect to Significant Wildlife Habitats, the following effects are expected:

Monarch Butterfly:

- Existing habitat is marginal with a small number of milkweed and other wildflowers present in the existing grassy areas. Landfilling and capping of cells occurs sequentially such that when one area is filled, it is capped and restored when a new area is opened. Restored areas will be planted with native grasses and wildflowers. The actual open face of the landfill is not expected to increase in size as the landfill expands. Therefore, there will be no net loss of Monarch habitat over existing conditions for Alternatives 2, 3, 3A and 5 over the 40-year operating lifespan of the landfill. With respect to the Do Nothing Alternative, closure will occur sooner and operational portions of the site will be restored earlier than in the other Alternatives.

Habitat for Terrestrial Crayfish:

This habitat is located to the northwest of the CKD pile. Potential effects are as follows:

- The habitat will not be affected by the Do Nothing Alternative.
- The relocation of the watercourse in Alternatives 2 and 3 will occur adjacent to the habitat; however, with appropriate erosion and sediment control and fencing of the work area, effects can be avoided.
- The habitat will not be affected by Alternative 3A.
- The habitat will be entirely lost as a result of Alternative 5.

Turtle Overwintering Area:

A potential turtle overwintering area was identified in the plunge pool of the upstream culvert along the property boundary between the landfill and SMC. This pool will be altered as a result of the watercourse relocation that would occur in Alternatives 2 and 3. No changes to this habitat will occur as a result of Doing Nothing or Alternative 3A and 5.

### ***Indicator 2: Impacts to Habitats of Endangered and Threatened Species:***

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No effects are expected with the Do Nothing Alternative.

The grassland areas north of the current landfill operations provide habitat for Eastern Meadowlark. This coincides with the habitat for the Monarch butterfly. With Alternatives 2, 3, 3A and 5, this habitat will be removed in sections overtime and replaced when landfill cells are closed. Under the Endangered Species Act, this temporary removal of habitat is considered to have an impact and will require adherence to the provisions of the Act. For Alternatives 2, 3, 3A and 5, compensation for the loss of Eastern Meadowlark will be provided through creation of habitat elsewhere in accordance with the ESA Regulations, or through a species conservation charge paid to the Species at Risk Conservation Trust (effective April 29, 2022). With this compensation, there will be no overall effects.

With all Alternatives, there is potential that landfill construction and operations could create temporary habitats which may attract Bank Swallows which will subsequently be disturbed or destroyed. This will primarily be avoided by following the Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario (MNR, 2017), as noted in Table 7-2. Thus, the potential to create habitat conditions and subsequently destroy nests is very low.

***Indicator 3: Impacts to Other Wildlife:***

There will be no effects to wildlife beyond existing conditions as a result of the Do Nothing Alternative as there will be no further clearing of habitats and no construction associated with this option.

Birds may nest in the trees and other vegetation present in the On-site Study Area. Nests can be affected during construction if this vegetation is removed or disturbed. Similarly, bats may also be affected if they are actively roosting in trees when vegetation is cleared. The timing windows for tree clearing and contingencies listed in Table 7-2 will minimize effects. Some minor and highly disturbed areas used by opportunistic species will be lost.

A small number of amphibians and turtles were observed in the watercourse and SWM basins A and B. Potential effects to these species are as follows:

- In Alternatives 2, 3 and 3A, the watercourse (or a portion of it) will be relocated or realigned and SWM basins A and B will be removed and constructed elsewhere on the site. During removal of features, some individuals may be harmed or disturbed.
- In Alternative 5, the watercourse and SWM basins A and B will be maintained in their current form and position without disturbance. As such, there will be no effects to wildlife using these features.

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Beyond the watercourse and SWM basis, snakes and other wildlife may be encountered elsewhere on the landfill property during construction. Individuals may inadvertently wander into work zones; however, standard erosion and sediment control (ESC) fencing around work zones (a standard measure to be incorporated into the design, as listed in Table 7-2) will likely prevent this.

### **Additional Mitigation**

No additional mitigation is required for the Do Nothing Alternative.

The terrestrial crayfish and turtle overwintering area that is expected to be lost as a result of Alternative 5 and Alternatives 2 and 3, respectively, cannot be easily restored or re-created elsewhere. Therefore, no additional mitigation is available to further minimize effects. A wildlife salvage of the plunge pool should occur prior to its removal.

For Alternatives 2, 3 and 3A, a wildlife salvage should occur prior to or during dewatering of the watercourse and SWM basins A and B as part of their relocation. A Wildlife Collectors Permit from the NDMNRF should be obtained prior to this work. Wildlife found within these features should be allowed to move from the habitat on their own or collected and transported to another suitable location in the vicinity.

For Alternatives 2, 3, 3A and 5, the site should be surveyed for Bank Swallow habitat prior to any site alteration and [SAROntario@ontario.ca](mailto:SAROntario@ontario.ca) should be contacted for guidance under the *Endangered Species Act 2007* if Bank Swallow is found to be nesting on site. Should Bank Swallow be found nesting on-site, a 50 m buffer will be applied around the active nest.

### **Net Effects**

No net effects are expected with the Do Nothing Alternative and Alternative 3A.

There will be a net loss of terrestrial crayfish habitat as a result of Alternative 5. There will also be a net loss of turtle overwintering habitat as a result of Alternatives 2 and 3. The magnitude, frequency, duration and reversibility of these effects is summarized in Table 7-11.

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**Table 7-11: Potential Effects to Terrestrial Ecology**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Indicator 1: Impact to Significant Wildlife Habitat</b>	No effects to Monarch butterfly habitat, terrestrial crayfish habitat or turtle overwintering areas.	No effects to Monarch butterfly habitat, terrestrial crayfish habitat.  Potential turtle overwintering area at the plunge pool at the upstream culvert will be removed as a result of the watercourse location.	No effects to Monarch butterfly habitat, terrestrial crayfish habitat.  Potential turtle overwintering area at the plunge pool at the upstream culvert will be removed as a result of the watercourse location.	No effects to Monarch butterfly habitat, terrestrial crayfish habitat or turtle overwintering areas.	No effects to Monarch butterfly habitat or turtle overwintering habitat.  Terrestrial crayfish habitat will be removed.
<b>Indicator 2: Impact to Habitat of Endangered and Threatened Species</b>	No effects to habitats for Eastern Meadowlark.  There is limited potential that landfill operations could create temporary habitats which may attract Bank Swallows which will subsequently be disturbed or destroyed.	With compensation, as required under the Endangered Species Act, there will be no overall impact to Eastern Meadowlark habitat.  There is limited potential that landfill construction and operations could create temporary habitats which may attract Bank Swallows which will subsequently be disturbed or destroyed.	With compensation, as required under the Endangered Species Act, there will be no overall impact to Eastern Meadowlark habitat.  There is limited potential that landfill construction and operations could create temporary habitats which may attract Bank Swallows which will subsequently be disturbed or destroyed.	With compensation, as required under the Endangered Species Act, there will be no overall impact to Eastern Meadowlark habitat.  There is limited potential that landfill construction and operations could create temporary habitats which may attract Bank Swallows which will subsequently be disturbed or destroyed.	With compensation, as required under the Endangered Species Act, there will be no overall impact to Eastern Meadowlark habitat.  There is limited potential that landfill construction and operations could create temporary habitats which may attract Bank Swallows which will subsequently be disturbed or destroyed.
<b>Indicator 3: Impact to Other Wildlife</b>	No effects to other wildlife.	Any amphibians and turtles present in the watercourse or SWM basins may be affected during construction and relocation of these features.	Any amphibians and turtles present in the watercourse or SWM basins may be affected during construction and relocation of these features.	Any amphibians and turtles present in the watercourse or SWM basins may be affected during construction and relocation of these features.	No effects to amphibians and turtles as the watercourse and stormwater basins will not be altered.
<b>Additional Mitigation</b>	No additional mitigation required.	Conduct a wildlife salvage of the plunge pool at the upstream culvert prior to its removal and watercourse and SWM basins during dewatering.  Survey site for Bank Swallow habitat prior to any site alteration	Conduct a wildlife salvage of the plunge pool at the upstream culvert prior to its removal and watercourse and SWM basins during dewatering.  Survey site for Bank Swallow habitat prior to any site alteration	Conduct a wildlife salvage of the watercourse and SWM basins during dewatering.  Survey site for Bank Swallow habitat prior to any site alteration and contact <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a> for	Survey site for Bank Swallow habitat prior to any site alteration and contact <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a> for guidance under the <i>Endangered Species Act 2007</i> if Bank Swallow is found to be nesting on site. Should Bank Swallow be found nesting on-

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Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
		and contact <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a> for guidance under the <i>Endangered Species Act 2007</i> if Bank Swallow is found to be nesting on site. Should Bank Swallow be found nesting on-site, apply a 50 m buffer around the active nest.	and contact <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a> for guidance under the <i>Endangered Species Act 2007</i> if Bank Swallow is found to be nesting on site. Should Bank Swallow be found nesting on-site, apply a 50 m buffer around the active nest.	guidance under the <i>Endangered Species Act 2007</i> if Bank Swallow is found to be nesting on site. Should Bank Swallow be found nesting on-site, apply a 50 m buffer around the active nest.	site, apply a 50 m buffer around the active nest.
<p><b>Net Effects</b></p> <p>M= Magnitude D= Duration F= Frequency R= Reversibility</p>	No net effects anticipated.	<p>Moderate net effects anticipated.</p> <p><b>M:</b> Moderate. Loss of plunge pool that may provide turtle overwintering habitat.</p> <p><b>F:</b> One-time loss of habitat.</p> <p><b>D:</b> Habitat loss is a long-term effect.</p> <p><b>R:</b> Removal of overwintering habitat is irreversible.</p>	<p>Moderate net effects anticipated.</p> <p><b>M:</b> Moderate. Loss of plunge pool that may provide turtle overwintering habitat.</p> <p><b>F:</b> One-time loss of habitat.</p> <p><b>D:</b> Habitat loss is a long-term effect.</p> <p><b>R:</b> Removal of overwintering habitat is irreversible.</p>	No net effects anticipated.	<p>Moderate net effects anticipated.</p> <p><b>M:</b> Moderate. Loss of a small number of terrestrial crayfish burrows.</p> <p><b>F:</b> One-time loss of crayfish habitat.</p> <p><b>D:</b> Crayfish habitat loss is a long-term effect.</p> <p><b>R:</b> Removal of terrestrial crayfish habitat is irreversible.</p>
<b>Evaluation</b>	<b>Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>



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### 7.7.2 Aquatic Ecology

#### Current Conditions and Indicators of Effect

The watercourse flowing through the landfill site does not provide direct fish habitat. The perched culvert at Water St. S. prevents fish from traveling from the Thames River upstream into the watercourse. No fish were collected during fish surveys. Nonetheless, the watercourse does contribute to downstream fish habitat. The watercourse outlets to the Thames River, which provides a variety of habitats for fish and other aquatic species. The Thames River is known to provide habitat for the Spiny Softshell Turtle, a species at risk identified as Threatened in Ontario.

To assess any potential changes to aquatic ecology as a result of the landfill expansion, each Alternative was reviewed to determine if it would result in any effects using the following indicators:

- Indicator 1: Effects to Aquatic Habitat
- Indicator 2: Effects to Aquatic Species at Risk

#### Effects

An assessment of aquatic ecological effects was completed in the in the Natural Heritage Assessment provided in Volume III, Appendix D for all Alternatives except Alternative 3A the analysis for which is detail in Volume I Appendix D. Findings are summarized in Table 7-12 and the following discussion:

#### ***Indicator 1: Effects to Aquatic Habitat:***

Aquatic habitat could be affected by impairment to water quality and due to physical changes to the watercourse.

#### Impairment to Water Quality:

Effects to water quality were discussed in Section 7.6.1. In summary, there will be no changes in water quality from the Do Nothing Alternative. Alternatives 2, 3 and 5 have a high risk of water quality impairment due to the potential for interactions with the CKD pile. Alternative 3A is less risky as the watercourse realignment is farther from the CKD pile than in Alternatives 2 and 3 and doesn't have the risk of CKD seepage associated with Alternative 5.

#### Physical Changes to the Watercourse:

Aquatic habitat will be affected where the watercourse will be relocated or realigned to allow for the expansion. The relocation of the watercourse (~790m) is required for

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Alternatives 2 and 3. Relocating the watercourse has the potential to harm aquatic species and disturb existing habitat during the relocation process. However, the relocation also offers potential to improve habitat conditions as the new channel can be designed to incorporate habitat features, including appropriate width/depth, substrate, and riparian vegetation, in accordance with natural channel design principles. All new and remaining riparian areas will be naturalized with trees, shrub and grass plantings to improve riparian habitat and stabilize stream banks. In summary, there is potential for negative effects during relocation; however, in the long-term there may be improvements to aquatic habitat once the new channel is stable and functioning.

Alternative 3A requires the realignment of ~230 m of the watercourse which has the potential to disrupt aquatic species and habitat conditions, albeit over a shorter span than in Alternatives 2 and 3. The realigned channel will mimic the existing channel and incorporate natural channel design principles, where appropriate. Additional improvements to the remaining sections of the watercourse through the landfill property will be made, including the addition of channel substrates, installation of habitat features and bank stabilization, where required. All new and remaining riparian areas will be naturalized with trees, shrub and grass plantings. As such, there is potential for negative effects during the realignment; however, in the long-term there may be improvements to aquatic habitat once the new channel and habitat features are stable and functioning.

Alternative 5 has no requirements for in-water work and the watercourse will remain in its current position. Riparian areas will be naturalized with trees, shrub and grass plantings. Therefore, the effects associated with relocating or realigning the watercourse will be avoided with this Alternative but the potential to improve habitat is relatively limited.

With the Do Nothing Alternative, there will be no change from existing conditions and no impact or benefit to aquatic habitat.

***Indicator 2: Impacts to Aquatic Species at Risk***

There are no aquatic species at risk in the watercourse on the landfill property. However, there are aquatic species at risk in the Thames River. The Thames River will not be directly affected; however, contaminants or sediments from the watercourse could move downstream and impact the Thames River and the aquatics species inhabiting it.

**Additional Mitigation**

No additional mitigation is required for the Do Nothing Alternative.

With Alternative 5:

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- The design of the LCS will need to be more robust than with other Alternatives to limit the potential for mixing of landfill and CKD leachates and avoid creating CKD leachate seeps.

With Alternatives 2 and 3:

- The relocated watercourse will be designed using natural channel design principles which will result in improved habitat conditions.
- All new riparian areas will be naturalized with tree, shrub and grass plantings to improve riparian habitat and stabilize stream banks.
- No in-water work will occur during June and July.
- Any wildlife within affected portions of the existing channel will be salvaged and relocated.
- Post-construction monitoring of the relocated watercourse will be carried out. Any additional mitigation identified at that stage will be implemented, such as:
  - Additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.
- The watercourse will be relocated close to the CKD pile. Measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD and direct it to the LCS, similar to the pipe in the meltwater deposit below the existing landfill.

**With Alternative 3A:**

- The realigned watercourse will be designed using natural channel design principles which will result in improved habitat conditions.
- All new and remaining riparian areas will be naturalized with tree, shrub and grass plantings to improve riparian habitat and stabilize stream banks.
- No in-water work will occur during June and July.
- Any wildlife within affected portions of the existing channel will be salvaged and relocated.
- Post-construction monitoring of the realigned watercourse will be carried out. Any additional mitigation identified at that stage will be implemented, such as:
  - Additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.
- Interactions between CKD and the watercourse are not expected. However, if, as a result of the Annual Monitoring Program, effects from CKD are observed in the realigned watercourse, measures to separate the watercourse from the CKD will be

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required. This may include a barrier and interceptor pipe to trap CKD and direct it to the LCS, similar to the pipe in the meltwater deposit below the existing landfill.

For all Alternatives, an Annual Monitoring Program and Adaptive Management Plan will be part of the landfill's standard operating procedures, described in Table 7-2. Adaptive Management Plans and their triggers are described in Section 11.3.

### **Net Effects**

Effects resulting from the relocation or realignment of the watercourse are low if standard construction and erosion and sediment control measures are utilized in conjunction with the additional mitigation noted above.

The most significant net effects relate to the increased risk of water quality effects in the watercourse and downstream in the Thames River. These effects were previously summarized in Section 7.6.1. Based on that the Do Nothing Alternative is most preferred, followed by Alternative 3A. Alternatives 2, 3 and 5 have similar high risk to water quality and are equally least preferred.

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**Table 7-12: Potential Effects to Aquatic Ecology**

<b>Evaluation Factors</b>	<b>Do Nothing</b>	<b>Alternative 2: Horizontal Expansion of the Existing Landfill</b>	<b>Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location</b>	<b>Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment</b>	<b>Alternative 5: Vertical Expansion plus a New Footprint</b>
<b>Indicator 1: Impact to Aquatic Habitat</b>	No net effects anticipated beyond existing conditions.	High risk of water quality effects due to potential watercourse/CKD pile interactions.  Habitat will be physically altered during watercourse relocation.	High risk of water quality effects due to potential watercourse/CKD pile interactions.  Habitat will be physically altered during watercourse relocation.	Low-moderate risk of water quality effects due to potential watercourse/CKD pile interactions.  Habitat will be physically altered during watercourse realignment.	High risk of water quality effects due to potential CKD pile seepage.  There will be no physical alteration to fish habitat.
<b>Indicator 2: Impacts to Aquatic Species at Risk</b>	No net effects anticipated beyond existing conditions.	High risk of water quality effects due to potential watercourse/CKD pile interactions which could affect downstream habitats.	High risk of water quality effects due to potential watercourse/CKD pile interactions which could affect downstream habitats.	Low-moderate risk of water quality effects due to potential watercourse/CKD pile interactions which could affect downstream habitats.	High risk of water quality effects due to potential watercourse/CKD pile interactions which could affect downstream habitats.

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Evaluation Factors	Do Nothing	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Additional Mitigation</b>	None required.	<ul style="list-style-type: none"> <li>• The relocated watercourse will be designed using natural channel design principles which will result in improved habitat conditions.</li> <li>• All new riparian areas will be naturalized with tree, shrub and grass plantings to improve riparian habitat and stabilize stream banks.</li> <li>• No in-water work will occur during June and July.</li> <li>• Any wildlife within affected portions of the existing channel will be salvaged and relocated.</li> <li>• Post-construction monitoring of the relocated watercourse will be carried out. Any additional mitigation identified at that stage will be implemented, such as: <ul style="list-style-type: none"> <li>– Additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.</li> </ul> </li> <li>• Measures to separate the relocated watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> </ul>	<ul style="list-style-type: none"> <li>• The relocated watercourse will be designed using natural channel design principles which will result in improved habitat conditions.</li> <li>• All new riparian areas will be naturalized with tree, shrub and grass plantings to improve riparian habitat and stabilize stream banks.</li> <li>• No in-water work will occur during June and July.</li> <li>• Measures to separate the relocated watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> <li>• Any wildlife within affected portions of the existing channel will be salvaged and relocated.</li> <li>• Post-construction monitoring of the relocated watercourse will be carried out. Any additional mitigation identified at that stage will be implemented, such as: <ul style="list-style-type: none"> <li>– Additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.</li> </ul> </li> <li>• Measures to separate the relocated watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> </ul>	<ul style="list-style-type: none"> <li>• The realigned watercourse will be designed using natural channel design principles which will result in improved habitat conditions.</li> <li>• All new and remaining riparian areas will be naturalized with tree, shrub and grass plantings to improve riparian habitat and stabilize stream banks.</li> <li>• No in-water work will occur during June and July.</li> <li>• Any wildlife within affected portions of the existing channel will be salvaged and relocated.</li> <li>• Post-construction monitoring of the realigned watercourse will be carried out. Any additional mitigation identified at that stage will be implemented, such as: <ul style="list-style-type: none"> <li>– Additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.</li> </ul> </li> <li>• As a contingency only, if effects from CKD are observed in the realigned watercourse through the Annual Monitoring Program, measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> </ul>	<ul style="list-style-type: none"> <li>• The LCS in expansion area must be specifically designed to prevent CKD pile leachate from mixing with the waste leachate.</li> </ul>

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Evaluation Factors	Do Nothing	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<p><b>Net Effects</b> M = Magnitude D = Duration F = Frequency R = Reversibility</p>	<p>No net effects anticipated.</p>	<p>Minor net effects due to watercourse relocation. High risk of net effects due to water quality impairment.</p> <p><b>M:</b> Low risk of effect due to watercourse relocation with mitigation and monitoring/High risk of water quality effect due to potential watercourse/CKD pile interactions.</p> <p><b>D:</b> Habitat alterations will occur only once during watercourse relocation/Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.</p> <p><b>F:</b> Habitat alterations will occur only once during watercourse realignment/Risk of surface water impact is continuous over life of landfill.</p> <p><b>R:</b> Watercourse relocation is not reversible but will result in improved habitat/ Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>Minor net effects due to watercourse relocation. High risk of net effects due to water quality impairment.</p> <p><b>M:</b> Low risk of effect due to watercourse relocation with mitigation and monitoring/High risk of water quality effect due to potential watercourse/CKD pile interactions.</p> <p><b>D:</b> Habitat alterations will occur only once during watercourse relocation/Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.</p> <p><b>F:</b> Habitat alterations will occur only once during watercourse realignment/Risk of surface water impact is continuous over life of landfill.</p> <p><b>R:</b> Watercourse relocation is not reversible but will result in improved habitat/ Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>Minor net effects due to watercourse relocation. Low risk of net effects due to water quality impairment.</p> <p><b>M:</b> Low risk of effect due to watercourse realignment with mitigation and monitoring/Low risk of water quality effect due to distance between watercourse and CKD pile.</p> <p><b>D:</b> Habitat alterations will occur only once during watercourse realignment/Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.</p> <p><b>F:</b> Habitat alterations will occur only once during watercourse realignment/Risk of surface water impact is continuous over life of landfill.</p> <p><b>R:</b> Watercourse realignment is not reversible but will result in improved habitat/ Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>High risk of net effects due to water quality impairment.</p> <p><b>M:</b> High risk of effect due to waste height and potential seepage from CKD pile.</p> <p><b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.</p> <p><b>F:</b> Risk of surface water impact is continuous over life of landfill.</p> <p><b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>
<p><b>Evaluation</b></p>	<p><b>Most Preferred</b></p>	<p><b>Least Preferred</b></p>	<p><b>Least Preferred</b></p>	<p><b>2<sup>nd</sup> Most Preferred</b></p>	<p><b>Least Preferred</b></p>

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## **7.8 Impacts to Cultural Heritage Resources**

### **7.8.1 Built Heritage and Cultural Heritage Landscapes**

#### **Current Conditions and Indicators of Effect**

There are no Built Heritage Resources or Cultural Heritage Landscapes (CHLs) in the On-Site Study Area. There is one Built Heritage Resource present in the Study Area Vicinity. This is a residence located at 481 Water St. S., approximately 925m to the north of the landfill property. SMC is located between this residence and the landfill. Thus, the landfill is not the predominant view from the residence.

There are 11 CHLs located within the Study Area Vicinity. Of these, two are directly adjacent to the landfill. These include:

- The St. Marys Cement Plant Industrial Complex CHL, which is located directly to the east.
- The farmscape located at 1025 Water St. S., which is directly adjacent to the landfill to the west.

The remaining CHLs are located primarily to the west and south of the landfill. Under current conditions, there is a visual block of coniferous trees around the west and south sides of the landfill and around the property at 1025 Water St. S. As such, the landfill is not the predominant view from most of the CHLs. The landfill is visible from the St. Marys Cement Plant Industrial Complex CHL but this feature is itself an industrial site and highly disturbed landscape.

To assess any potential changes from current conditions as a result of the landfill expansion, each Alternative was reviewed relative to the following indicator:

- Indicator 1: Impacts to the Built Heritage Resources or Cultural Heritage Landscapes.

#### **Effects**

A preliminary analysis of effects was completed in the Cultural Heritage Resources Assessment (CHRA) provided in Vol III, Appendix E for all Alternatives except Alternative 3A the analysis for which is detail in Volume I Appendix D.



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***Indicator 1: Impacts to the Built Heritage Resources or Cultural Heritage Landscapes:***

Based on the preliminary analysis, none of the Alternatives will result in any direct effects to the heritage residence on Water St. S. due to its distance from the landfill expansion area.

There does not appear to be a visual connection between the property and any of the Alternatives that would indirectly affect the heritage residence. However, this will be confirmed in an updated CHRA to be prepared during the detailed design phase of the project.

Similarly, there will be no direct effects to any CHLs, according to the CHRA as the viewscape is not expected to change significantly with any of the Alternatives. The trees along the southern boundary of the landfill property will need to be removed for Alternative 3A. These trees will remain in place with all remaining Alternatives. The effect of this removal on the landscape is very minimal as these trees only provide a visual block from the agricultural field to the south. They are not integral to blocking the view from Water St. S. It is noted that overall, the trees are on the slope of the former quarry and therefore provide a relatively low and minimally effective visual blockage. Indirect effects to CHLs are not expected but will be confirmed in an updated CHRA to be prepared during the detailed design phase of the project.

**Additional Mitigation**

No mitigation or further study is required under the Do Nothing option. For all other Alternatives, during detailed design, a CHRA will be updated to further assess effects and identify additional mitigation measures with all cultural heritage resources. Mitigation will be developed as follows:

- Construction activities and staging should be suitably planned and undertaken to avoid effects to identified cultural heritage resources.
- Once the detailed design of the proposed work are available, the CHRA will be updated with a confirmation of effects of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines will be consulted for advice and further heritage assessment work should be undertaken as necessary.

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- Should future work require an expansion of the study area then a qualified heritage consultant will be contacted in order to confirm the effects of the proposed work on potential heritage resources.

### **Net Effects**

With the additional study and measures noted above, no net effects are anticipated for any of the Alternatives. This will be confirmed through the updated CHRA to be completed during detailed design.

A summary of the potential effects to the Cultural Heritage Resources is provided in Table 7-13.

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**Table 7-13: Potential Effects to the Built Heritage Resources and Cultural Heritage Landscapes**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<p><b>Indicator 1: Impacts to Built Heritage Resources or Cultural Heritage Landscapes</b></p>	<p>One BHR is located approximately 925m from the landfill site. 11 CHLs are located within 1km of the landfill site.</p> <p>No BHRs or CHLs are located within the On-site Study Area.</p> <p>No effects are expected beyond existing conditions.</p>	<p>One BHR is located approximately 925m from the landfill site. 11 CHLs are located within 1km of the landfill site.</p> <p>No BHRs or CHLs are located within the On-site Study Area.</p> <p>No effects are anticipated, given the distance between the resource and landfill and the existing landscape disturbance in between. Further study will be carried out during the detailed design phase to confirm.</p>	<p>One BHR is located approximately 925m from the landfill site. 11 CHLs are located within 1km of the landfill site.</p> <p>No BHRs or CHLs are located within the On-site Study Area.</p> <p>No effects are anticipated, given the distance between the resource and landfill and the existing landscape disturbance in between. Further study will be carried out during the detailed design phase to confirm.</p>	<p>One BHR is located approximately 925m from the landfill site. 11 CHLs are located within 1km of the landfill site.</p> <p>No BHRs or CHLs are located within the On-site Study Area.</p> <p>No effects are anticipated, given the distance between the resource and landfill and the existing landscape disturbance in between. Further study will be carried out during the detailed design phase to confirm.</p>	<p>One BHR is located approximately 925m from the landfill site. 11 CHLs are located within 1km of the landfill site.</p> <p>No BHRs or CHLs are located within the On-site Study Area.</p> <p>No effects are anticipated, given the distance between the resource and landfill and the existing landscape disturbance in between. Further study will be carried out during the detailed design phase to confirm.</p>
<p><b>Additional Mitigation</b></p>	<p>No additional mitigation is required.</p>	<ul style="list-style-type: none"> <li>• Construction activities and staging should be suitably planned and undertaken to avoid effects to identified cultural heritage resources.</li> <li>• Once a detailed design of the proposed work is available, the CHRA will be updated with a confirmation of effects of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.</li> <li>• Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the effects of the proposed work on potential heritage resources.</li> </ul>			
<p><b>Net Effects</b></p> <p>M= Magnitude D= Duration F= Frequency R= Reversibility</p>	<p>No net effects</p>	<p>No net effects anticipated</p>	<p>No net effects anticipated</p>	<p>No net effects anticipated</p>	<p>No net effects anticipated</p>
<p><b>Evaluation</b></p>	<p><b>Most Preferred</b></p>	<p><b>Most Preferred</b></p>	<p><b>Most Preferred</b></p>	<p><b>Most Preferred</b></p>	<p><b>Most Preferred</b></p>

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## 7.8.2 Archaeological Resources

### Current Conditions and Indicators of Effect

The landfill was opened in 1984 on a 16.2 ha parcel of land leased from SMC. Prior to its use as a landfill site, SMC mined the site for clays to use in their cement making process. The Town acquired the St. Marys Landfill property in 2009, which included additional lands for continued disposal operations and associated waste management activities and consists of a total site area of 37 ha.

Given this past disturbance, the On-Site Study Area offers no archaeological potential and no archaeological resources have previously been discovered on the property.

There are no previously registered archaeological sites located within the Study Area Vicinity but there is some potential that unknown sites exist.

To assess any potential changes from current conditions as a result of the landfill expansion, each Alternative was reviewed relative to the following indicator:

- Indicator 1: Impacts to the Archaeological Resources.

### Effects

A Stage 1 Archaeological Assessment was completed and is included in Volume III - Appendix F for all Alternatives except Alternative 3A which is assessed in Appendix D. A summary is provided in Table 7-14 and in the following discussion:

#### ***Indicator 1: impacts to the Archaeological Resources:***

The Stage 1 Archaeological Assessment concluded that the entire On-Site Study Area has been documented to not retain archaeological potential and that these lands do not require further archaeological assessment. There is a small portion of SMC land beyond the On-Site Study Area that is required for the watercourse relocation in Alternatives 2 and 3. This small area was not part of the Archaeological Assessment and would require further study. Previous disturbance in this area means that site is unlikely to retain archaeological potential. In the unlikely chance that archaeological resources were identified in this area, further study through the various stages of the archaeological assessment process would be carried out to clear the area. Therefore, none of the Alternatives will result in any impact.

Furthermore, there will be no disturbance to the ground in the Study Area Vicinity, thus there will no effect on any potential archaeological resources beyond the landfill property itself.

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### **Additional Mitigation**

No additional mitigation is required for the Do Nothing Alternative. Additional study is required for Alternatives 2 and 3 as the watercourse relocation extends beyond the current On-Site Study Area.

For Alternatives 3A and 5, should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to ground disturbing activities.

### **Net Effects**

No net effects to archaeological resources are anticipated with any of the Alternatives. A summary of the net effects to the archaeological resources is provided in Table 7-14.

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**Table 7-14: Potential Effects to Archaeological Resources**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Indicator 1:</b> <b>Impacts to archaeological resources.</b>	The On-Site Study Area offers no archaeological potential, given its past and current disturbances. No effects anticipated.	The On-Site Study Area offers no archaeological potential, given its past and current disturbances. No effects anticipated.	The On-Site Study Area offers no archaeological potential, given its past and current disturbances. No effects anticipated.	The On-Site Study Area offers no archaeological potential, given its past and current disturbances. No effects anticipated.	The On-Site Study Area offers no archaeological potential, given its past and current disturbances. No effects anticipated.
<b>Additional Mitigation</b>	No additional mitigation required.	Additional review required in area of watercourse relocation. Previous disturbance in this area means that site is unlikely to retain archaeological potential.	Additional review required in area of watercourse relocation. Previous disturbance in this area means that site is unlikely to retain archaeological potential.	Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to ground disturbing activities	Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to ground disturbing activities
<b>Net Effects</b>  M= Magnitude D= Duration F= Frequency R= Reversibility	No net effects anticipated	No net effects anticipated	No net effects anticipated	No net effects anticipated	No net effects anticipated
<b>Evaluation</b>	<b>Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>

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## **7.9 Impacts to Traffic**

### **Current Conditions and Indicators of Effect**

Under current conditions, there is one entrance to the landfill on the east side of Water St. S. A Traffic Impact Study, provided in Vol III, Appendix H, confirmed that there are no existing traffic concerns associated with the entrance or major access routes to the landfill.

To assess any potential changes from current conditions as a result of the landfill expansion, the following indicator was used:

- Indicator 1: Impacts to traffic on Water St. S.

### **Effects**

A Traffic Impact Study, provided in Vol III, Appendix H was completed and is included in Volume III, Appendix H for all Alternatives except Alternative 3A which is assessed in Appendix D. A summary is provided in Table 7-15 and in the following discussion:

#### ***Indicator 1: Impacts to traffic on Water St. S:***

None of the Alternatives is expected to increase the amount of waste generated or transported to the landfill, with the exception of small increases anticipated as the Town's population grows. All Alternatives will continue to be accessed through the existing entrance off Water St. S. The Traffic Impact Study (Volume III, Appendix H) determined that the intersection at Water St. S and the landfill entrance is sufficient to meet traffic demands through 2059 and beyond. No capacity improvements are needed to Water St. S. and no changes are required to the landfill entrance. Therefore, no effects on traffic are expected from any of the Alternatives.

### **Additional Mitigation**

No additional mitigation is required.

### **Net Effects**

No net effects are expected. A summary of the potential traffic effects is provided in Table 7-15.

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**Table 7-15: Potential Effects to Local Transportation**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Indicator 1:</b>  <b>Impacts to traffic on Water St. S.</b>	There are no current traffic concerns at the landfill entrance off Water St. S. No changes are expected with this Alternative. Therefore, no effects on traffic are expected.	The intersection at Water St. S. and the landfill entrance is sufficient to meet traffic demands through 2059 and beyond. No capacity improvements are needed to Water St. S. or the entrance intersection. Therefore, no effects on traffic are expected.	The intersection at Water St. S. and the landfill entrance is sufficient to meet traffic demands through 2059 and beyond. No capacity improvements are needed to Water St. S. or the entrance intersection. Therefore, no effects on traffic are expected.	The intersection at Water St. S. and the landfill entrance is sufficient to meet traffic demands through 2059 and beyond. No capacity improvements are needed to Water St. S. or the entrance intersection. Therefore, no effects on traffic are expected.	The intersection at Water St. S. and the landfill entrance is sufficient to meet traffic demands through 2059 and beyond. No capacity improvements are needed to Water St. S. or the entrance intersection. Therefore, no effects on traffic are expected.
<b>Additional Mitigation</b>	No additional mitigation required.				
<b>Net Effects</b>  M= Magnitude D= Duration F= Frequency R= Reversibility	No net effects anticipated	No net effects anticipated	No net effects anticipated	No net effects anticipated	No net effects anticipated
<b>Evaluation</b>	<b>Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>



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## **7.10 Impacts to Land Use**

### **7.10.1 Sensitive Land Use**

#### **Current Conditions and Indicators of Effect**

Aggregate extraction associated with SMC occurs to the north, northeast and west of the landfill. Lands to the immediate south and east fall outside of the Town's limits but are designated as Licensed Quarry Pit/Limestone Resource and Agricultural Lands with a small amount of Natural Resources/Environment adjacent to the Thames River. A small number of residences are located on the west side of Water St.S. and on the east side of Water St. S., immediately adjacent to the landfill.

Sensitive land uses are those which may experience negative effects as a result of incompatible adjacent land uses. The residential and agricultural land uses to the west of the landfill site and agricultural lands to the south are identified as sensitive land uses. The existing waste footprint is setback from Water St. S. by approximately 75m and from the landfill's southern property boundary by approximately 25m.

For this part of the evaluation, the following indicator was considered:

- Indicator 1: Presence of sensitive lands within the study areas.

#### **Effects**

A Socio-economic Impact Assessment was completed and is included in Volume III - Appendix G for all Alternatives except Alternative 3A which is assessed in Appendix D. The presence of sensitive land uses are described in that report. A summary is provided in Table 7-16 and in the following discussion:

#### ***Indicator 1: Presence of sensitive lands within the study areas:***

There are no sensitive land uses in the On-Site Study Area. The existing landfill and vacant, former extraction lands are the only uses currently present.

There are sixteen residences within 120 m of the landfill and an additional 28 residences within the 1 km Study Area Vicinity. There are farmlands directly to the south of the landfill.

With the Do Nothing Alternative, the landfill will be no closer to any of these sensitive land uses than it is today. When the landfill closes at the end of the current ECA, many of the effects to sensitive land uses will diminish; however, some land use restrictions will remain in place throughout the post-closure period.

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Alternative 2 does not include any landfilling above the existing waste footprint. The new footprint will be located farther from sensitive land uses than the current landfill. All new waste will be placed at least 100m from the landfill property boundaries.

Alternatives 3 and 5 include landfilling above the existing waste piles. The existing setbacks of 75m from Water St. S. and 25m from the southern property boundary will be maintained. The new waste footprint associated with these Alternatives will be at least 100m from all property boundaries.

Alternative 3A will also include landfilling above the existing waste footprint, maintain the existing setbacks in that area. The new footprint will be at least 100m from Water St. S.; however, that setback will be reduced to 30m along the southern property boundary. Alternative 3A includes a more compressed footprint relative to Alternative 3 to accommodate sufficient capacity with only minimal channel realignment. As a result, the setback from the southern boundary is narrower to accommodate a new perimeter road and fencing.

For Alternative 3A, the trees along the southern boundary of the landfill property will need to be removed. This is not required for any other Alternative. These trees will remain in place with all remaining Alternatives. The effect of this removal on the landscape is very minimal as these trees only provide a visual block from the agricultural field to the south. They are not integral to blocking the view from Water St. S. It is noted that overall, the trees are on the slope of the former quarry and therefore provide a relatively low and minimally effective visual blockage.

No landfilling will occur any closer to sensitive land uses than under current conditions. Therefore, there will be no negative effects.

### **Additional Mitigation**

A new treeline will be planted along the southern property boundary for Alternative 3A.

Additional mitigation related to effects to sensitive land uses is provided under Social Impacts in Section 1.1.1.

### **Net Effects**

No net effects are expected.

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**Table 7-16: Sensitive Land Uses**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<p><b>Indicator 1:</b> <b>Presence of sensitive lands within the study areas.</b></p>	<p>No sensitive land uses are present within the On-site Study Area.</p> <p>Sensitive residential and agricultural land uses are present within Study Area Vicinity. No effects to sensitive land uses are predicted.</p> <p>Landfilling will occur no closer to sensitive land uses than existing waste footprint. Landfilling will cease in near future.</p>	<p>No sensitive land uses are present within the On-site Study Area.</p> <p>Sensitive residential and agricultural land uses are present within Study Area Vicinity. No effects to sensitive land uses are predicted.</p> <p>All new landfilling will occur farther from sensitive land uses than it currently does.</p>	<p>No sensitive land uses are present within the On-site Study Area.</p> <p>Sensitive residential and agricultural land uses are present within Study Area Vicinity. No effects to sensitive land uses are predicted.</p> <p>Landfilling will not occur any closer to sensitive land uses than occurs during existing operations, therefore, there is no change to effects experienced as a result of landfill expansion.</p>	<p>No sensitive land uses are present within the On-site Study Area.</p> <p>Sensitive residential and agricultural land uses are present within Study Area Vicinity. No effects to sensitive land uses are predicted.</p> <p>Landfilling will not occur any closer to sensitive land uses than occurs during existing operations, therefore, there is no change to effects experienced as a result of landfill expansion.</p> <p>Trees between landfill and farmland to the south will be removed.</p>	<p>No sensitive land uses are present within the On-site Study Area.</p> <p>Sensitive residential and agricultural land uses are present within Study Area Vicinity. No effects to sensitive land uses are predicted.</p> <p>Landfilling will not occur any closer to sensitive land uses than occurs during existing operations, therefore, there is no change to effects experienced as a result of landfill expansion.</p>
<p><b>Additional Mitigation</b></p>	<p>No additional mitigation is required.</p>	<p>No additional mitigation is required.</p>	<p>No additional mitigation is required.</p>	<p>A new treeline will be planted along the southern property boundary.</p>	<p>No additional mitigation is required.</p>
<p><b>Net Effect</b></p> <p>M= Magnitude D= Duration F= Frequency R= Reversibility</p>	<p>No net effects anticipated.</p>	<p>No net effects anticipated.</p>	<p>No net effects anticipated.</p>	<p>No net effects anticipated.</p>	<p>No net effects anticipated.</p>
<p><b>Evaluation</b></p>	<p><b>Most Preferred</b></p>	<p><b>Most Preferred</b></p>	<p><b>Most Preferred</b></p>	<p><b>Most Preferred</b></p>	<p><b>Most Preferred</b></p>

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## 7.10.2 Aggregate Resources

### Current Conditions and Indicators of Effect

Aggregate extraction is a significant industry in St. Marys. Extraction occurred historically on the landfill property when owned by SMC. SMC surrendered their licence under Aggregate License 4494 dated September 21, 2016, for the existing and potential expanded landfill areas. This surrender was approved under Section 16(2) of the *Aggregate Resources Act* by the Ministry of Natural Resources and Forestry on November 8, 2016. The entire On-Site Study Area is now unencumbered by the aggregate extraction license.

In the Study Area Vicinity, industrial-scale aggregate extraction and processing occurs to the west and north of the landfill. Under current conditions, the landfill and adjacent SMC operations coexist with minimal effects.

To assess any potential changes from current conditions as a result of the landfill expansion, each Alternative was reviewed to determine if it would result in any effects to adjacent aggregate extraction and processing operations.

### Effects

Under the Do Nothing Alternative, no changes to existing conditions are expected and there will be no negative effect on aggregate extraction or processing on neighbouring properties.

Alternatives 2 and 3 require relocation of the watercourse north of the CKD pile. A portion of the watercourse will need to be placed on SMC lands which are subject to an active Aggregate License. This portion of lands may need to be acquired by the Town or placed in an easement. The license would also need to be amended to remove the area required for the watercourse. Although the area is relatively small, there is some potential that this could impact future extraction of processing operations at SMC.

With Alternatives 3A and 5, no work is required on SMC lands. The landfill is expected to operate in a similar manner as it does under current conditions. Therefore, no effects are expected to the quantity of aggregate material available or to processing operations.

### Additional Mitigation

No additional mitigation is required for Alternatives 3A, 5 or Do Nothing. There is no additional mitigation that can be applied to minimize the effects of the watercourse relocation on SMC as a result of Alternatives 2 and 3.

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### **Net Effects**

No additional mitigation is required for Alternatives 3A, 5 or Do Nothing. There is a potential net effect to aggregate extraction and processing at SMC as a result of Alternatives 2 and 3. The magnitude, frequency, duration and reversibility of these effects is summarized in Table 7-17.

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**Table 7-17: Potential Effects to Aggregate Extraction and Processing**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Indicator 1:</b>  <b>Impacts to aggregate extraction and processing</b>	There are no current effects to aggregate extraction or processing. No changes are expected with this Alternative. Therefore, no effects to extractive land uses are expected.	Relocation of the watercourse will require an amendment to the active aggregate licence at SMC and will require property acquisition of easement. Future extraction and processing operations may be affected.	Relocation of the watercourse will require an amendment to the active aggregate licence at SMC and will require property acquisition of easement. Future extraction and processing operations may be affected.	No work is required on SMC lands and no change to landfill operations are planned that would indirectly affect extractive land uses or processing operations.	No work is required on SMC lands and no change to landfill operations are planned that would indirectly affect extractive land uses or processing operations.
<b>Additional Mitigation</b>	No additional mitigation required.	No additional mitigation available.	No additional mitigation available	No additional mitigation required.	No additional mitigation required.
<b>Net Effects</b>  M= Magnitude D= Duration F= Frequency R= Reversibility	No net effects anticipated	Minor net effects anticipated: <b>M:</b> Minor. Area required is expected to be less than 1 ha. <b>F:</b> One-time loss of licenced land from SMC. <b>D:</b> Ability to extract or process aggregates on the small piece of is a long-term effect. <b>R:</b> Once the watercourse is relocated, lands could not be returned to SMC for future extraction purposes.	Minor net effects anticipated: <b>M:</b> Minor. Area required is expected to be less than 1 ha. <b>F:</b> One-time loss of licenced land from SMC. <b>D:</b> Ability to extract or process aggregates on the small piece of is a long-term effect. <b>R:</b> Once the watercourse is relocated, lands could not be returned to SMC for future extraction purposes.	No net effects anticipated	No net effects anticipated
<b>Evaluation</b>	<b>Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>Most Preferred</b>	<b>Most Preferred</b>

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## **7.11 Impacts to Socio-economic Conditions**

### **7.11.1 Financial Factors**

#### **Current Conditions and Indicators of Effect**

Under current conditions, the Town is responsible for covering the costs of operating and decommissioning the existing landfill. To assess these differences and the overall cost of each Alternative, the following are considered:

- Indicator 1: Capital Costs;
- Indicator 2: Operational and Maintenance Costs.

#### **Effects**

##### ***Indicator 1: Capital Costs:***

Capital costs for the landfill expansion are those costs associated with development of the site's infrastructure. Examples include the relocation of existing public drop-off area and construction of the new expansion capacity, such as building roads, excavating the landfill base (preparing the engineered liner) and building the LCS. The capital costs also include the cost for decommissioning the site and placing final closure cover. The following describes the expected capital costs:

- Do Nothing: This Alternative is expected to have the lowest capital cost as there is no new construction and only site closure is required.
- Alternative 2: This Alternative has the greatest new footprint, meaning that the new LCS, perimeter roads, perimeter ditching and new SWM basins are all larger than with any other Alternative. The watercourse will also be relocated for this Alternative, adding an additional cost. A portion of the relocated watercourse will be on SMC lands, requiring negotiated property acquisition or easement, further increasing the cost. No changes to scale, scale house or public drop-off area are required with this Alternative, resulting in some cost savings. Closure of the site will also be more expensive than with other Alternatives because of the larger footprint. Overall, this Alternative has the second highest capital cost.
- Alternative 3: This Alternative has a moderately sized new footprint. This means that the new LCS, perimeter roads, perimeter ditching and new SWM basins are all larger than existing conditions but smaller than Alternatives 2 and 5. The watercourse will also be relocated for this Alternative, adding an additional cost. A portion of the relocated watercourse will be on SMC lands, requiring negotiated property acquisition or easement, further increasing the cost. The scale, scale house and public drop-off area will need to be relocated with this Alternative, resulting in additional costs. Closure of the site will also be more expensive than with the Do

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Nothing Alternative but less costly than Alternatives 2 and 5 because of its moderately-sized footprint. Overall, this Alternative has the third lowest capital cost.

- Alternative 3A: This Alternative has a similar footprint to Alternative 3. This means that the new LCS, perimeter roads, perimeter ditching and new SWM basins are all similar to Alternative 3 (i.e., larger than existing conditions but smaller than Alternatives 2 and 5). The watercourse only requires realignment for this Alternative, which is less work, and therefore lower cost than the relocation in Alternatives 2 and 3. No work is required on SMC lands and therefore there will be no costs associated with property acquisition or easement. There are additional earthworks required on the south and north sides of the waste footprint to prepare for the internal perimeter ditch, perimeter road and the external ditch. The scale, scale house and public drop-off area will need to be relocated with this Alternative, resulting in additional costs. Closure of the site will also be the same as Alternative 3 (i.e., more expensive than with the Do Nothing Alternative but less costly than Alternatives 2 and 5) because of its moderately-sized footprint. Overall, this Alternative has the second lowest capital cost.
- Alternative 5: This Alternative has the second largest new footprint, meaning that the new LCS, perimeter roads, perimeter ditching and new SWM basins will be larger than in Alternatives 3 and 3A but smaller than in Alternative 2. This Alternative requires an entirely new, separate LCS, rather than just expansion of the existing system, as is required with the other Alternatives. The LCS will need a more robust design than other Alternatives. Building above the CKD pile will require some preliminary testing to confirm stability when the new waste is placed above. A more significant base preparation is needed as a natural clay liner does not exist above the CKD pile. Stability issues may further increase capital costs. This Alternative does not require any alterations to the watercourse or acquisition or easement on SMC lands. However, a bridge over the watercourse will be required. The scale, scale house and public drop-off area will need to be relocated with this Alternative, resulting in additional costs. Closure of the site will also be relatively expensive because of its large footprint. Overall, this Alternative has the highest capital cost.

***Indicator 2: Operational and Maintenance Costs:***

Operational and monitoring costs are incurred annually. They include staffing the site, equipment to operate the site (including fuel and maintenance), leachate disposal, monitoring and general maintenance. The Town currently spends approximately \$425,000 annually on operation and maintenance of the landfill.

Following closure there is a post-closure care period to ensure the waste placed at the site does not become an environmental problem. Post-closure care will include:

- Continued operation of the LCS.
- Maintenance of the site facilities, including:



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- Stormwater management system: ensuring sediments and excessive vegetation is controlled so the system functions correctly.
- Closure cover providing good grass cover and repair of any eroded areas.
- Leachate Collection System; maintaining pumps, preventing fouling, etc.
- Monitoring the landfill's performance; testing ground and surface water at the site, essentially a continuation of the typical annual monitoring programs.

For most operational items during the site's lifespan or following closure, there is essentially no difference between the Alternatives. For example, staffing and equipment requirements are expected to be the same between Alternatives as the same amount of waste will require disposal each year regardless of the Alternative selected. Monitoring will also be essentially the same, with spring and fall sampling and preparation of an annual monitoring report. The differences are related to items such as:

- Quantity of leachate requiring disposal: a smaller waste footprint generates less leachate than a larger footprint.
- Maintenance requirements: the length of ditches and the LCS piping, and the size of stormwater ponds are related to the size of the expansion footprints. A larger footprint will require more maintenance than a smaller footprint.

Based on the information above, the following **is expected with respect to operational and maintenance costs:**

- Do Nothing: This Alternative is expected to have the lowest operational cost as its footprint is smallest and its remaining operational period is very short.
- Alternative 2: This Alternative has the largest new landfill footprint. There will, therefore, be more length of leachate and stormwater facilities as well as more leachate generated than would be anticipated by the other Alternatives. This Alternative is expected to have the highest operational and maintenance cost.
- Alternative 3 and 3A: These Alternatives have a moderately sized new footprint and a moderate amount of new LCS and stormwater facilities to maintain. A moderate quantity of leachate will be generated, and therefore, needed to be treated. Both Alternatives will have similar, moderate operational and maintenance costs.
- Alternative 5: This Alternative has the second largest footprint. Compared to Alternatives 3 and 3A, there is more leachate requiring disposal. Maintenance associated with the leachate and stormwater systems will be higher than for Alternatives 3 and 3A as well. Alternative 5 is expected to have slightly lower operational costs than Alternative 2.

There is no mitigation or net effects associated with the costs of the landfill. Costs are summarized in Table 7-18.

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**Table 7-18 Summary of Financial Factors**

<b>Evaluation Factors</b>	<b>Do Nothing Alternative</b>	<b>Alternative 2: Horizontal Expansion of the Existing Landfill</b>	<b>Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location</b>	<b>Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment</b>	<b>Alternative 5: Vertical Expansion plus a New Footprint</b>
<b>Indicator 1: Capital Costs</b>	Lowest cost as no construction is required.	Second highest cost due to large footprint and watercourse relocation.	Third lowest cost due to small footprint and watercourse relocation.	Second lowest cost due to small footprint and short watercourse realignment.	Highest cost due to large footprint, separate, new LCS and additional measures to separate waste from CKD.
<b>Present Value Cost</b>	Not estimated	\$7,662,000	\$7,958,000	\$6,989,000	\$8,426,000
<b>Indicator 2: Operational and Maintenance Costs</b>	Lowest cost due to short operating period remaining.	Highest cost due to largest footprint. A large amount of leachate will be generated and therefore a large amount of leachate will need to be treated. Infrastructure (LCS, SWM facilities etc.) are larger in size than all other Alternatives and therefore will have the highest costs to maintain.	Second lowest cost due to moderately sized footprint. A moderate amount of leachate will be generated and therefore a moderate amount of leachate will need to be treated. Infrastructure (LCS, SWM facilities etc.) are moderate in length and therefore will have moderate costs to maintain.	Second lowest cost due to moderately sized footprint. A moderate amount of leachate will be generated and therefore a moderate amount of leachate will need to be treated. Infrastructure (LCS, SWM facilities etc.) are moderate in length and therefore will have moderate costs to maintain.	Second highest cost due to large footprint. A large amount of leachate will be generated and therefore a large amount of leachate will need to be treated. Infrastructure (LCS, SWM facilities etc.) is larger in size than Alternatives 3 and 3A but smaller than Alternative 2 and, therefore, will have a high cost to maintain.
<b>Annual Cost</b>	Not estimated	\$532,000	\$525,000	\$522,000	\$535,000
<b>Additional Mitigation</b>	No Additional Mitigation.				
<b>Net Effects</b>	Lowest capital and operational cost.	Second highest capital cost and highest operational cost.	Third lowest capital cost and second lowest operational cost.	Second lowest capital cost and second lowest operational cost.	Highest capital cost and second highest operational cost.
M= Magnitude D= Duration F= Frequency R= Reversibility					
<b>Evaluation</b>	<b>Most Preferred</b>	<b>3<sup>rd</sup> Most Preferred</b>	<b>3<sup>rd</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>4<sup>th</sup> Most Preferred</b>

Note 1 – Cost estimates provided in Appendix D, Section 3.8

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### 7.11.2 Social Impacts

#### Current Conditions and Indicators of Effect

There are no sensitive land uses in the On-Site Study Area. Sixteen residences are located on the east side of Water St. S., immediately adjacent to the landfill. Nuisance effects associated with landfill operations have the potential to affect these neighbours. Nuisance effects generally refer to noise, odour, visual impact, litter, dust and vermin, among other factors which can affect the quality of life and the ability to enjoy one's property.

As such, to assess any potential changes from current conditions as a result of the landfill expansion, each Alternative was reviewed using the following indicator:

- Indicator 1: Potential impacts to enjoyment of life and private property associated with the residences along Water St. S.

#### Effects

##### ***Indicator 1: Potential impacts to enjoyment of life and private property associated with the residences along Water St. S:***

With the Do Nothing Alternative, the landfill will close in September 2022 when its current ECA expires. Nuisance effects associated with noise, odour, litter, dust and other related effects would decrease upon landfill closure.

With Alternatives 2, 3, 3A and 5 landfilling will continue. The landfill is expected to continue to operate and accept the same volume of waste as it currently does. Therefore, a small number of odour, noise, and dust issues may infrequently affect neighbouring residents within acceptable provincially-set limits and similar to existing conditions.

Changes to air quality, odour and noise were described in Sections 7.4.1, 7.4.2 and 7.4.3, respectively. All predicted changes to air quality, odour and noise are within provincial limits.

With regard to air quality, the effects of all Alternatives are expected to be within provincial limits. The Do Nothing Alternative is slightly preferred as there will be no construction-related air emissions and emissions from landfill operations will cease in the short term and emissions will be reduced relative to current conditions. All other Alternatives are considered to have equal minor net effects, meeting all provincial limits

With regard to odour, effects are also expected to be minimal for all Alternatives. Do Nothing is preferred as the landfill will close in the near future and odour will be

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significantly reduced. Differences between the remaining Alternatives are minor. However, Alternatives 3 and 3A are predicted to be slightly preferred over other Alternatives as thirteen receptors may experience minor odour effects over seventeen receptors in Alternative 2 and fifteen receptors in Alternative 5.

With regard to noise, the net effects of all Alternatives are expected to be within provincial limits. The Do Nothing Alternative is slightly preferred as there will be no construction noise and noise from landfill operations will cease in the short term. All other Alternatives are considered to have equal minor net effects, meeting all provincial limits.

With all Alternatives, the spread of blowing litter and presence of vermin can also affect the ability of local residents to enjoy a high quality of life and enjoy their property. Effects associated with litter and vermin are currently very minor. Few complaints of nuisance effects have been received by neighbours in recent years. As operations are intended to continue in a similar manner and therefore the frequency or severity of these types of effects is not expected to change over current conditions.

The current visual barrier, comprised of a thick treeline, will be maintained along the western and southern property boundaries for all Alternatives, with the exception of Alternative 3A. With this Alternative, landfill infrastructure, including perimeter roads and fencing, must be placed closer to the southern property boundary than they currently are. The line of trees on the southern boundary will therefore need to be removed. The effect of this removal on the landscape is very minimal as these trees only provide a visual block from the agricultural field to the south. They are not integral to blocking the view from Water St. S. It is noted that overall, the trees are on the slope of the former quarry and therefore provide a relatively low and minimally effective visual blockage.

### **Additional Mitigation**

A new treeline will be planted along the southern property boundary for Alternative 3A.

Odour will be re-modeled during detailed design for Alternatives 2, 3, 3A and 5. Any additional mitigation identified at that stage will be implemented.

Remaining nuisance effects can be addressed with the standard operating procedures listed in Table 7-2.

### **Net Effects**

Net effects are expected to be minimal for all Alternatives. Do Nothing is preferred as the landfill will close in the near future and odour, noise, blowing litter and other nuisance effects will be reduced.

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From an odour perspective, Alternatives 3 and 3A are predicted to be slightly preferred over other Alternatives as thirteen receptors may experience minor odour effects over seventeen receptors in Alternative 2 and fifteen receptors in Alternative 5.

There will also be a very minor net effect from Alternative 3A as a result of the need to remove the existing trees along the southern property line. The net effect is minor as the current row of trees does not provide a significant visual block from most vantage points. The view from the agricultural field to the south may be slightly affected. New trees will be planted; however, a net effect will be experienced over a short time period until the new treeline matures.

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**Table 7-19: Potential Effects to Social Conditions**

Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment <sup>62</sup>	Alternative 5: Vertical Expansion plus a New Footprint
<p><b>Indicator 1: Potential impacts to enjoyment of life and private property associated with the residences along Water St. S.</b></p>	<p>Air quality, odour noise, litter, vermin and visual effects will be minor and will improve over time when the landfill closes.</p>	<p>Air quality, odour, noise, litter, vermin and visual effects will be minor and not significantly changed from current conditions.</p> <p>Odour may be experienced infrequently at a higher number of receptors than under current conditions.</p>	<p>Air quality, noise, litter, vermin and visual effects will be minor and not significantly changed from current conditions.</p> <p>Odour may be experienced infrequently at a slightly higher number of receptors than under current conditions.</p>	<p>Air quality, noise, litter and vermin-related effects will be minor and not significantly changed from current conditions.</p> <p>Odour may be experienced infrequently at a slightly higher number of receptors than under current conditions.</p> <p>Very minor changes to the view from the south are expected as the existing line of trees along the southern boundary is removed (These trees are currently in a low-lying area and don't provide a significant visual block).</p>	<p>Air quality, noise, litter, vermin and visual effects will be minor and not significantly changed from current conditions.</p> <p>Odour may be experienced infrequently at a higher number of receptors than under current conditions.</p>
<p><b>Additional Mitigation</b></p>	<p>No mitigation required.</p>	<p>Odour will be re-modeled during detailed design. Any additional mitigation identified at that stage will be implemented.</p>	<p>Odour will be re-modeled during detailed design. Any additional mitigation identified at that stage will be implemented.</p>	<p>Odour will be re-modeled during detailed design. Any additional mitigation identified at that stage will be implemented.</p> <p>A new treeline and visual buffer will be planted along the southern property boundary.</p>	<p>Odour will be re-modeled during detailed design. Any additional mitigation identified at that stage will be implemented.</p>

<sup>62</sup> Effects were not modelled for this Alternative but can be assumed to be similar to Alternative 3 as they both have approximately the same footprint.

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Evaluation Factors	Do Nothing Alternative	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment <sup>62</sup>	Alternative 5: Vertical Expansion plus a New Footprint
<p><b>Net Effects</b> M= Magnitude D= Duration F= Frequency R= Reversibility</p>	<p>Netimprovement when landfill closes.</p> <p><b>M:</b> Minor – Effect is expected to be low and in-line with existing conditions.</p> <p><b>F:</b> Infrequent – Odour effects are expected very infrequently.</p> <p><b>D:</b> Short-Term – Odour effects will be experienced only in the short-term and will be reduced when the landfill closes in September 2022.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>	<p>Moderate net effects anticipated:</p> <p><b>M:</b> Moderate – Effect is expected to be low and only slightly higher than existing conditions. A slightly larger number of receptors will be affected over all other Alternatives.</p> <p><b>F:</b> Infrequent – Odour effects are expected very infrequently.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>	<p>Minor net effects anticipated:</p> <p><b>M:</b> Minor – Effect is expected to be low and only slightly higher than existing conditions.</p> <p><b>F:</b> Infrequent – Odour effects are expected infrequently but potentially more often than other Alternatives at two receptors.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>	<p>Minor-Moderate net effects anticipated:</p> <p><b>M:</b> Minor – Effect is expected to be low and only slightly higher than existing conditions. Visual effect is negligible as only the view from the south will be affected and the current treeline is topographically low-lying.</p> <p><b>F:</b> Infrequent – Odour effects are expected infrequently but potentially more often than other Alternatives at two receptors. Existing visual break will be removed once.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill. The visual impact will be experienced short-term until the new trees have matured.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed. Changes to the view are reversible with a newly planted visual break.</p>	<p>Minor-Moderate net effects anticipated:</p> <p><b>M:</b> Minor-Moderate – Effect is expected to be low and only slightly higher than existing conditions. More receptors will be affected than Alternatives 3 and 3A but fewer than Alternative 2.</p> <p><b>F:</b> Infrequent – Odour effects are expected only infrequently.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>
<p><b>Evaluation</b></p>	<p><b>Most Preferred</b></p>	<p><b>4<sup>th</sup> Most Preferred</b></p>	<p><b>2<sup>nd</sup> Most Preferred</b></p>	<p><b>3<sup>rd</sup> Most Preferred</b></p>	<p><b>3<sup>rd</sup> Most Preferred</b></p>

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## **7.12 Impacts to Indigenous Communities**

### **7.12.1 Cultural and Environmental Features**

#### **Current Conditions and Indicators of Effect**

The St. Marys Landfill is within the lands covered by Treaty 29 (1827). The modern signatories to this treaty are:

- Aamjiwnaang First Nation (formerly Chippewas of Sarnia First Nation);
- Caldwell First Nation;
- Chippewas of Kettle & Stoney Point;
- Chippewas of the Thames First Nation; and
- Walpole Island First Nation.

The Haudenosaunee Development Institute (representing the Haudenosaunee Confederacy) and Six Nations of the Grand River Territory were also contacted as they expressed interest due to the site's location within the area covered by the Nanfan Treaty. The Indigenous communities listed above are believed to have Indigenous Rights, Treaty Rights, or both, affecting the subject property. However, this list may not be exhaustive.'

Under current conditions, lands within the On-Site Study Area which may have historically been used by Indigenous communities have been subject to aggregate extraction and landfilling for nearly a century, removing any potential for traditional use. Regardless of the Alternative selected, including the Do Nothing Alternative, there will be no opportunity to return lands to a condition under which they could be used for traditional uses in the short-term.

The Thames River is located west of the landfill within the Study Area Vicinity. The river was historically significant and continues to be an important for hunting, fishing, gathering of traditional and medicinal plants and source of drinking water for several Indigenous communities. Several Indigenous communities identified potential effects to the Thames River as a concern.

To assess any potential changes from current conditions as a result of the landfill expansion, each Alternative was reviewed to determine if it would result in any effects to the Thames River.



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## Effects

There is potential for the Thames River to be affected, as described in Section 7.6.1 (Surface Water) and 7.7.2 (Aquatic Ecology).

In summary, surface water from the site eventually drains to the Thames River. Existing landfill operations show no measurable impact on water quality exiting the landfill property, and therefore no impact on water quality in the Thames River. With the Do Nothing Alternative, the risk to the Thames River will not be changed over existing conditions.

The risk of contamination is higher in Alternatives 2, 3 and 5 than in Alternative 3A. This is because there is a higher chance of interactions with the CKD material as a result of the watercourse relocation in Alternatives 2 and 3 and a higher chance of CKD material interactions as a result of the landfilling above the CKD pile in Alternative 5.

With Alternative 3A, the watercourse realignment is minor and farther from the CKD pile compared to Alternatives 2 and 3.

In addition, there are aquatic species at risk in the Thames River. The Thames River will not be directly affected; however, contaminants or sediments from the watercourse could move downstream and impact the Thames River and the aquatics species inhabiting it.

## Additional Mitigation

No additional mitigation is required for the Do Nothing Alternative.

With Alternatives 2 and 3, the watercourse will be relocated close to the CKD pile. Measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD and direct it to the LCS, similar to the pipe in the meltwater deposit below the existing landfill.

With Alternative 3A, interactions between CKD and the watercourse are not expected. However, if annual monitoring indicates there are effects to water quality from CKD, measures to separate the watercourse from the CKD will be required. This may include a barrier and interceptor pipe to trap CKD and direct it to the LCS, similar to the pipe in the meltwater deposit below the existing landfill.

With Alternative 5, the design of the LCS will need to be more robust than with other Alternatives to limit the potential for mixing of landfill and CKD leachates and avoid creating CKD leachate seeps.

For all Alternatives, an Annual Monitoring Program and Adaptive Management Plan will be used to identify if unanticipated effects are occurring and to proposed measures to

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resolve the unanticipated effects. Adaptive Management Plans and their triggers are described in Section 11.3.

### **Net Effects**

With the Do Nothing Alternative, no net effects are expected. Alternative 3A represents a low to moderate risk of effects to surface water and Alternatives 2, 3 and 5 are high risk due to their potential interactions with the CKD pile. All other potential effects can be adequately mitigated.

A summary of net effects is provided in Table 7-20.

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**Table 7-20: Cultural and Environmental Features**

Evaluation Factors	Do Nothing	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Impacts to culturally or environmentally significant features</b>	Existing landfill operations show no measurable impact on water quality exiting the landfill property, and therefore no impact on water quality in the Thames River or aquatic habitats within it.	Surface water from the site eventually drains to the Thames River. This option represents a high risk to on-site surface water features relative to the other Alternatives and therefore a high risk to the Thames River and aquatic habitats within it.	Surface water from the site eventually drains to the Thames River. This option represents a high risk to on-site surface water features relative to the other Alternatives and therefore a high risk to the Thames River and aquatic habitats within it.	Surface water from the site eventually drains to the Thames River. This option represents a low to moderate risk to on-site surface water features relative to the other Alternatives and therefore a low to moderate risk to the Thames River and aquatic habitats within it.	Surface water from the site eventually drains to the Thames River. This option represents a high risk to on-site surface water features relative to the other Alternatives and therefore a high risk to the Thames River and aquatic habitats within it.
<b>Additional Mitigation</b>	None required.	Measures to separate the relocated watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.	Measures to separate the relocated watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.	<b>As a contingency only, if effects from CKD are observed in the realigned watercourse through the Annual Monitoring Program, measures to separate the watercourse from the CKD will be required.</b> This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.	The LCS in expansion area must be specifically designed to prevent CKD pile leachate from mixing with the waste leachate.

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Evaluation Factors	Do Nothing	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<p><b>Net Effects</b></p> <p>M= Magnitude D= Duration F= Frequency R= Reversibility</p>	<p>No net effects anticipated.</p>	<p>High risk of net effect anticipated:</p> <p><b>M:</b> High risk of effect due to potential watercourse/CKD pile interactions. <b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan. <b>F:</b> Risk of surface water impact is continuous over life of landfill. <b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>High risk of net effect anticipated:</p> <p><b>M:</b> High risk of effect due to potential watercourse/CKD pile interactions. <b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan. <b>F:</b> Risk of surface water impact is continuous over life of landfill. <b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>Low risk of net effect anticipated:</p> <p><b>M:</b> Low risk of effect with mitigation and monitoring <b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan. <b>F:</b> Risk of surface water impact is continuous over life of landfill. <b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>High risk of net effect anticipated:</p> <p><b>M:</b> High risk of effect due to waste height and potential seepage from CKD pile. <b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan. <b>F:</b> Risk of surface water impact is continuous over life of landfill. <b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>
<p><b>Evaluation</b></p>	<p><b>Most Preferred</b></p>	<p><b>Least Preferred</b></p>	<p><b>Least Preferred</b></p>	<p><b>2<sup>nd</sup> Most Preferred</b></p>	<p><b>Least Preferred</b></p>

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### **7.13 Summary of Net Effects**

The evaluation of net effects for all environmental components are summarized in Table 7-21. In summary:

- Doing Nothing does not address the Town's waste management needs and obligations and is not a feasible solution to the Problem Statement.
- Alternative 3A is Most Preferred or 2<sup>nd</sup> Most Preferred for the greatest number of criteria.
- Alternative 3 is 2<sup>nd</sup> Most Preferred. It is similar to Alternative 3A but has additional effects associated with the watercourse relocation. In particular, the water quality in the watercourse may be affected by its proximity to the CKD pile.
- Alternative 5 is 3<sup>rd</sup> Most Preferred. Although the watercourse will remain as is, the entirely new footprint is costly and requires a significant amount of new infrastructure. Risks to ground and surface water quality are high due to potential interactions with the CKD pile.
- Alternative 2 is 4<sup>th</sup> Most Preferred as it has the largest footprint and therefore the greatest quantity of new infrastructure and highest cost. It has effects associated with the watercourse relocation. In particular, the water quality in the watercourse may be affected by its proximity to the CKD pile.

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**Table 7-21: Summary of Net Effects**

Criteria	Do Nothing	Alternative 2: Horizontal Expansion of the Existing Landfill	Alternative 3: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Location	Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment	Alternative 5: Vertical Expansion plus a New Footprint
<b>Natural Environment</b>					
Air Quality	Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred
Odour	Most Preferred	4 <sup>th</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred
Noise	Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred
Groundwater	Most Preferred	3 <sup>rd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	Least Preferred
Surface Water Quality	Most Preferred	Least Preferred	Least Preferred	2 <sup>nd</sup> Most Preferred	Least Preferred
Surface Water Quantity	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
Terrestrial Ecology	Most Preferred	2 <sup>nd</sup> Most preferred	2 <sup>nd</sup> Most preferred	Most Preferred	2 <sup>nd</sup> Most preferred
Aquatic Ecology	Most Preferred	Least Preferred	Least Preferred	2 <sup>nd</sup> Most Preferred	Least Preferred
<b>Cultural Environment</b>					
Built Heritage Resources and Cultural Heritage Landscapes	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
Archaeological Resources	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
<b>Impacts to Traffic</b>					
Traffic	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
<b>Impacts to Land Use</b>					
Sensitive Land Uses	Most Preferred	Most Preferred	Most Preferred	Most Preferred	Most Preferred
Aggregate Resources	Most Preferred	2 <sup>nd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	Most Preferred	Most Preferred
<b>Impacts to Socio-economic Conditions</b>					
Financial Factors	Most Preferred	3 <sup>rd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	4 <sup>th</sup> Most Preferred
Social Impacts	Most Preferred	4 <sup>th</sup> Most Preferred	2 <sup>nd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred	3 <sup>rd</sup> Most Preferred
<b>Impacts to Indigenous Communities</b>					
Cultural and Environmental Features	Most Preferred	Least Preferred	Least Preferred	2 <sup>nd</sup> Most Preferred	Least Preferred
<b>Overall Preference</b>	<b>Does not address Problem Statement</b>	<b>4<sup>th</sup> Most Preferred</b>	<b>2<sup>nd</sup> Most Preferred</b>	<b>Most Preferred</b>	<b>3<sup>rd</sup> Most Preferred</b>

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### 7.14 Input from Stakeholders, Agencies, Indigenous Communities, and the Public

A Public Information Centre was held at the end of Phase 5 of the EA process. In addition, information was posted to the Town’s website and notification was provided to the public, agencies, and Indigenous communities.

No input was received from agencies or Indigenous communities with respect to the evaluation of Alternative Methods. Several comments were received from the public and interested stakeholders and are summarized in Table 7-22.

**Table 7-22: Comments Received from the Public Regarding the Alternative Methods**

Comment	Study Team Response	Where Addressed in EA
Concerned with drinking water well quality	<p>Groundwater quality is monitored on a regular and ongoing basis as part of the current landfill operations. To date, there are no concerns related to the landfill’s impact on off-site groundwater quality. Landfill monitoring reports are available online at the Town’s website.</p> <p>Based on the draft preferred expansion method, no waste placement closer to residential wells is being considered.</p> <p>Neighbouring property owner was generally satisfied with this approach, and with current monitoring program including well sampling.</p>	<p>Mitigation measures were included to address groundwater concerns, including measures to manage leachate and continue the site’s ongoing annual monitoring. Five private wells are currently being monitored and will continue to be monitored.</p> <p>Effects and mitigation are addressed in Section 7.5 and Section 9.0.</p>
Concerned with site Odours	<p>Neighbouring residents identified intermittent issues with landfill odour effects during conditions of NE-E wind direction. Project Team members discussed recent challenges to operations as a result of equipment operations and challenging spring weather conditions, as well as mitigation measures. Additionally, the results of the site air modelling for the expansion alternatives were discussed which indicated that current conditions represent the worst-case scenario for potential for effects.</p>	<p>Mitigation measures were provided to minimize odour, including the use of Best Management Practices and daily cover. Odour will be re-evaluated and modelled based on detailed design plans during preparation of the ECA application as noted in Section 11.1.</p>
Concerned with Traffic Speeds on	<p>Discussion with homeowner focused on sightlines of any relocated entrance and posted speed limit outside of St. Marys (80 km/h dropping to 50 km/h within the Town).</p>	<p>A Traffic Impact Study was completed. As a result of modeling, it was determined that current and future</p>

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Comment	Study Team Response	Where Addressed in EA
County Road 123.	Any change in entrance location will require sightline analysis, and updates to Traffic Impact Study. Resident plans to contact County to review posted speed limit along road section.	conditions are projected to be safe, and no changes are required. The Traffic Impact Study can be found in Volume III, Appendix H.

It was determined that concerns raised by stakeholders (i.e., drinking water quality and odour) can be addressed through standard landfill design, operational procedures and regular monitoring. Concerns associated with traffic were studied in the Traffic Impact Study which can be found in Volume III, Appendix H. The study did not identify the need for any changes Water St. S. or the landfill entrance due to present or future conditions.

### 7.15 Preferred Undertaking

Based on the evaluation presented in Table 7-21 and review of input from the public, it was determined that Alternative 3A, expanding the St. Marys Landfill both vertically and horizontally with a watercourse realignment, is preferred.



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## 8.0 Description of the Undertaking

The Undertaking involves expanding the existing landfill footprints (Figure 8-1) through a combination of first vertical expansion above and between the footprints, then a horizontal expansion to extend the footprint; the preferred alternative 3A (Figure 8-2). This section provides a more detailed description of the preferred alternative than discussed in Section 7. The preferred alternative presented herein may be altered and refined as part of future EPA permitting processes, following EA approval.

This section provides a description of the existing site and operations, followed by detailing the design concept and development sequence for the expansion. Lastly, this section describes the closure and post-closure care of the expansion at a high level.

### 8.1 Existing Landfill Site

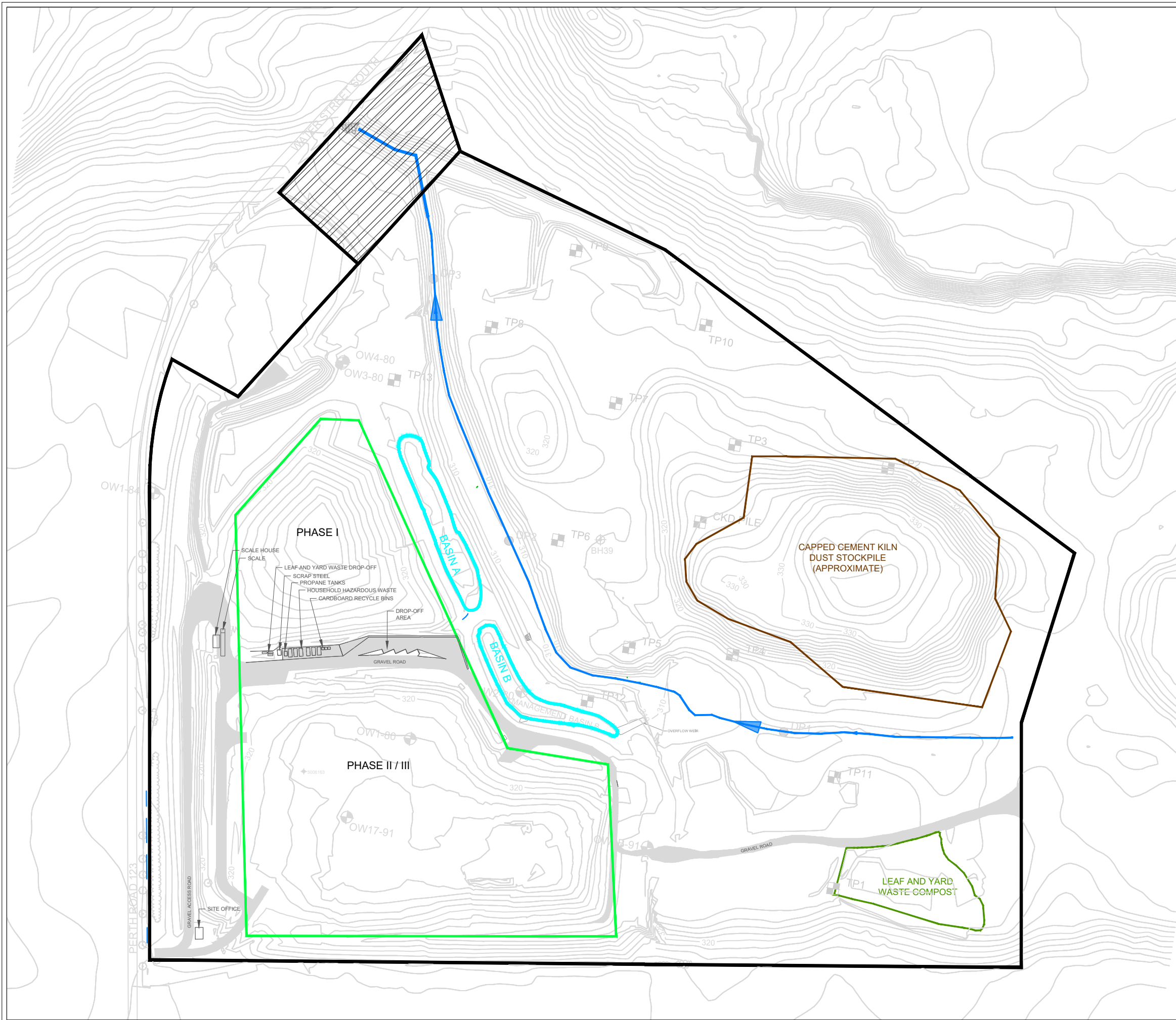
The existing 37 hectare landfill site is comprised of an 8.0 ha approved landfill footprint, scale and scale-house, public drop off depot, and a compost area. The existing site is shown on Figure 8-1. It is comprised of Phase I and Phase II/III with an approved volume<sup>63</sup> of 453,050 m<sup>3</sup>.

The site entrance is on Water Street and the peak vehicle traffic rate is approximately 86 vehicles per hour on Saturday mornings (AM), and the peak vehicle traffic rate during the week is 38 vehicles per hour in the AM. Garbage collection vehicles collect waste throughout the town and deliver it to the site on Tuesdays and Fridays. Individual users of the site proceed through the site entrance and visit the scale/scale house, after which users will be permitted to dispose of their wastes within the public drop-off area. The site is open for individual users and collection vehicles during the hours listed in Table 8-1. Site equipment is sometimes used for 30 to 60 minutes before or after these hours to prepare for waste receipt and to compact and cover wastes received during the day.

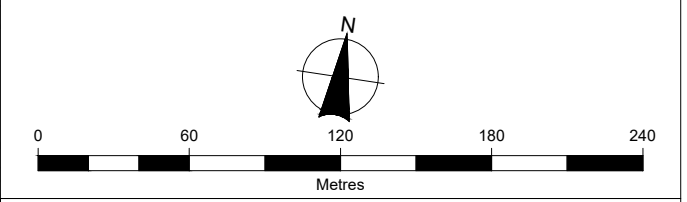
**Table 8-1: Public Operating Hours**

Sunday	Closed
Monday	Closed
Tuesday	8:00 am - 4:30 pm
Wednesday	8:00 am - 4:30 pm
Thursday	Closed
Friday	8:00 am - 4:30 pm
Saturday	8:00 am - 12:00 pm

<sup>63</sup> Original Phase I capacity of 104,000 m<sup>3</sup>, 276,000 m<sup>3</sup> for Phase II/III, plus 73,050 m<sup>3</sup> of interim capacity for a total of 453,050 m<sup>3</sup> as of the Site's January 10, 2022 Environmental Compliance Approval (ECA). See Section 3.1.2.3 for an explanation of the interim ECAs.



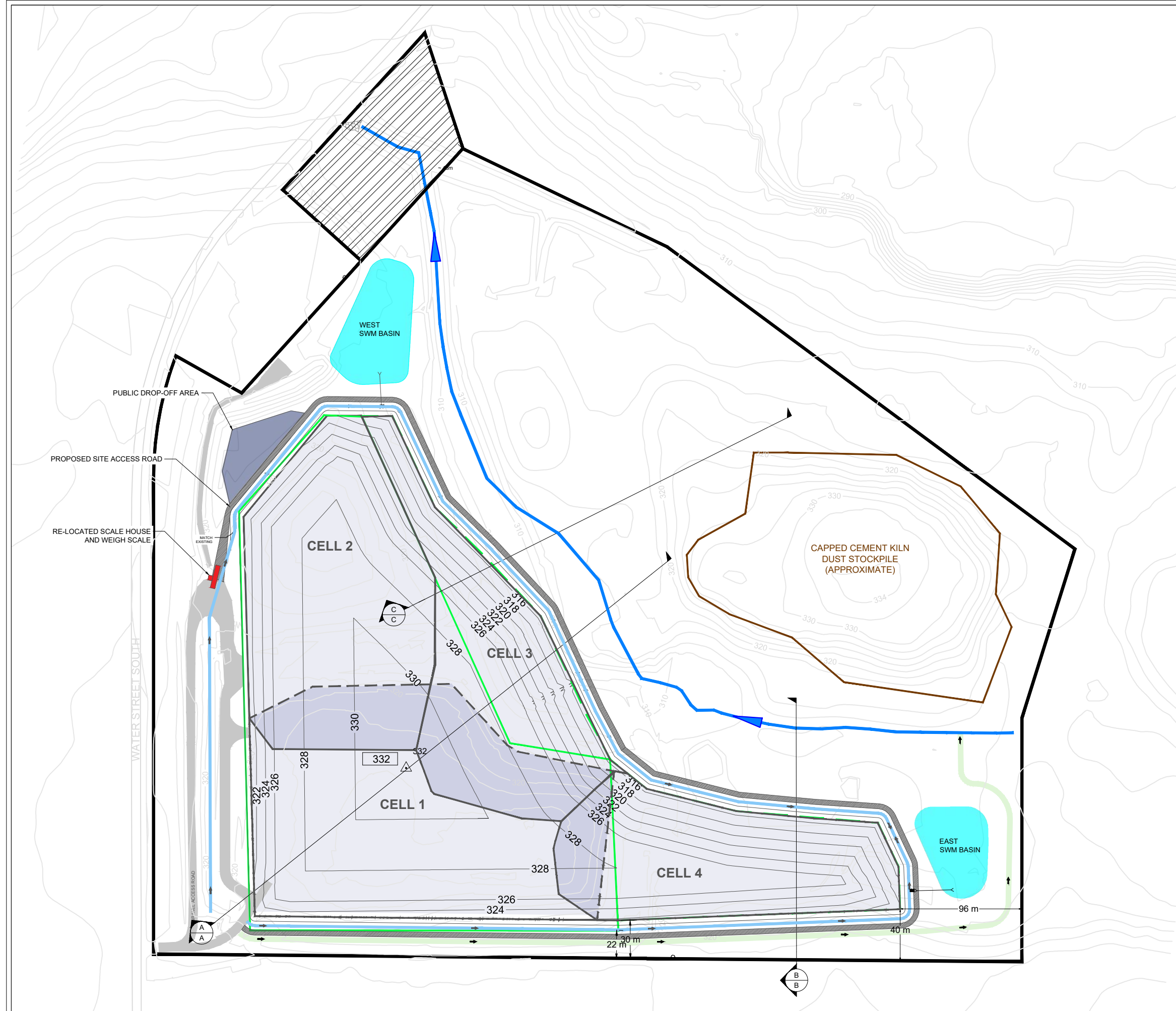
- LEGEND**
- PROPERTY LINE
  - APPROXIMATE CKD PILE COVER LIMIT
  - EXISTING WATERCOURSE
  - EXISTING REFUSE LIMIT
  - EXISTING CONDITIONS CONTOURS (1m)
  - MONITORING/OBSERVATION WELL
  - TESTPIT
  - RIGHT-OF-WAY AND SEWER EASEMENT
  - EXISTING STORM BASIN
  - EXISTING GRAVEL ROAD










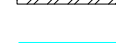

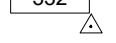





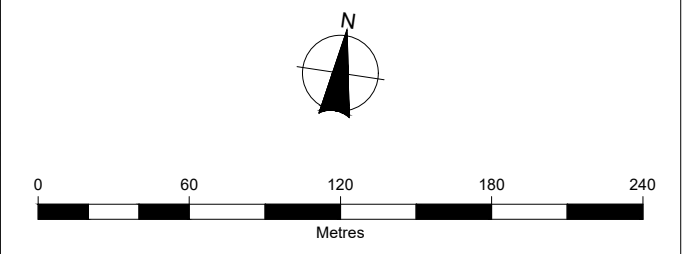
Client  
**TOWN OF ST. MARYS**

Figure Title  
**EXISTING CONDITIONS  
SITE PLAN**

Drawn ZM	Checked JH	Date JULY 2022	Figure No. <b>8-1</b>
Scale 1:3000		Project No. 300032339	



- LEGEND**
-  PROPERTY LINE
  -  APPROXIMATE CKD PILE COVER LIMIT
  -  PROPOSED WATERCOURSE ALIGNMENT
  -  EXISTING REFUSE LIMIT
  -  EXPANSION REFUSE LIMIT
  -  EXISTING CONDITIONS CONTOURS (1m)
  -  PROPOSED WASTE CONTOURS (2m)
  -  CROSS-SECTION LABEL
  -  RIGHT-OF-WAY AND SEWER EASEMENT
  -  PROPOSED STORMWATER BASIN (APPROXIMATE)
  -  APPROXIMATE PEAK OF WASTE (masl)
  -  STORMWATER FLOW DIRECTION
  -  EXTERNAL DRAINAGE CHANNEL
  -  ACCESS ROAD
  -  LANDFILL DITCH



Client  
**TOWN OF ST. MARYS**

Figure Title  
**ALTERNATIVE METHOD 3A  
PROPOSED FINAL REFUSE CONTOURS**

Drawn ZM	Checked JH	Date JULY 2022	Figure No. <b>8-2</b>
Scale 1:3000	Project No. 300032339		

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The existing site infrastructure does not need to be changed to allow immediate (initial) development and operation of the preferred alternative. This infrastructure includes the site entrance, weigh scale, scale house, internal access roads, public drop-off facility, stormwater drainage and buffer areas. Some of these site facilities will need to be relocated as part of the landfill expansion and the timing of the relocation activities is discussed below as part of the development sequence.

The site currently employs 1 full-time employee and 5 part-time employees. The Supervisor of Environmental Services and the Supervisor of Operations occasionally attend the site. The employment levels, site entrance, and truck traffic are expected to remain the same throughout the life of the expanded site.

## **8.2 Design Concept**

This section describes the design concept for landfill expansion for the preferred alternative 3A. The expansion provides the additional disposal capacity required to allow operations through the end of the EA Planning Period to December 2056. The expansion will operate in a similar fashion as the existing site, described in Section 8.1 above.

To obtain the required disposal capacity for the planning period, the expansion involves:

- Vertical expansion consisting of Cells 1 and 2 above and between the existing Phase I and Phase II/III waste footprints, followed by
- Horizontal expansion consisting of Cells 3 and 4 that extend the existing waste footprints to the east (and slightly north).

The overall expansion is shown on Figure 8-2 with cross-sections through the site shown as Figure 8-3 (A-A') and Figure 8-4 (B-B' and C-C'). The expansion will be built in steps, called Cells 1 to 4. This sequence of site development is described further in Section 8.7.

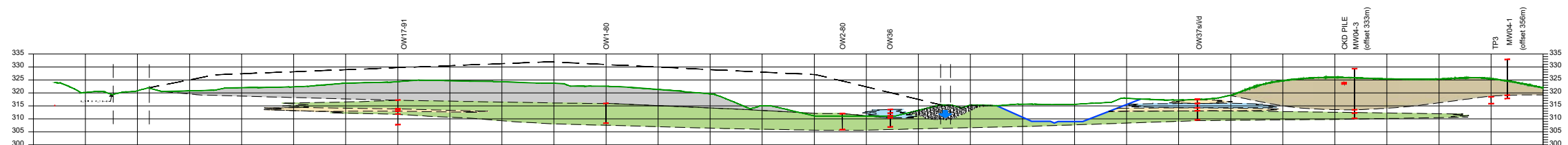
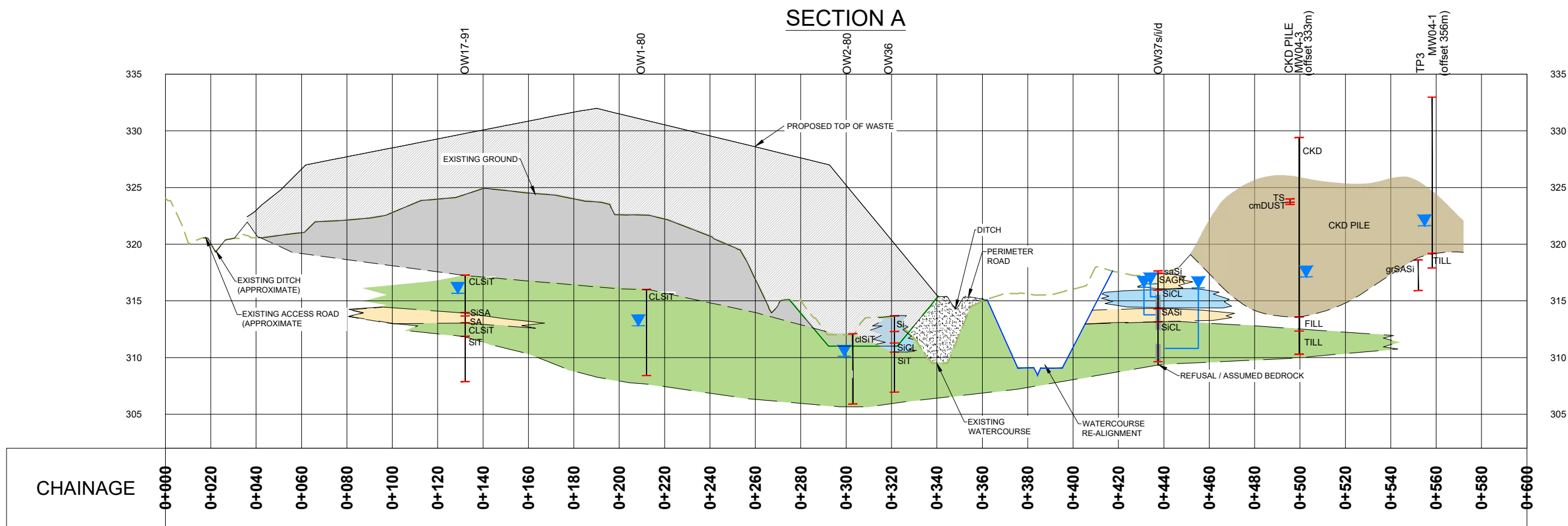
The expansion will add 3.2 ha of disposal footprint to the landfill site and 708,000 m<sup>3</sup> of additional disposal capacity. It is noted that the pre-EA-approval 'interim operation' of the landfill has filled above Phase II/III and is included in this additional disposal capacity. This fill, described in Section 3.1.3.8, is the new base for the expanded landfill. The expansion design has incorporated this interim fill while achieving the intended planning period capacity (ending December 31, 2056).

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The sub-sections below describe the un-seen components of the expanded landfill, namely:

- Landfill liner – Section 8.2.1
- Leachate Collection System – Section 8.2.2
- Leachate disposal – Section 8.2.3
- Waste footprint construction and site development – Sections 8.2.4 and 8.7

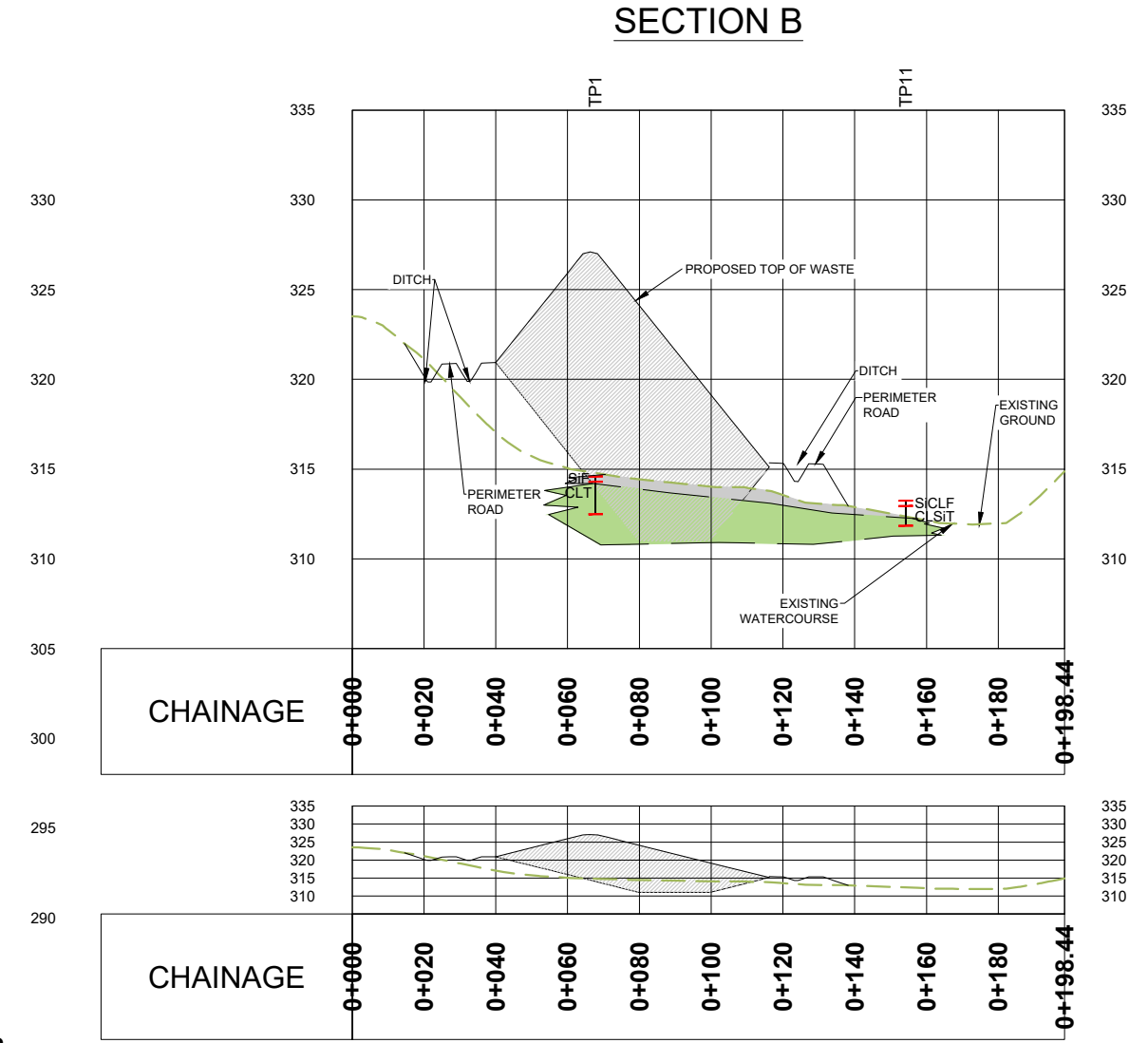
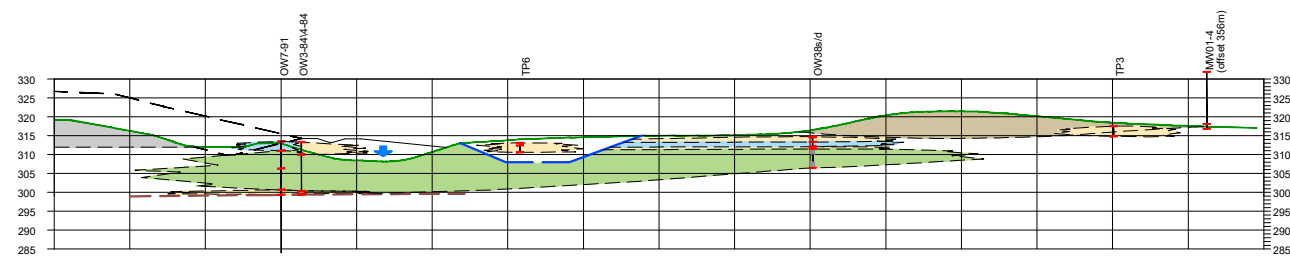
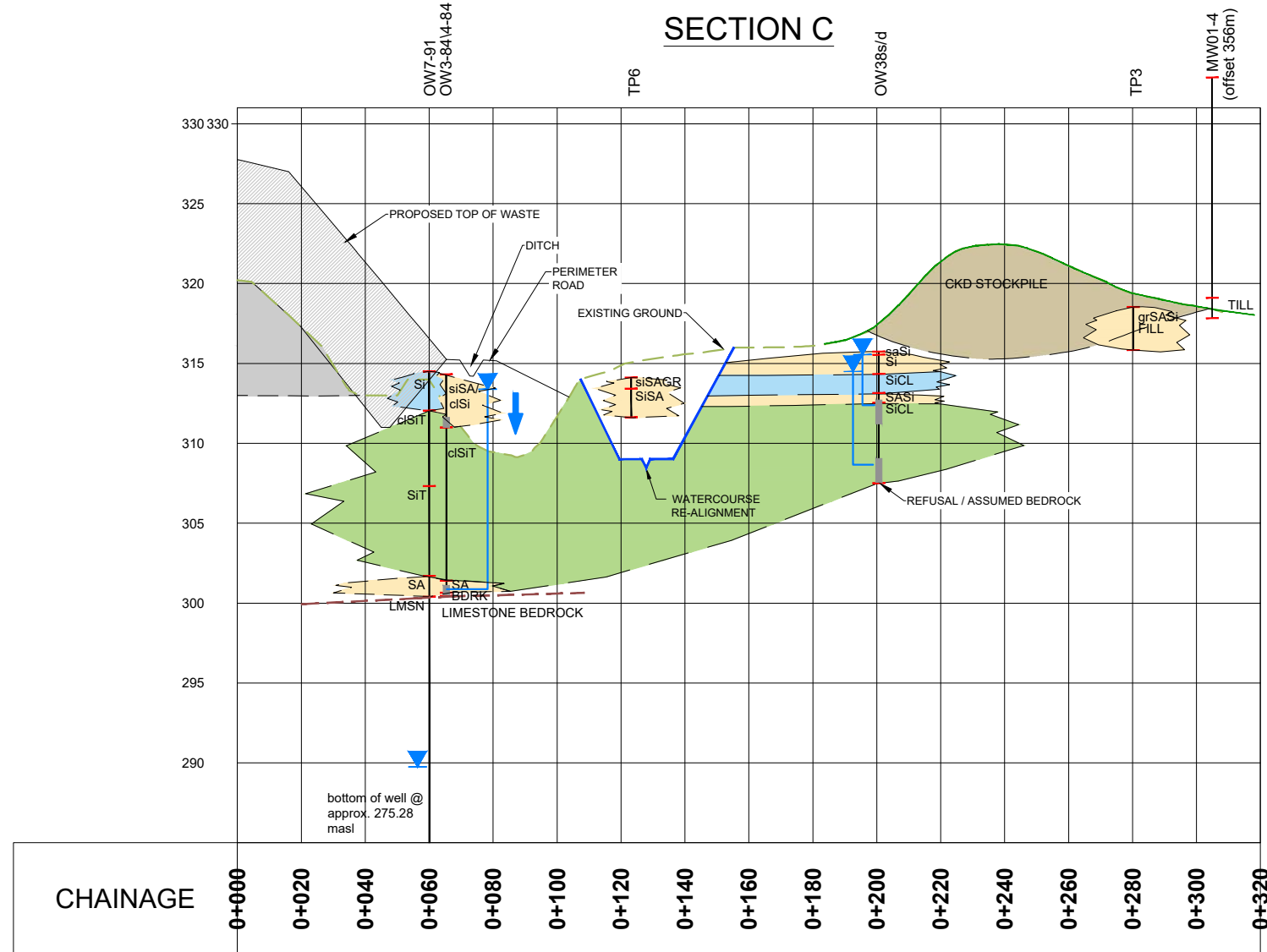
# SECTION A




Client  
**TOWN OF ST. MARYS**

Figure Title  
**ALTERNATIVE METHOD 3A  
CROSS SECTIONS**

Drawn ZM	Checked JH	Date JULY 2022	Figure No. <b>8-3</b>
Scale 1:2,000	Project No. 300032339		





**BURNSIDE**

Client  
**TOWN OF ST. MARYS**

Figure Title  
**ALTERNATIVE METHOD 3A  
CROSS SECTIONS**

Drawn ZM	Checked JH	Date JULY 2022	Figure No. <b>8-4</b>
Scale 1:3,000	Project No. 300032339		

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A preliminary site plan, shown on Figure 8-5, has been prepared to support the landfill expansion. This site plan provides preliminary site grading design, including surface drainage, stormwater management and watercourse realignment needed for the expanded landfill. Figure 8-5 shows, conceptually:

- Watercourse realignment with current UTRCA regulation lines – Section 8.2.5
- Stormwater Management features – Section 8.2.6
  - Landfill ditches and inverts
  - External lands drainage ditches and inverts
  - Stormwater Management Basins and contours
  - Capped landfill elevations
- Access roads and elevations – Section 8.2.7
- Scale and Public Drop-Off relocation – Section 8.2.8
- Buffers – Section 8.2.9

### **8.2.1 Landfill Liner**

The existing landfill Phase I and Phase II/III footprints are built upon the site's natural clays. The non-permeable natural clays act as a liner that has been found to be sufficient in limiting, if not entirely stopping, the flow of leachate<sup>64</sup> from leaving the waste footprint and entering groundwater.

As seen on Figure 8-2:

- Expansion of Cell 1 occurs above the Phase II/III waste footprint, and therefore has no new liner.
- Cell 2 will fill above Phase I and into the 'valley' area between Phase I and Phase II/III. In the valley, the liner will be provided by the site's natural clays.
- Cells 3 and 4 also represent new waste footprint. They are being built within the site's natural clays, acting as a landfill liner for the new footprint.

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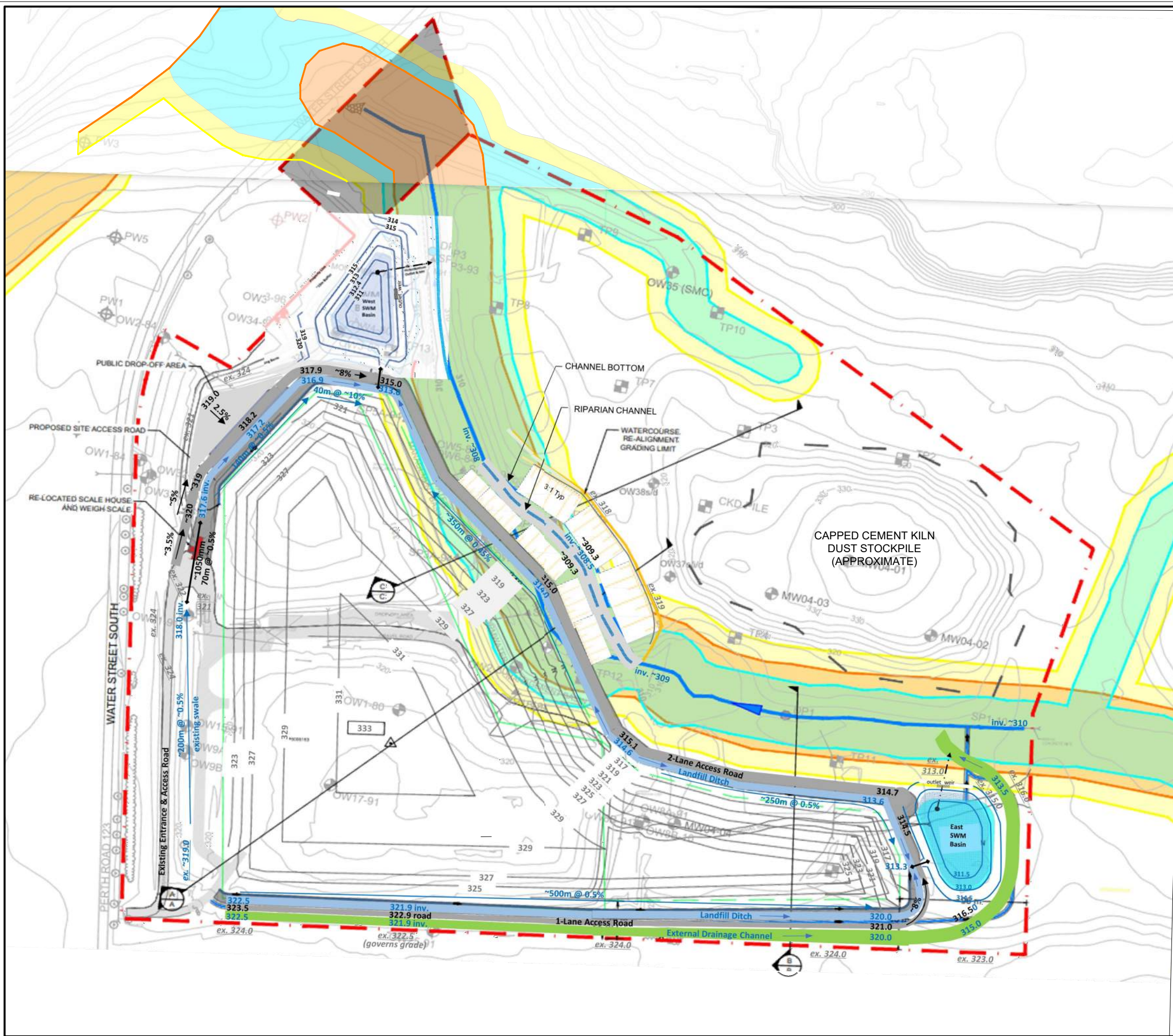
<sup>64</sup> Leachate is contaminated groundwater generated from landfilled waste mixing with groundwater, rainwater and/or snow melt. Contaminants in the waste are extracted much like a coffee percolator. Water drips into coffee grinds (waste) creating the coffee (leachate).



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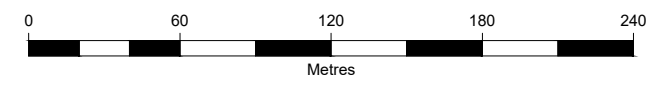
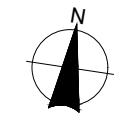
### **8.2.2 Leachate Collection System**

Phase I of the landfill was built upon the site's native clays, acting as a liner. Initially, Phase I did not include a leachate collection system. Later, the Town installed a perimeter leachate collection system to prevent leachate seeps on the above grade side slopes of Phase I. At the time, the perimeter leachate collection system drained to a temporary storage tank that was periodically emptied by a vacuum truck. The truck then took the leachate to the St. Marys WWTP.



**LEGEND**

- - - PROPERTY LINE
  - EXISTING WATERCOURSE
  - PROPOSED WATERCOURSE ALIGNMENT
  - EXISTING REFUSE LIMIT
  - EXPANSION REFUSE LIMIT
  - EXISTING CONDITIONS CONTOURS (1m)
  - ?? MONITORING/OBSERVATION WELL
  - ?? TESTPIT
  - CROSS-SECTION LABEL
  - EXTERNAL DRAINAGE CHANNEL
  - ACCESS ROAD
  - LANDFILL DITCH
- UPPER THAMES RIVER CONSERVATION AUTHORITY REGULATED AREAS**
- REGULATION LIMIT 2021
  - EROSION HAZARD LIMIT
  - FLOODING HAZARD LIMIT



Client

**TOWN OF ST. MARYS**

Figure Title

**ALTERNATIVE METHOD 3A  
PROPOSED GRADING AND SITE PLAN**

Drawn DB	Checked DB	Date JULY 2022	Figure No. <b>8-5</b>
Scale 1:3,000	Project No. 300032339		

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Phase II/III was designed with a leachate collection system. This improved upon the Phase I system in that it included collection pipes surrounded by gravel like a French drain. These 'lateral' pipes drained to a perimeter 'header' pipe at the Phase II/III perimeter. The header pipe led to another temporary storage tank. Again, a vacuum truck was used to take the leachate to the St. Marys WWTP. Later, a leachate sewer was added to the site. This eliminated the need for the Phase I and Phase II/III tanks. The sewer directed the leachate to flow to the St. Marys WWTP, eliminating the trucking.

The new waste footprint areas of the expanded landfill will similarly rely upon the native clay liner and a leachate collection system like Phase II/III. The new waste footprint areas are the 'valley' portion of Cell 2 and the expansion footprints of Cells 3 and 4. Building on the Phase II/III site design, a leachate collection pipe network will be installed in compliance with O. Reg. 232/98, as well as other Ministry requirements such as the Ontario Water Resources Act, to prevent contamination to the surrounding environment. Landfill cells will be graded to facilitate the gravity flow of leachate towards the leachate collection system, minimizing the leachate head on the liner.

Direct vertical expansion over the existing landfill cells will utilize the existing landfill liner and collection system. A few of the existing leachate collection system maintenance holes, particularly between Phase I and Phase II/III (where Cell 2 is proposed) and along the northeastern perimeter of Phase II/III, will need to be converted into "clean-outs" and extended to maintain access to the existing leachate collection system.

### **8.2.3 Leachate Disposal**

As discussed above, leachate currently collects on-site and is transported by gravity sewer to the St Marys WWTP for treatment. The Leachate Treatment and Disposal Report (Volume III, Appendix I) assessed the potential for continual leachate disposal at the St. Marys WWTP by:

- Reviewing the anticipated average peak flow (volume), and
- Modelling the likely worst-case chemical quality of leachate.

The plant currently receives an average wastewater flow of 4,374 m<sup>3</sup>/day (2018 data) or 79% of its rated capacity. The estimated current and future leachate volume generated by the St. Marys Landfill (including the expansion) represents only 1.0% of the Average Daily Flow currently processed by the WWTP, and an even smaller percentage of the approved rated capacity.

Based on the expected effluent concentration of leachate parameters, the treatment processes at the plant, and the dilution ratio at the WWTP (less than 1.0 percent of total inflow), it is not expected that the additional leachate flow would adversely affect the ability of the St. Marys WWTP to meet its effluent requirements.

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In the case of a temporary shut-down of the Town's WWTP, the St. Marys landfill may temporarily store leachate within the prepared base of the landfill. Several days of leachate volume can be stored in this manner without compromising the landfill liner or creating leachate seeps. With proper design and operating plans developed during the EPA approval stage, temporary storage in the landfill base can be used during periods of particularly high flows to reduce the quantity of leachate being sent to the St. Marys WWTP. In turn, this would provide the sewer or the WWTP some time to alleviate a temporary over capacity condition.

As such, the leachate generated via the landfill expansion can continue to be accommodated at the St. Marys WWTP. Improvements to the leachate collection sewer and connections to the new landfill cells are detailed below.

#### **8.2.4 Waste Footprint Construction**

There are two components to the site expansion under preferred alternative 3A:

- Vertical expansion consisting of Cells 1 and 2 above and between the existing Phase I and Phase II/III waste footprints, followed by
- Horizontal expansion consisting of Cells 3 and 4 that extend the existing waste footprints to the east (and slightly north).

The expansion will require excavation and grading between Phase I and Phase II/III and for Cells 3 and 4 to achieve the below-grade depths that provide the site capacity. The below-grade excavation will be sloped to promote gravity drainage into the leachate collection system. The general development sequence is as follows:

- Cell 1 operation continues filling above the existing Phase II/III.
  - No excavation is expected.
  - No changes to the existing leachate collection system are anticipated.
- Cell 2 requires some excavation and grading for the 'valley' portion of the cell.
  - Some maintenance holes between Phase I and Phase II/III will be extended or replaced with clean-out pipes.
  - The leachate collection system will be installed in the excavated area. It will be connected to the existing sewer (leading to the St. Marys WWTP).
- Cell 3 will be excavated and graded for the entire expansion footprint.
  - The leachate collection system will be installed, connecting to the existing sewer.
- Cell 4 will be excavated and graded for the entire expansion footprint.
  - The leachate collection system will be installed, likely connecting to the Cell 3 leachate collection system header (which leads to the sewer).

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To achieve the necessary disposal capacity, a 230 m portion of the watercourse must be realigned – essentially pushed north. This is described in Section 8.2.5. The realignment provides additional width near the middle of the waste footprint. It is the cross-sectional geometry that provides the disposal capacity without exceeding O.Reg. 232/98 above grade slope requirements (maximum of 4:1 and minimum of 20:1).

As described in Sections 8.2.6 and 8.2.7, the expansion will require excavation and filling to develop the site’s perimeter facilities, namely the access roads, internal/external ditching and the relocated stormwater management basins (West and East Basins).

There is a significant amount of excavation and filling required as part of construction. This has been sequenced to reduce the need to import soils from off-site sources. As a result, a significant increase in heavy truck traffic due to construction is not anticipated.

Table 8-2 outlines the overall cut and fill process for the site’s construction as well as cover material requirements. During operation of Cells 1 through 3, there is an excess of soil material which can either be used during development of the next cell, or for use as operational or interim cover. During the operation of Cell 4, no construction activities are anticipated.

**Table 8-2: Soil Balance**

During Operation of†	Anticipated Cut (m³)	Anticipated Fill (m³)	Net Soil Balance (m³)
Cell 1	35,000	25,000	10,000 (excess)
Cell 2	31,000	28,000	3,000 (excess)
Cell 3	37,000	18,000	19,000 (excess)
Cell 4	none	none	none
† Major construction activities requiring earthworks are only anticipated during operation of Cell 1, 2, and 3.			
Cover Soil Requirements	Operational‡ (m³)	Interim§ (m³)	Final¹ (m³)
Cell 1	24,800	14,400	24,300
Cell 2	20,000	10,800	17,700
Cell 3	34,700	9,600	22,900
Cell 4	26,400	7,000	18,600

‡ Operation cover is calculated using assuming 15% of cell capacity.

§ Interim cover assumes full 3D area of each Cell, applied with a thickness of 300mm. Where possible, interim cover will be partly removed before filling continues, so this volume exceeds requirements.

¹ Final cover will be applied with a total thickness of 750mm (per O.Reg. 232/98: 600mm general soil, and 150mm of topsoil) over the 3D area that has reached final waste contours (i.e., no further landfilling). It does not include previously placed interim cover.

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### **8.2.5 Watercourse Realignment**

Within the landfill property, and within the sewer easement at Water Street South, there is approximately 790 m of watercourse (see Figure 8-1 for existing conditions) which has been significantly altered over the many years of quarrying. The existing watercourse is relatively straight, having a riparian channel less than 1 m deep with a cross-section width of about 2.5 m. The watercourse enters the site from the east, through a 600 mm diameter culvert. It flows to the north-west corner of the site and exits through a 1500 mm diameter culver below Water St. S to the Thames River.

Currently, the watercourse drains approximately 350 ha. of upstream rural lands into the landfill site from the east, then through the site and into the river. It bisects the St. Marys landfill property and drains the entire landfill site, plus approximately 250 ha. of external lands from the southeast. A smaller (~100 ha.) tributary, draining an area north and east of the landfill, was diverted south and into the site's watercourse immediately east of the landfill property boundary.

Preferred Alternative 3A is premised on retaining the watercourse in its present location, except for the realignment of an approximate 230 m reach within the middle of the site. The proposed realignment is shown on Figure 8-5 as well as Sections A and C (Figure 8-3 and Figure 8-4).

The realigned watercourse has been designed to match the existing watercourse within a 50 m to 60 m wide corridor, assuming:

- 3:1 embankment slope,
- 15 m (approximate) wide watercourse bottom,
- 2.5 m to 3.0 m wide riparian channel, and
- 20 m (approximate) setback from top-of-bank to the edge of existing CKD pile embankment.

A new riparian channel can be shaped using natural channel design principles. Additional improvements to the remaining sections of the watercourse through the landfill property will be made, including the addition of channel substrates, installation of habitat features and bank stabilization, where required. All new and remaining riparian areas will be naturalized with trees, shrub and grass plantings.

It is expected that middle of the realignment construction will begin during the operation of Cell 1 as shown on Figure 8-6. This provides some time for stabilization of the realignment and construction required for Cell 3. The completed realignment construction should be finished by the time the excavation of Cell 3 begins, as shown on Figure 8-7. A detailed watercourse realignment plan will be submitted to UTRCA and DFO for review and to secure the relevant permits prior to construction.

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Most of the realigned watercourse section will be constructed in the dry, off-line, leaving the upstream and downstream ends to be connected afterwards. Once the banks are vegetated and stabilized, the downstream channel connections will be constructed. Any wildlife within the existing channel will be salvaged and relocated before the existing channel closed off. No in-water work will occur during June and July.

### **8.2.6 Stormwater Management**

Much of the wet weather landfill drainage within active waste cells infiltrates, becomes leachate, and is managed as outlined in Section 8.2.2. Leachate is generated during below-grade operations and from light rainfalls / snowmelt infiltration during above grade operations.

During rainstorms, when waste operations are above grade, the runoff of surface water includes contamination by suspended solids, mostly originating from disturbed soils. Landfill operating measures are intended to minimize wet weather surface water contamination. This includes efforts like minimizing the tipping face (open waste), compacting the waste, placing cover and grading (sloping the surface) to avoid drainage into the waste.

Typical landfill stormwater management controls runoff from the waste footprint and runoff that flows toward the waste footprint. Runoff from within the waste footprint is collected by the internal ditches and directs it to stormwater management ponds for sediment treatment. The ponds detain the flow of runoff, eventually discharging to the watercourse. Inspections and monitoring protect the surface water from contamination.

A ditch dedicated to intercepting runoff from outside the waste footprint will be located inside the south boundary perimeter. This runoff will not contact any waste, so it will convey external surface water around the perimeter of the waste footprint and then discharge directly into the watercourse.

A preliminary design for stormwater management is shown on Figure 8-5 and detailed in the following paragraphs. A detailed Stormwater Management Plan will be developed and submitted to UTRCA and MECP for approval prior to construction.

Landfill perimeter ditches are needed between the access roads and the edge of the landfill to convey landfill runoff to the stormwater management basins. The perimeter ditches are offset from the waste footprint to allow placement of final (closure) cover when filling is complete. The two existing stormwater management basins (A & B) are to be relocated and enlarged (East and West).

Landfill ditches (channels) will have 1 m wide bottoms, 3:1 embankments and gradients of approximately 0.5% to enable some of the suspended solid loads to settle. The ditches convey runoff into stormwater management basins, designed to exceed an

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enhanced level of water quality treatment. They are designed with capacity to convey runoff from at least a 1:250-year storm. The mild gradient provides non-erosive flow velocities for grass lining, although a few steeper sections will require rip-rap lining.

A separate channel will be constructed to convey external stormwater from the agricultural lands, immediately south of the site and directly into the watercourse tributary. This channel will be similar in design to the landfill channels, except having a 3 m wide bottom.

Over the life of the landfill, its active areas will be capped with clay and vegetated as final cover. Although the potential for stormwater contamination decreases after landfill capping, the surface runoff potential increases. The stormwater basins are designed to attenuate the peak flow of surface water from the capped site, during large storms, to no more than the pre-development flow rates.

New stormwater management basins are proposed to service each of the east (~7.8 ha) and west sides (~9.5 ha) of the site. The stormwater management basins will provide downstream protection using:

- Permanent pools for water quality control;
- Extended Detention for erosion control and accidental spill containment; and
- Conventional detention to attenuate peak flow rates.

The design of the stormwater basins include:

- Permanent pool volumes exceeding an enhanced level of treatment;
- Extended Detention volumes exceeding runoff from 25mm of rain;
- Overcontrolling peak flow rates up to the 1:250-year storm;
- Vertically extending the outlet weir to provide flow attenuation beyond the 1:250-year storm; and
- Significant freeboard for the basins and ditches beyond the 1:250-year storm.

These levels of service were chosen to demonstrate the site's ability to provide adequate infrastructure, plus resiliency to the effects of ongoing Climate Change.

The stormwater basins are designed with a 4:1 embankment both above and below the normal water level except for an approximately 4.2 m wide by 0.6 m high (7:1) safety shelf at the normal water level. The perimeter of the basins will be at an elevation of approximately 315m and this is almost 2 m higher than the 1:250-year storm level and approximately 1.5 m higher than the top (overflow) of the concrete control weirs.



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**Table 8-3: Stormwater Basin Design Summary**

EAST POND		Std. Criteria	Req'd	Prov'd	to Std	NWL	
Perm Pool		12.5 mm (q)	975	2000	205% (q=26mm)	NWL	312.88
Ext Det		25 mm (P)	480	800	167% (P=32mm)	ED WL	313.27
						HWL	313.63

R <sub>T</sub>	Q <sub>in</sub> (@Tc)	Q <sub>pre</sub> (target)	Q <sub>out</sub> m <sup>3</sup> /s	to target	Ext Det m <sup>3</sup>	V <sub>det</sub> m <sup>3</sup>	V <sub>tot</sub> m <sup>3</sup>	HWL
1:2 yr	0.29	0.23	0.04	17%	800	48	848	313.27
1:25 yr	0.64	0.51	0.39	77%	800	261	1061	313.39
1:100 yr	0.94	0.77	0.68	88%	800	393	1193	313.45
1:250 yr	1.23	1.01	0.94	93%	800	488	1288	313.49
freeboard	-	-	1.95	-	800	800	1600	313.63

WEST POND		Std. Criteria	Req'd	Prov'd	to Std	NWL	
Perm Pool		12.5 mm (q)	1188	3100	261% (q=33mm)	NWL	312.69
Ext Det		25 mm (P)	600	950	158% (P=32mm)	ED WL	313.01
						HWL	313.25

R <sub>T</sub>	Q <sub>in</sub> (@Tc)	Q <sub>pre</sub> (target)	Q <sub>out</sub> m <sup>3</sup> /s	to target	Ext Det m <sup>3</sup>	V <sub>det</sub> m <sup>3</sup>	V <sub>tot</sub> m <sup>3</sup>	HWL
1:2 yr	0.38	0.29	0.02	6%	950	24	974	313.01
1:25 yr	0.83	0.62	0.47	75%	950	343	1293	313.09
1:100 yr	1.23	0.94	0.85	90%	950	524	1474	313.13
1:250 yr	1.62	1.23	1.17	95%	950	663	1613	313.16
freeboard	-	-	2.33	-	950	1050	2000	313.25

The basins will be equipped with a normally-open outlet (discharge) valve that can be closed in the event of a leachate seep, chemical spill or detection of contaminants through ongoing water quality monitoring. Should monitoring detect contamination in the stormwater basins:

- The pond outlet valve can be closed and the source of contamination is identified.
- MECP approval is sought, usually resulting in:
  - The pond being drained using vacuum trucks or a pump,
  - The water taken to a wastewater treatment plant or infiltrated into the waste,
  - The outlet valve is re-opened to resume normal operation.

### 8.2.7 Perimeter Access/Maintenance Road

A perimeter access/maintenance road will parallel the perimeter ditches. This road will be used for disposal vehicles accessing Cells 3 and 4. It will be 2-lanes wide along the north perimeter of the landfill. Near the East Stormwater Basin will be a vehicle turn-around (either a hammer head or a cul-de-sac). A single-lane road will continue from the East Basin counter-clockwise around the south side of the landfill, ultimately connecting to an existing site road at the west side of Phase II/III. Construction of perimeter access roads will follow the proposed phasing schedule described in Section 8.2.2.

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It is expected that the perimeter road will be paved with gravel and/or a combination of recovered material like crushed concrete, crushed glass, and asphalt grindings. It is also possible that other recovered materials, like chipped or ground tires, could be used. Road gradients should be limited to no more than about 8%. Construction of perimeter access roads will follow the proposed phasing schedule described in Section 8.2.2.

During operations, the access road leading to the tipping face will need to be moved or extended periodically. This road too will be gravel or recovered materials. When no longer required, the Town will decide if they wish to recover the road materials.

The Town will maintain these roads to minimize ruts, potholes, and dust. Water or special surface treatments will be used to limit dust as required, though the Town will consider the potential to impact surface water or the groundwater if too much is applied. In winter, site roads required for access will be plowed and sand (without salt) will be used if required. Further, the Town will continue enforcing the site speed limit (20 km/h) to minimize dust and noise while promoting site safety. During detailed design the Town will consult with the St Marys Fire Department to confirm that site access and interior roads meet fire route requirements in accordance with applicable by-law(s).

### **8.2.8 Scale and Public Drop-off Relocation**

When filling begins in Cell 1 (see the development sequence in Section 8.7), the public drop-off area will need to move to allow Cell 2 preparations. An area has been identified on Figure 8-5 for a potential public drop-off area. Like the existing public drop-off area, we assume the new area will include an elevated platform so users can drive to the top and then deposit their wastes into roll-off bins on the lower level. No change in operations for the drop-off area is expected.

Similarly, the access roads will be built as described above in Section 8.2.7. The change in site design means that the scale and scale house will need to be relocated. An approximate location is shown on Figure 8-5. The existing scale and scale house would be moved to new foundations. Operations would remain the same as currently in place.

### **8.2.9 Buffers**

#### **8.2.9.1 Site Buffer**

Within Section 7.0 of O.Reg. 232/98, the MECP specifies the buffer area surrounding the landfill site must be at least 100 m wide at every point, except under conditions in which the buffer area is at least 30 m wide yet allows adequate space for vehicle usage, operations and activities which ensure there is no operation negatively impacting areas outside of this buffer zone. The below descriptions of the buffers (for each direction) around the existing and expanded landfill demonstrate compliance with this regulation.

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For the expansion, the conceptual design (Figure 8-2) includes the following buffer widths:

**North:** The buffer varies from a minimum of approximately 60 m to greater than 100 m. The buffer is adequate to install the perimeter road and ditch as well as maintain or upgrade the existing leachate collection system's perimeter facilities (if required). The proposed expansion does not change the site's existing buffer and remains sufficient to prevent impacts on future use of adjacent land.

**East:** The eastern waste footprint is 96 m from the site's eastern property boundary. This provides space for the required perimeter facilities and the 'East-Basin' stormwater management pond. As the adjacent land is used by St. Marys Cement and is licensed for aggregate extraction, this buffer distance is sufficient to prevent impacts on future use of the adjacent land.

**South:** The existing Phase II/III footprint is approximately 30 m from the southern property line. Expansion Cell 4 is similarly offset 30 m from the southern boundary at the Cell's western extent. Moving east along the Cell 4 limit of fill, the offset grows slightly to 35 m. This tapering of the Cell 4 buffer allows space for the interior (landfill) and exterior (surface drainage from off-site) ditches to increase in capacity as they flow eastward and capture a larger drainage area. This buffer is sufficient to minimize negative effects on the current agricultural and future aggregate extraction land uses to the south of the landfill site.

**West:** The 60 m wide existing buffer between the property line and the Phase I and Phase II/III footprints will remain. As with the other buffer dimensions, this provides sufficient space for perimeter facilities as well as the existing site access road, scale, and scale house. All sensitive receptors are located west of the site along Water St. S. Table 9.1 details minimal effects from landfill operations on these residents.

In all directions, and at all points, the buffer meets or exceeds the requirements of O.Reg. 232/98.

### **8.2.9.2 Landscaping and Visual Buffers**

The following describes the existing and conceptual design requirements for visual buffer of the expanded landfill.

**North:** This sides of the site is visible from the St. Marys Cement property, an industrial operation. Some trees will be planted in strategic areas to soften the visual impact of the expanded landfill.

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**East:** As with the North side, this sides of the site is also visible from the St. Marys Cement property. Some trees will be planted in strategic areas to soften the visual impact of the expanded landfill.

**South:** This is farm land that is licensed for aggregate extraction. The southern boundary is partially visible to the public travelling north along Perth Road 123 (which becomes Water Street South as it crosses into St. Marys). Berms or tree plantings will be added to the south slope of Cells 1 and 4, or in the buffer area between the waste footprint and the property line, to soften or eliminate views of the operation.

**West:** The site is already well screened on the west property boundary by berms that are treed. No changes are anticipated.

The landscaping efforts to implement the above visual buffers is included in the expansion design and coordinated to allow sufficient time for tree growth. If required, berm(s) will be installed at the perimeter of the waste footprint (inside the property line) or built progressively as Cells are developed.

### 8.3 Ongoing Consultation and Other Approvals

In addition to approval under the *Environmental Assessment Act*, approvals under several provincial statutes may also apply. Table 8-4 identifies many of the approvals and the rationale or reason why they are required. Additional approval requirements may be identified during detailed design. In the course of obtaining these other approvals there will be on-going consultation with regulatory agencies, Indigenous communities and the public. Some of these consultation requirements are typical as part of on-going approval processes and some are at the request of GRT members and in response to comments raised (see Appendix F Comments with Respect to the August 2021 EA). In particular:

- During detailed design and in accordance with approval requirements relevant regulatory agencies will be engaged for pre-submission consultation meetings and in the review and approval of reports and permit applications.
- During detailed design, the Town will consult with utilities including Hydro One and Union Gas to confirm there are no effects to infrastructure in the vicinity of the site.
- During detailed design, the Town will consult with IAAC should details for design aspects of the Project change such that the Project may include physical activities that are described in the Physical Activities Regulations under the Impact Assessment Act.
- During detailed design, the Town will contact the NDMNRF should there be any potential need for a permit under the Petroleum Wells & Oil, Gas and Salt Resource

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Act, Public Lands Act or Lakes and Rivers Improvement Act. Obtain approvals as required.

- During detailed design, an Indigenous Consultation Plan will be developed to direct consultation with Indigenous communities throughout the remainder of the detailed design, operations and closure/post-closure phases. At a minimum it will include:
  - Opportunities for Indigenous communities to review the detailed design documents and reports required for other approvals;
  - Meetings between the Town and interested Indigenous communities to discuss opportunities for involvement of community members, accommodations, and mutual benefits including opportunities to participate in field monitoring during construction and operation;
  - Town led landfill tours offered to interested Indigenous communities;
  - The Town will notify Indigenous communities if there are changes to the landfill’s ECA throughout the operational period and if there are any emergency or spill-related situations that pose a risk to the Thames River; and
  - The Town will notify interested Indigenous communities of the landfill’s closure and post closure monitoring plans.
- At the end of detailed design and more than 10 days before the start of construction, the Town will notify the DFO and keep the DFO letter dated October 4, 2021, and/or any subsequent letters and approvals on site during the construction period to ensure all noted mitigation measures are implemented.
- During operations, the Town will share updated Annual Monitoring reports with relevant Regulatory agencies and Indigenous communities.

**Table 8-4: Required Approvals and Rationale**

<b>Approval</b>	<b>Rationale</b>
Environmental Protection Act	Approval required for expanded landfill, per O. Reg. 232/98. As part of the application process an updated Design & Operations Report will be prepared which will guide site operations.
Ontario Water Resources Act	Approval required for revised site surface water management system.
Conservation Authorities Act	Work within a UTRCA Regulated Area including the realignment of the watercourse and outlets from the new stormwater ponds.
Endangered Species Act	Registration of impacted Eastern Meadowlark habitat under O. Reg. 242/08, Section 23.2 of the Endangered Species Act.
Fisheries Act	In-water work within a watercourse that could potentially cause a HADD to downstream fish habitat in the Thames River.
Fish and Wildlife Conservation Act	Wildlife Scientific Collector Authorization for potential wildlife relocation during construction (i.e., turtle, snake, etc.).

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## 8.4 Complaint Response Framework

The Town has an existing Complaint Response Framework which will be reviewed and updated, as required, for the continued operation of the expanded landfill. The Framework will follow the current ECA's Condition 21, provided here as an example:

*21.1 If the Owner receives complaints regarding the operation of the Site which are environmental in nature, or have caused, or are likely to cause, a negative impact to the environment or human health or safety, the Owner shall respond to these complaints according to the following procedure:*

- (a) The Owner shall record each complaint and the information recorded shall include:
  - (i) the date, time and nature of the complaint;*
  - (ii) the name, address and telephone number of the complainant if provided;*
  - (iii) the activities taking place on Site at the time of the complaint; and (iv) meteorological conditions;**
- (b) The Owner, upon notification of the complaint shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and*
- (c) The Owner shall retain on-Site a report written within one (1) week of the complaint date, listing the actions taken to resolve the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the reoccurrence of similar incidents.*

In keeping with the Town's current practice, complaints and subsequent communications will be reported as part of the updated Annual Monitoring Program. As part of the updated annual monitoring, review of complaints may lead to recommendations to modify site operations or operating plans. In some cases, modifications may require amendments to the site's ECA or other approvals.

## 8.5 Emergency Response and Communications Plan

The existing Emergency Response and Communications Plan will be reviewed and updated, as required during the detailed design phase. The revised plan will be in place before construction begins and will include:

- Spill prevention
  - Spills or depositions into watercourses shall be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan.

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- A hydrocarbon spill response kit shall always be on Site during the work.
- Spills shall be reported to the Ontario Spills Action Centre at 1 800 268-6060.
- Fire prevention
- Protocols for accidents and injuries of staff and site users
- A list of site safety equipment and supplies (i.e., eye wash station, bandages, etc.)
- Contingency plans
- Emergency contact phone numbers (911, local hospital, fire, senior Town staff, etc.)
- Reporting protocols
  - Within/among site and Town staff
  - To external agencies (i.e., MECP)
  - In emergency situations (i.e., fires or calling paramedics/EMTs)
- Permit and Approval requirements
- A training program for how site staff and contractors are to apply the plans
- Ongoing reviews to strengthen effectiveness and ensure continuous improvement.

The Emergency Response and Communications Plan is to be reviewed and updated at least annually. New site staff and contractors working at the site must be made aware of the Plan.

## **8.6 Construction Activities**

Site construction activities would likely include one or more of each of the following equipment: excavator, wheel tractor scraper, bulldozer, construction truck, and a compactor, along with vehicles arriving for on-site delivery of materials. Construction will occur in relatively short bursts (likely two-three months at a time) and will occur while landfill operations are on-going.

Construction is required to prepare for each cell's operation (except Cell 1) and for site closure at the end of the planning period. Some post-closure construction efforts will occur, usually focused on small areas of the site to address settlement, cover erosion or desiccation, or a leachate seep. These activities normally take less than a day to address.

The construction sequence for preferred Alternative 3A is discussed in the next section.

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## **8.7 Landfill Expansion Development Sequence**

This section describes the incremental development sequence for the landfill expansion. For the conceptual Alternative 3A design, the phasing sequence and size of cells have been chosen to:

- Minimize the visibility of landfill operations from the nearest residential neighbours;
- Allow for the construction of subsequent cells and expansion/modification to leachate collection systems
- Allow for progressive application of final cover;
- Allow for the construction of on-site access roads; and
- Optimize on-site traffic.

The development sequence assumes the first two cells will be constructed above and between Phase I and Phase II/III. Following this, Cells 3 and 4 will be constructed horizontally from the existing footprint, eastward in direction.

Site preparation work in advance of Cells 3 and 4 will involve:

- Relocating existing site infrastructure; scale and scale house, perimeter roads and ditches, the public drop-off area, composting area, soil (cover) stockpile, and stormwater management ponds.
- Decommission monitoring wells impacted by the waste footprint and perimeter facilities and install new monitoring wells.
- Realignment of the watercourse
- Excavation and grading of the horizontal expansion footprint.
- The excavated soils will be temporarily stockpiled for use during construction of perimeter infrastructure or for operation of the expansion area. Some of these soils can be used as operational and closure cover for the existing waste footprint.

The following sections describe the operation of each cell and the construction activities occurring concurrently to prepare for future cells. The first section describes the interim filling which has occurred while approval for this EA has been sought.

### **8.7.1 Interim Operations (Above Phase II/III)**

The site has been operating under interim approvals since approximately 2017. This filling has occurred above the existing Phase II/III footprint (future Cell 1). This filling is ongoing and has been accommodated using existing site infrastructure. Operation will continue under Interim ECA's until the EA is complete and required approvals are received. Table 8-5 summarizes the interim operating period through September 2022,



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the annual rate of fill, and the currently approved (total) site capacity (i.e., Phase I, Phase II/III, and interim operations).

**Table 8-5: Interim Fill Quantities**

<b>Approximate Duration of Fill Activity</b>	69 months (Jan. 2017 through Sep. 30, 2022)
<b>Average Annual Fill Rate (m<sup>3</sup>/yr)</b>	10,728
<b>Total Approved Capacity<sup>†</sup> (m<sup>3</sup>)</b>	453,050

<sup>†</sup> Total approved site capacity obtained through interim ECA approvals (see Section 3.1.8.3).

**8.7.2 Cell 1 (Filling Above Phase II/III)**

Cell 1 is the first post-EA expansion cell and will be an entirely vertical expansion (i.e., no new footprint will be consumed for this cell) over the existing Phase II/III. Table 8-6 summarizes the anticipated operating life and capacity for Cell 1.

**Table 8-6: Cell 1 Fill Quantities**

<b>Approximate Duration of Fill Activity</b>	~55-60 months
<b>Cell Area</b>	4.48 ha
<b>Average Annual Fill Rate (m<sup>3</sup>/yr)</b>	15,687
<b>Total Cell Capacity (m<sup>3</sup>)</b>	165,000

**Construction**

- The following construction activities, shown on Figure 8-6, are assumed to take place during operation of Cell 1.
- Construct Cell 1 southern perimeter berm / infrastructure.
  - Requires some temporary ditching and access road work east of Cell 1.
- Begin off-line watercourse realignment.
- Relocate public drop-off to west of existing footprints.
- Leachate system upgrades/integration:
  - Install leachate collector pipes in valley between existing Phase I and Phase II/III, connect into existing system.
  - Tie into manholes or convert them to clean-out pipes and extend vertically.
- Construction activities discussed above will include general earthworks and granular placement (if applicable) which is expected to be completed by excavators and dozers, with dump trucks used to deliver and relocate materials.
- Upgrades and integration of the leachate collection system will not require special equipment other than for digging trenches (suitable equipment will likely already be

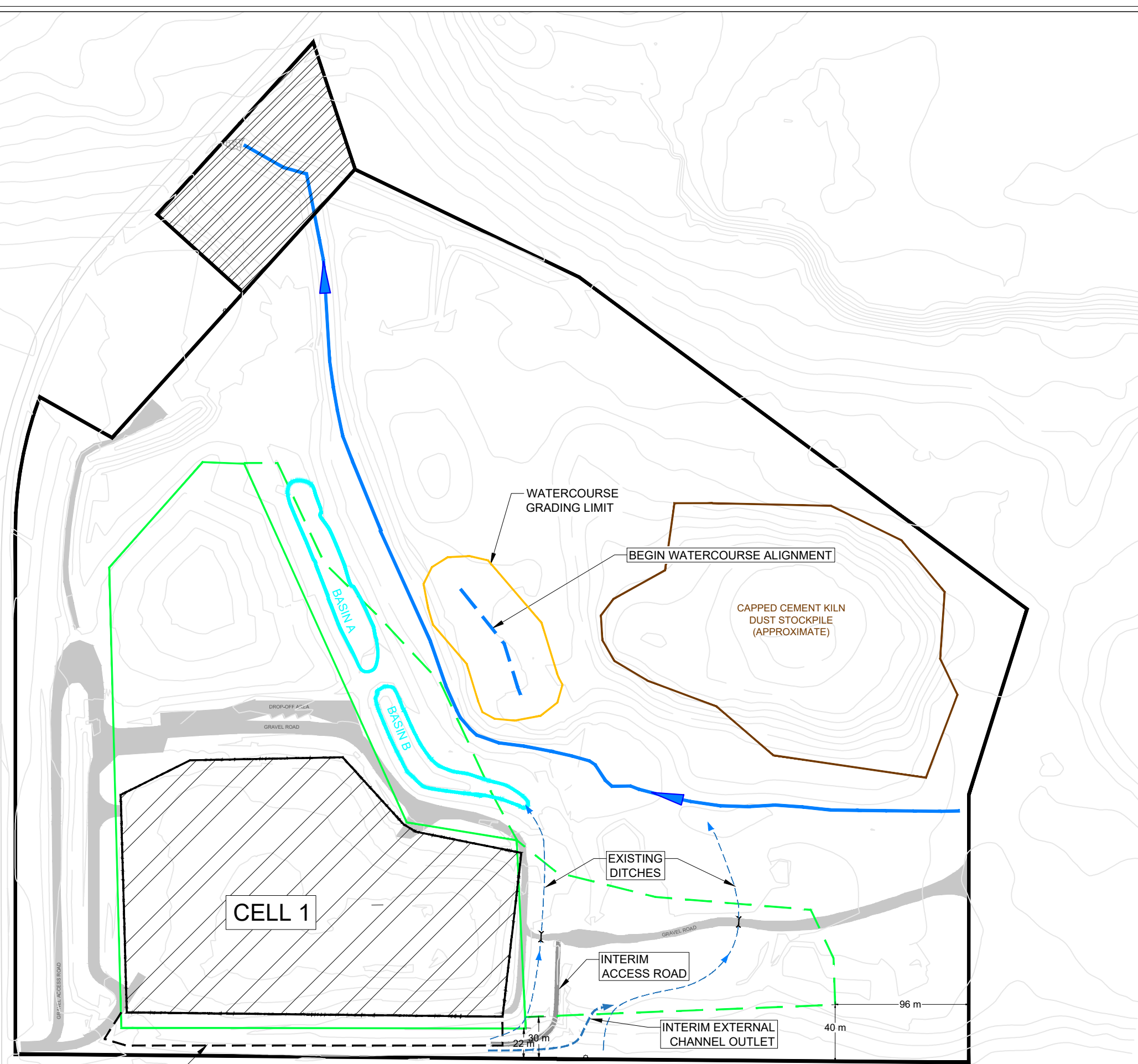
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on-site). Construction practices will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).

### **Operation**

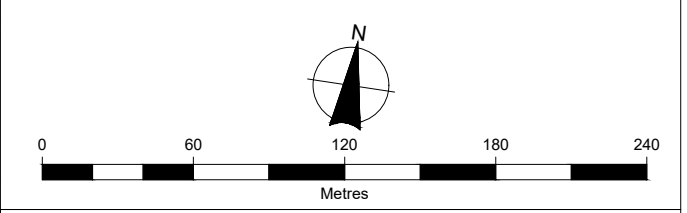
Operation of Cell 1 will be the same as the operations described in Section 8.1. Filling of Cell 1 will begin in the northern portion of the cell to allow future construction of the southern berm and facilities (see Figure 8-6). The existing monitoring program (operational and environmental monitoring) will continue during operation of Cell 1, plus any future monitoring programs associated with expansion. Final cover will be applied to Cell 1 in areas which have reached final contours. Operation of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).

Cell 1 closure will be completed progressively as final fill contours are achieved. Generally, the south and west limits of the Cell 1 footprint will receive final cover. The north and east sides will receive operational or interim cover so that future filling in Cells 2, 3 and 4 does not require removal of the final cover.



**LEGEND**

	PROPERTY LINE
	APPROXIMATE CKD PILE COVER LIMIT
	EXISTING WATERCOURSE
	PROPOSED WATERCOURSE ALIGNMENT
	EXISTING REFUSE LIMIT
	EXPANSION REFUSE LIMIT
	EXISTING CONDITIONS CONTOURS (1m)
	PROPOSED WASTE CONTOURS (2m)
	RIGHT-OF-WAY AND SEWER EASEMENT
	STORMWATER BASIN



Client			
<b>TOWN OF ST. MARYS</b>			
Figure Title			
<b>ALTERNATIVE METHOD 3A</b> CELL 1 DEVELOPMENT			
Drawn	Checked	Date	Figure No.
ZM	JH	JULY 2022	
Scale	Project No.		<b>8-6</b>
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### 8.7.3 Cell 2 (Filling Above Phase I to Cell 1)

Development of Cell 2 is outlined below. Table 8-7 summarizes the anticipated operating life and capacity.

**Table 8-7: Cell 2 Fill Quantities**

<b>Approximate Duration of fill activity</b>	~91-96 months
<b>Cell Area (includes overlap of Cell 1)</b>	3.46 ha
<b>Average Annual Fill Rate (m<sup>3</sup>/yr)</b>	17,017
<b>Total Cell Capacity (m<sup>3</sup>)</b>	133,000

#### Construction

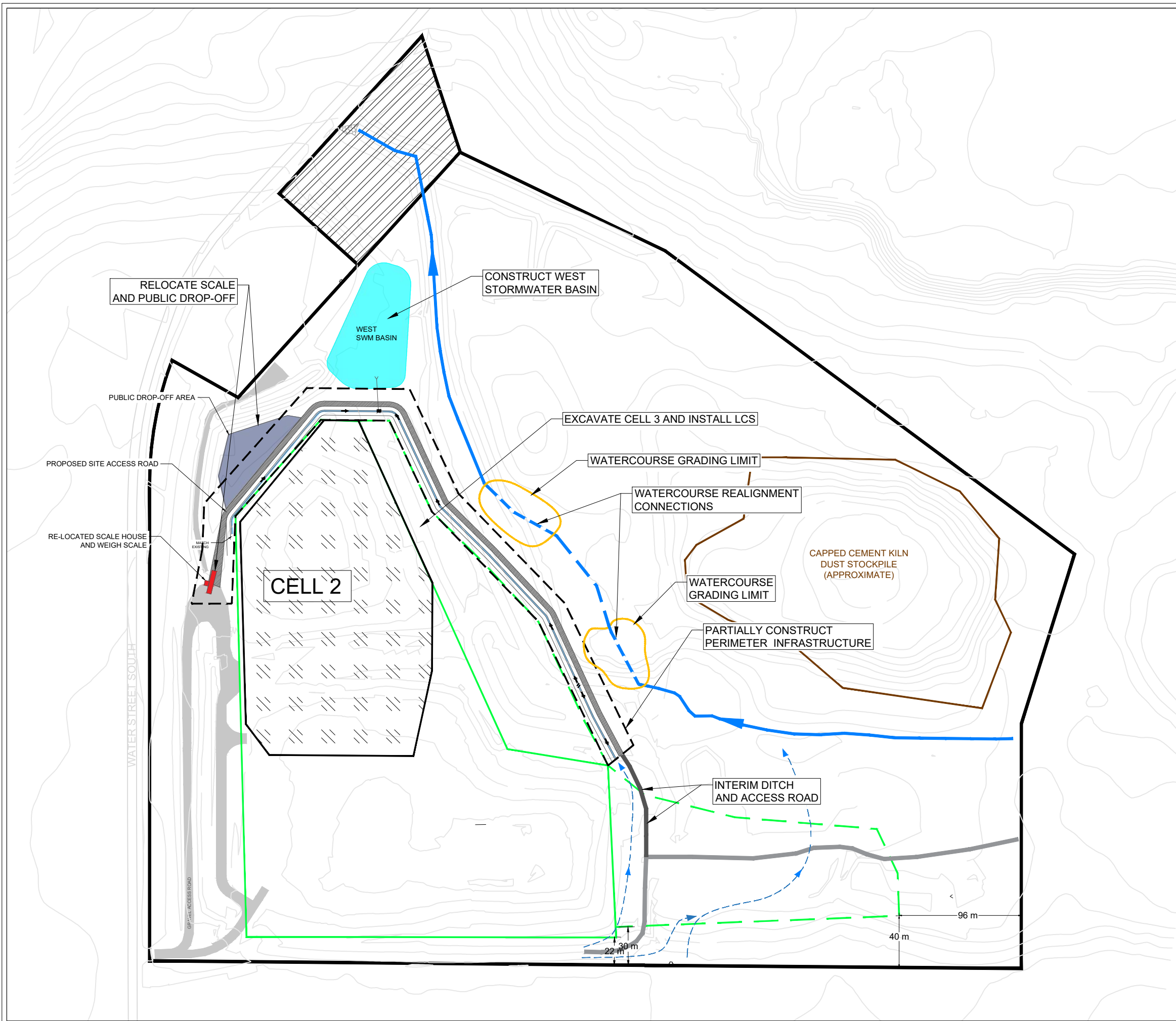
- The construction activities shown on Figure 8-7 will take place during operation of Cell 2.
- Cell 3 below grade excavation.
  - Requires completion of watercourse realignment.
- Construction of perimeter infrastructure from Cell 2 southward to the eastern edge of Cell 4.
- Construct West Stormwater Basin, connect to on-site ditching and watercourse.
- Use excavated materials to back-fill portions of stormwater basin A & B.
- Relocate scale and scale house to match perimeter road alignment.
- Installation of lateral leachate collector pipes in base of Cell 3.
- Apply final cover to Cell 1 in areas which meet final waste contours (this is a component of general operations).
- Construction activities discussed above will include general earthworks and leachate collection system granular placement. Site construction activities would likely include one or more of each of the following equipment: excavator, wheel tractor scraper, bulldozer, construction truck, and a compactor, along with vehicles arriving for on site delivery of materials. Upgrades and integration of the leachate collection system will not require special equipment other than for digging trenches (suitable equipment will likely already be on-site).

#### Operation

- Operation of Cell 2 will be the same as the operations described in Section 8.1. Filling of Cell 2 will begin in the northern and western portion of the cell first, to allow for any remaining construction activities to occur (such as relocation of the drop-off depot). Operation of Cell 2 will include the existing monitoring required for the site (operational and environmental monitoring) as well as any future monitoring

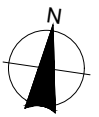
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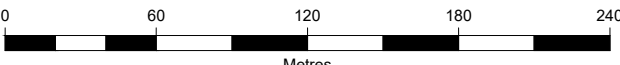
programs associated with expansion. As part of site operations, closure cover will be applied to the areas of Cell 1 and Cell 2 that have reached final contours. Operation of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).




**LEGEND**

- PROPERTY LINE
- APPROXIMATE CKD PILE COVER LIMIT
- EXISTING WATERCOURSE
- PROPOSED WATERCOURSE ALIGNMENT
- EXISTING REFUSE LIMIT
- EXPANSION REFUSE LIMIT
- EXISTING CONDITIONS CONTOURS (1m)
- PROPOSED WASTE CONTOURS (2m)
- RIGHT-OF-WAY AND SEWER EASEMENT
- PROPOSED STORMWATER BASIN (APPROXIMATE)
- ACCESS ROAD
- LANDFILL DITCH





0      60      120      180      240  
Metres

			
Client <b>TOWN OF ST. MARYS</b>			
Figure Title <b>ALTERNATIVE METHOD 3A CELL 2 DEVELOPMENT</b>			
Drawn ZM	Checked JH	Date JULY 2022	Figure No. <b>8-7</b>
Scale 1:3000		Project No. 300032339	

File: Shared Work Areas (I:\pops)\E:\032339 - St. Marys Waste\CIVIL\04\_MiscDwg\032339 Figure 8-2 and 8-6 to 8-9.dwg Date Plotted: September 6, 2022 - 4:58 PM

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**8.7.4 Cell 3 (Eastward Horizontal Expansion)**

Development and operation of Cell 3 will proceed as described below. Table 8-8 summarizes the anticipated operating life and capacity.

**Table 8-8: Cell 3 Fill Quantities**

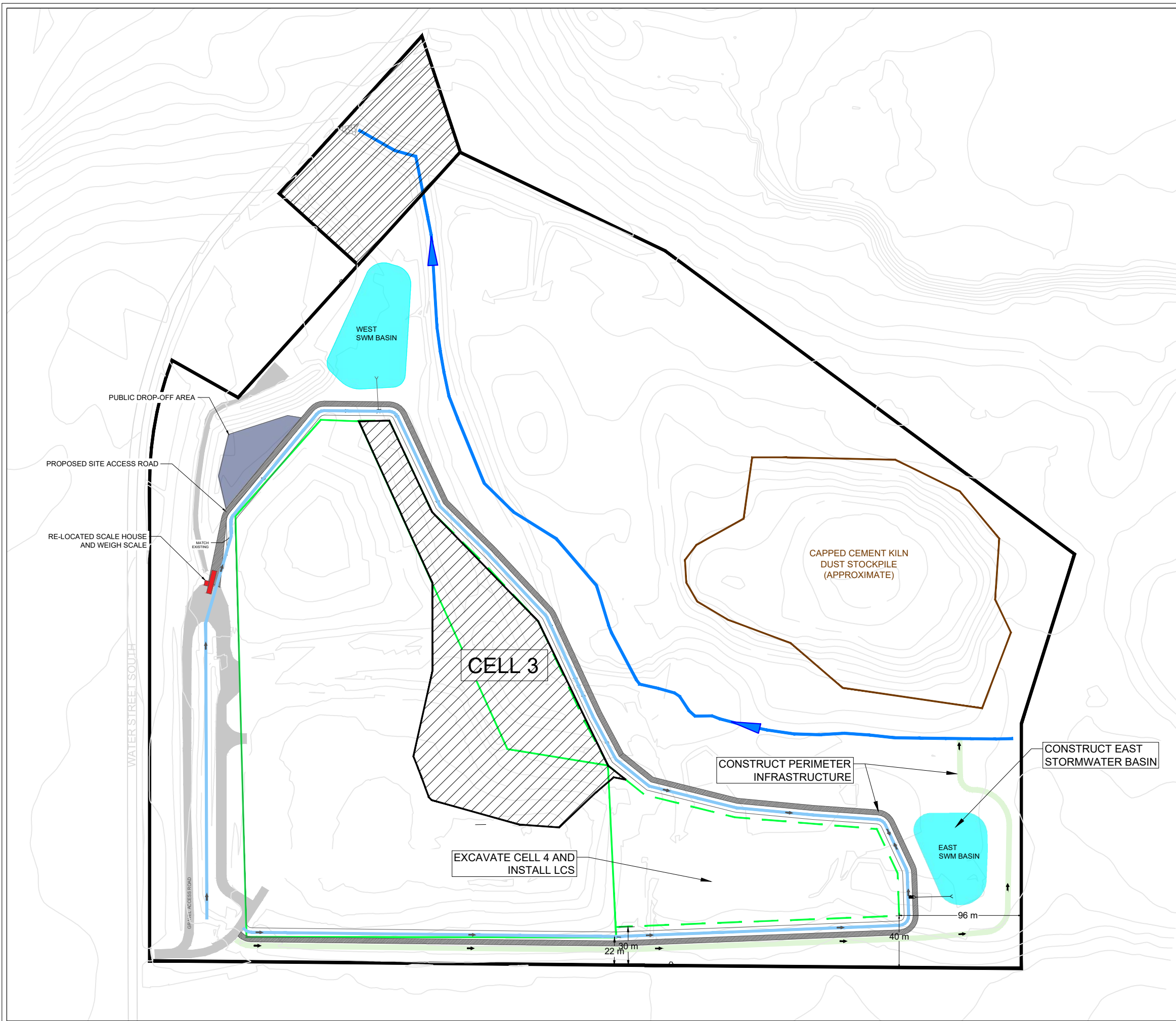
<b>Approximate Duration of fill activity</b>	~139 – 144 months
<b>Cell Area (includes overlap of Cell 1 &amp; 2)</b>	3.17 ha
<b>Average Annual Fill Rate (m<sup>3</sup>/yr)</b>	19,088
<b>Total Cell Capacity (m<sup>3</sup>)</b>	231,000

**Construction**

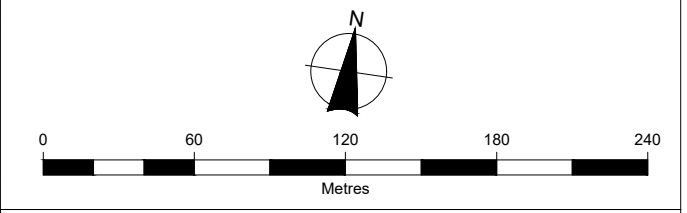
- The construction activities shown on Figure 8-8 will take place during operation of Cell 3.
- Excavate Cell 4 below grade footprint.
- Install lateral leachate collector pipes in Cell 4, connect to main collection pipe in Cell 3.
- Construct remaining perimeter road and ditching around Cell 4, plus external drainage channel.
- Construct East Stormwater basin, tie into on-site ditching and watercourse.
- Construction activities during Cell 3 operation will include general earthworks and granular placement (if applicable). Site construction activities would likely include one or more of each of the following equipment: excavator, wheel tractor scraper, bulldozer, construction truck, and a compactor, along with vehicles arriving for on site delivery of materials. Upgrades and integration of the leachate collection system will not require special equipment other than for digging trenches (available on-site equipment can be used).

**Operation**

- Operation of Cell 3 will be the same as the operations described in Section 8.1. Filling of Cell 3 will begin in the northern portion of the cell. This will allow construction of the southern berm and facilities. Operation of Cell 3 will include the existing monitoring required for the site (operational and environmental monitoring) as well as any future monitoring programs associated with expansion. As part of site operations, closure cover will be applied to Cells 1 through 3 in areas which have reached final contours and will not accept waste further. Operation of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).



LEGEND	
	PROPERTY LINE
	APPROXIMATE CKD PILE COVER LIMIT
	EXISTING WATERCOURSE
	EXISTING REFUSE LIMIT
	EXPANSION REFUSE LIMIT
	EXISTING CONDITIONS CONTOURS (1m)
	PROPOSED WASTE CONTOURS (2m)
	RIGHT-OF-WAY AND SEWER EASEMENT
	PROPOSED STORMWATER BASIN (APPROXIMATE)
	EXTERNAL DRAINAGE CHANNEL
	ACCESS ROAD
	LANDFILL DITCH



Client  
**TOWN OF ST. MARYS**

Figure Title  
**ALTERNATIVE METHOD 3A**  
**CELL 3 DEVELOPMENT**

Drawn ZM	Checked JH	Date JULY 2022	Figure No. <b>8-8</b>
Scale 1:3000	Project No. 300032339		



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### 8.7.5 Cell 4 (Eastward Horizontal Expansion)

The final cell to be developed under the preferred Alternative 3A is Cell 4, shown on Figure 8-9. Table 8-9 summarizes the anticipated operating life and capacity.

**Table 8-9: Cell 4 Fill Quantities**

<b>Approximate Duration of fill activity</b>	~ 103 – 108 months
<b>Cell Area (includes overlap of Cell 1 &amp; 3)</b>	2.27 ha
<b>Average Annual Fill Rate (m<sup>3</sup>/yr)</b>	21,518
<b>Total Cell Capacity (m<sup>3</sup>)</b>	176,000

#### Construction

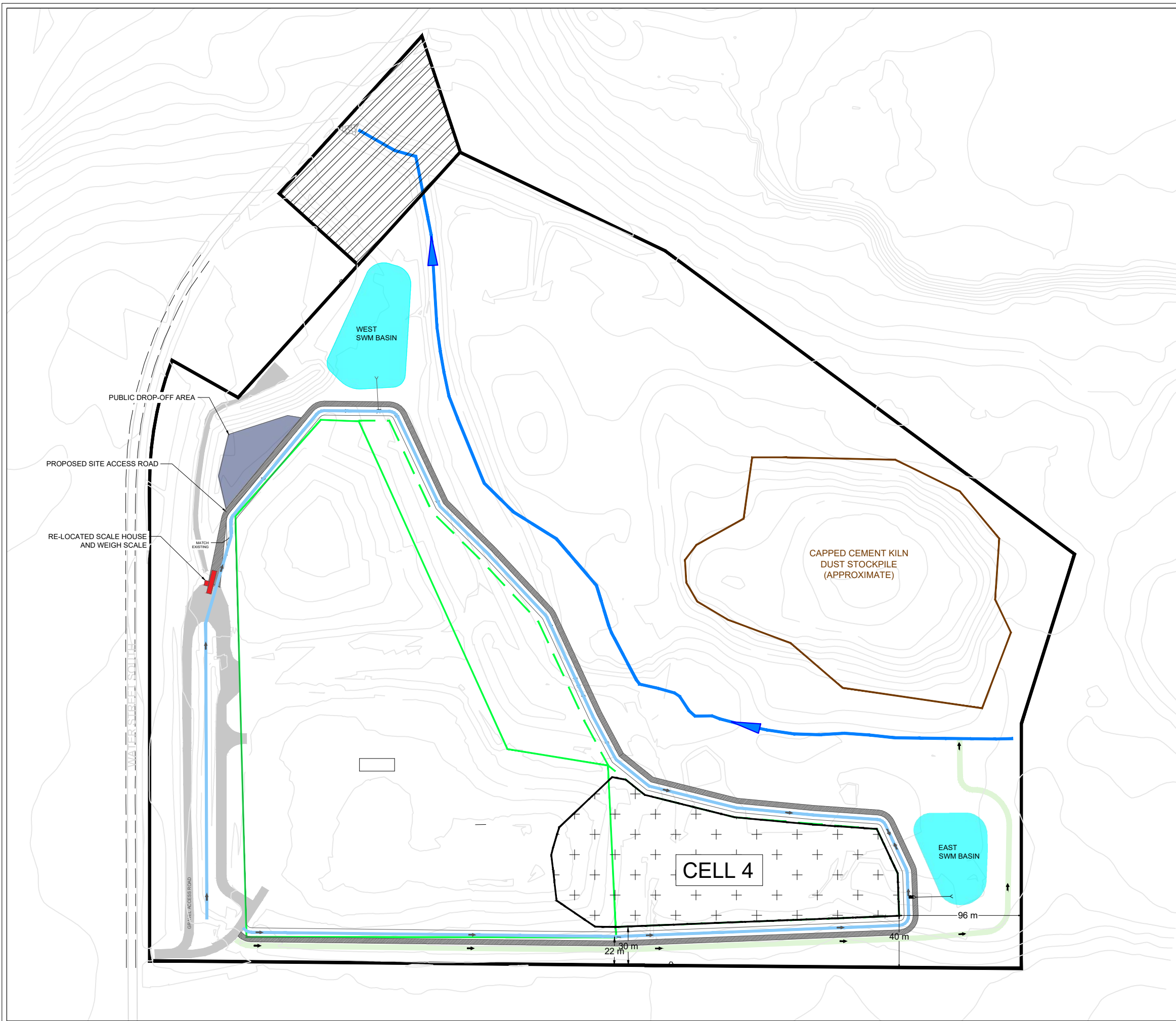
- Preparation for operation of Cell 4 will have been completed just before Cell 3 operations are complete (i.e., Cell 3 capacity has been consumed). The only construction to occur during Cell 4 operation (filling) is to place final closure cover above the portions of Cell 3 that have reached final contours. Final closure cover placement will involve construction truck(s), a bulldozer and a compactor.
- Following the end of waste filling in Cell 4, the remainder of the final closure cover will be placed for the site. See “Closure” below.

#### Operation

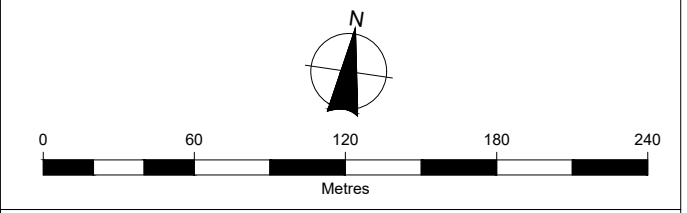
Operation of Cell 4 will be the same as the operations described in Section 8.1. The operating area is shown on Figure 8-5d. Filling of Cell 4 will begin in the western portion of the cell first. Operation of Cell 4 will include the existing monitoring required for the site (operational and environmental monitoring) as well as any updated monitoring programs associated with expansion. As part of site operations, closure cover will be applied to the entire site in areas which have reached final contours and will not accept waste further. Operation of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives).

### 8.7.6 High Level Closure and Post-Closure Care

At least two years prior to the closure of the landfill site a Closure Plan will be prepared and circulated to MECP in accordance with the ECA for site operations. At the end of the Planning Period, once the site accepts the final load of waste, the entire site will be closed in accordance with O.Reg. 232/98. Closure of the site will be subject to the mitigation methods and standard operating practices described in Table 7-2 (Standard Mitigation and Operating Practices Common to All Alternatives). Infrastructure facilities such as the composting facility, public drop-off and scale/scale-house can remain in operation. The Town will develop an after-use plan which will identify uses for the site such as naturalization, continued use as a transfer station, conversion to a park, etc.



LEGEND	
	PROPERTY LINE
	APPROXIMATE CKD PILE COVER LIMIT
	EXISTING WATERCOURSE
	EXISTING REFUSE LIMIT
	EXPANSION REFUSE LIMIT
	EXISTING CONDITIONS CONTOURS (1m)
	PROPOSED WASTE CONTOURS (2m)
	RIGHT-OF-WAY AND SEWER EASEMENT
	PROPOSED STORMWATER BASIN (APPROXIMATE)
	EXTERNAL DRAINAGE CHANNEL
	ACCESS ROAD
	LANDFILL DITCH



Client  
**TOWN OF ST. MARYS**

Figure Title  
**ALTERNATIVE METHOD 3A**  
**CELL 4 DEVELOPMENT**

Drawn ZM	Checked JH	Date JULY 2022	Figure No. <b>8-9</b>
Scale 1:3000	Project No. 300032339		

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#### **8.7.6.1 Post-Closure Care**

Post-closure care occurs following the full closure of site (i.e., after completing Cell 4). During the Post-Closure Care period, the site and its facilities will be monitored and inspected. Site facilities such as the final cover, leachate collection system, ditches, culverts, and stormwater management ponds will be inspected and repaired as required. The updated monitoring program will include monitoring of groundwater (including leachate), surface water and landfill gas. Should any of the monitoring activities detect issues, then contingency plans will be implemented to address the concern. All monitoring and post-close care efforts will be documented in Annual Monitoring Reports.

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## 9.0 Potential Impacts, Mitigation Measures, and Net Effects

This section documents the detailed assessment of the preferred Alternative 3A. The detailed assessment includes the description of predicted effects, mitigation measures and net effects for the Preferred Alternative.

Construction, operation and closure of the landfill expansion are anticipated to affect the natural, cultural, social and built environments. Many of the predicted effects will be mitigated through the standard mitigation and operating procedures outlined in Table 7-2. The evaluation carried out in Section 7.0, identified several additional mitigation measures that will be required. A summary of all predicted effects and mitigation measures is provided in Table 9-1.

A comprehensive list of all standard and additional impacts and mitigation measures is provided in Table 9-1. Some of the impacts and mitigation measures identified in Section 7.0 have been updated based on the more detailed description of the Preferred Alternative, provided in Section 8.0.

Some of the mitigation identified is only required as a contingency if unexpected effects arise. For example, if a leachate seep occurs, the Adaptive Management framework will be triggered. Additional studies during detailed design as well as regular monitoring programs are key in identifying when Adaptive Management may be required. Additional details regarding the Adaptive Management Plan are provided in Section 11.3.

As part of the Environmental Protection Act approvals that will be sought after EA approval, some technical studies will be updated with additional detail as the design of the landfill expansion is finalized. Some technical studies and updates are at the request of GRT members and in response to comments raised (see Appendix F 'Comments with respect to the August 2021 EA Submission'). Other technical studies will be updated only if the landfill expansion extends beyond the existing Town property. A list of the additional studies the Town commits to undertake during the detailed design and approval phase are as follows:

- Updated Hydrogeological Study based on more detailed topographic mapping and landfill design details will be prepared and submitted to MECP and UTRCA. Any new information from new monitoring wells and the meltwater deposits will be incorporated into the design and mitigation measures. The study will also address interactions between the relocated SWM basins and groundwater.
- Re-model potential odour impacts based on the detailed design plans and update plans for additional mitigation, monitoring and contingency measures as required.
- Develop a detailed watercourse realignment plan reflecting principals of Natural Channel Design and relevant mitigation measures previously identified by DFO for approval by DFO and UTRCA.

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- Develop a Stormwater Management Plan for submission to MECP and UTRCA for review. Develop an Erosion and Sediment Control (ESC) Plan in consultation with UTRCA and MECP.
- The Town will update the existing Design and Operations report as part of the ECA application process with the information contained in this EA particularly the mitigative measures outlined in Table 9.1, the commitments in Table 11.1 as applicable and the updated monitoring program and adaptive management plan outlined in Sections 11.2 and 11.3.
- Prepare a Landscape Plan to include restoration and visual buffers.
- Update the Cultural Heritage Resources Assessment with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area. Identify and develop plans for additional mitigation, if required.

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**Table 9-1: Effects, Mitigation Measures and Net Effects**

Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
<b>Air Quality</b>	Changes in air quality due to construction/closure activities	<ul style="list-style-type: none"> <li>Dust may increase during construction and closure.</li> <li>Any dust emissions are expected to be minor and within levels typically expected for construction.</li> </ul>	<ul style="list-style-type: none"> <li>Apply dust suppressants, as required during construction/closure activities.</li> </ul>	<p>Minor net effects anticipated:</p> <p><b>M:</b> Minor. All air emissions are within provincial guidelines</p> <p><b>F:</b> Contaminants and dust will be emitted on an ongoing basis.</p> <p><b>D:</b> Emissions are expected through the construction, operation and closure phases of the landfill.</p>	As part of site operations as defined by the Design and Operations report, staff will be aware of potential site operations issues that may result in nuisance effects. In addition, through the complaint system the Town will monitor off-site nuisance effects and report issues to MECP as part of Annual Monitoring Reports.	None
	Changes in air quality due to landfill operations	<ul style="list-style-type: none"> <li>Air quality contaminant levels at the landfill boundary will be within provincial limits.</li> </ul>	<ul style="list-style-type: none"> <li>Apply daily cover during operations to control landfill gas emissions.</li> <li>Should signs of significant LFG emission become apparent (e.g., significant odour may signify that higher-than-expected emissions are occurring), monitoring for LFG may become necessary. As a contingency measure to be addressed through Adaptive Management, an LFG monitoring program may be required. Subject to findings, additional measures, such as additional cover or LFG collection may be required. If necessary, this will be implemented during the operations phase of the landfill expansion.</li> </ul>	<p><b>R:</b> Air quality effects are reversible but only after landfill closure.</p>	None	Town will report in Annual Monitoring Report if conditions warrant LFG monitoring and propose a monitoring program and how decisions with respect mitigation measures will be made.
<b>Odour</b>	Number of receptors potentially impacted by odour	<ul style="list-style-type: none"> <li>13 receptors may experience odour over 6 OU.</li> </ul>	<ul style="list-style-type: none"> <li>Apply daily cover during operations to control odour.</li> <li>Re-model odour during detailed design. Implement any additional</li> </ul>	<p>Minor net effects anticipated:</p> <p><b>M:</b> Minor – Effect is expected to be low and only slightly</p>		None

<sup>65</sup> Effects associated with air quality, odour and noise were not modelled for Alternative 3A but were assumed to be similar to Alternative 3 and they have approximately the same footprint, height and distance from receptors.

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
	Frequency of odour impacts	<ul style="list-style-type: none"> <li>11 of the receptors will experience odour less than 0.5% of the time.</li> <li>2 of the receptors will experience odour less than 0.8% of the time.</li> </ul>	mitigation, monitoring and contingency measures identified as a result of re-modelling.	<p>higher than existing conditions.</p> <p><b>F:</b> Infrequent – Odour effects are expected infrequently but potentially more often than other Alternatives at two receptors.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>	As part of site operations as defined by the Design and Operations report, staff will be aware of potential site operations issues that may result in nuisance effects. In addition, through the complaint system the Town will monitor off-site nuisance effects and report issues to MECP as part of Annual Monitoring Reports.	None
<b>Noise</b>	Noise levels at receptors as a result of construction/ closure activities	<ul style="list-style-type: none"> <li>Construction and closure-related noise will be higher than current operational noise but within typical expected levels for construction.</li> </ul>	<p>During construction and closure activities</p> <ul style="list-style-type: none"> <li>Keep construction equipment well maintained and in good working order.</li> <li>Limit use of equipment to daytime hours and adhere the Town's Noise By-law.</li> <li>Require contractors to ensure construction activities conform to the criteria set out in Noise Pollution Control (NPC) 115 of 83 dB.</li> </ul>	<p>Minor net effects anticipated:</p> <p><b>M:</b> Minor. All noise is within provincial guidelines at all receptors. However, small increases or decreases may be experienced at a small number of receptors.</p> <p><b>F:</b> Noise will be ongoing during operational hours.</p> <p><b>D:</b> Noise is expected through the construction, operation and closure phases of the landfill.</p> <p><b>R:</b> Noise effects are reversible but only after landfill closure.</p>	As part of site operations as defined by the Design and Operations report, staff will be aware of potential site operations issues that may result in nuisance effects. In addition, through the complaint system the Town will monitor off-site nuisance effects and report issues to MECP as part of Annual Monitoring Reports.	None
	Number of receptors experiencing noise above provincial limit during landfill operations	<ul style="list-style-type: none"> <li>0 residences will experience sound levels above the provincial limit of 55 dBA during the operational phase of the landfill.</li> <li>Maximum noise impact at any receptor is 50 dBA which is significantly below the provincial limit.</li> </ul>	<ul style="list-style-type: none"> <li>Limit use of equipment to daytime hours and adhere the Town's Noise By-law.</li> </ul>		As part of site operations as defined by the Design and Operations report, staff will be aware of potential site operations issues that may result in nuisance effects. In addition, through the complaint system the Town will monitor off-site nuisance effects and report issues to MECP as part of Annual Monitoring Reports.	None

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
	Number of receptors experiencing a change in noise level during landfill operations	<ul style="list-style-type: none"> <li>Two receptors will experience a Significant (-10 and -9 dBA) reduction in noise levels.</li> <li>Three receptors will experience a Noticeable (+3, +3 and +4 dBA) increase in noise levels.</li> <li>One receptor will experience a Significant (+6 dBA) increase in noise levels over existing conditions.</li> <li>Regardless of these changes, the maximum noise impact at any receptor is 51 dBA which is noticeably below the provincial limit.</li> </ul>			As part of site operations as defined by the Design and Operations report, staff will be aware of potential site operations issues that may result in nuisance effects. In addition, through the complaint system the Town will monitor off-site nuisance effects and report issues to MECP as part of Annual Monitoring Reports.	None
<b>Hydrogeology</b>	Risk of Increasing Leachate Generation and Strength	<ul style="list-style-type: none"> <li>Moderate increase in footprint will generate moderate increase in leachate.</li> <li>New waste to be placed above existing landfill, potentially increasing leachate strength.</li> </ul>	<ul style="list-style-type: none"> <li>During operations and post closure, maintain and operate a functional leachate control system (LCS) to capture leachate for treatment at the Town's wastewater treatment plant (WWTP).</li> </ul>	Minor net effects anticipated: <b>M:</b> Minor increase in risk of effects after mitigation.	<ul style="list-style-type: none"> <li>During Operations, maintain a network of groundwater and surface water monitoring wells/stations and report on findings in Annual Monitoring Reports. Implement Adaptive Management Plans based on monitoring results (refer to Section 11.3).</li> </ul>	Annual monitoring to be reported in annual compliance monitoring report.
	Risk of impacting groundwater	<ul style="list-style-type: none"> <li>Increased height over existing landfill area and therefore increased risk of leachate mounding or leachate seeps.</li> <li>Moderate increase in footprint, therefore, moderately sized area for leachate to interact with groundwater.</li> <li>Moderate risk of landfill leachate migrating through a meltwater deposit.</li> </ul>	<ul style="list-style-type: none"> <li>In the case of a temporary WWTP shut-down or short-term lack of capacity in the system, close the LCS discharge and hold leachate in the landfill until treatment can resume at the WWTP.</li> <li>During operations, regularly monitor the site for seepage due to leachate mounding. If a seep occurs that escapes the LCS, follow Spills/Leachate Seep Protocols (refer</li> </ul>	<b>D:</b> Groundwater effects would persist for the contaminating lifespan of the site controlled by the continued operation of the LCS.  <b>F:</b> Leachate generation and risk of groundwater impact is continuous over life of landfill.  <b>R:</b> Effects to groundwater are reversible in the long-term as	<ul style="list-style-type: none"> <li>During closure and post-closure, maintain a network of long-term groundwater and surface water monitoring wells/stations and reporting on findings in</li> </ul>	



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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
	Risk of altering groundwater flow	<ul style="list-style-type: none"> <li>• Low potential for shift of groundwater flow due to the watercourse re-alignment. The small alignment may cause a minor shift in groundwater flow.</li> </ul>	<p>to Section 9.0 and 11.3), including patching seeps, closing outlets in SWM basins (where escaped leachate will collect) and directing contaminated water from the SWM basins to the LCS.</p> <ul style="list-style-type: none"> <li>• During operation and post closure and as a contingency only, if effects from CKD are observed in the realigned watercourse through the Annual Monitoring Program, measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> <li>• Prepare and carry out procedures during post closure including, but not limited to: <ul style="list-style-type: none"> <li>– Operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;</li> <li>– Record keeping and reporting;</li> <li>– Complaint contact and response procedures; and,</li> <li>– Assessing the landfill's contaminating lifespan based on results of groundwater monitoring programs.</li> </ul> </li> </ul>	leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.	Annual Post-Operational Monitoring Reports. Implement Adaptive Management measures based on monitoring results (refer to Section 11.3).	

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
<b>Surface Water Quality</b>	Risk of contaminated runoff reaching surface water	<ul style="list-style-type: none"> <li>• Low risk of runoff or precipitation contacting waste and exiting footprint to reach surface water.</li> <li>• SWM basins A and B will be removed. When valves are opened to release all of the water, there is some risk that contaminated water from the SWM basins could be released into the watercourse and subsequently to the Thames River downstream.</li> </ul>	<ul style="list-style-type: none"> <li>• Install and maintain erosion and sediment control (ESC) measures prior to any earth works and until the site has been stabilized and then remove them.</li> <li>• Inspect ESC measures to confirm they are functioning and are maintained as required. If control measures are not functioning properly, limit work in the area until the problem is resolved.</li> <li>• Apply wet weather restrictions during site preparation and excavation. Avoid work near watercourses during periods of excessive precipitation and/or excessive snow melt.</li> <li>• Refuel and maintain construction equipment within designated areas only.</li> <li>• Handle hazardous materials used for construction in accordance with best practices and O. Reg. 347.</li> </ul>	Low risk of net effect anticipated:  <b>M:</b> Low risk of effect with mitigation and monitoring  <b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.  <b>F:</b> Risk of surface water impact is continuous over life of landfill.  <b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.	<ul style="list-style-type: none"> <li>• During Operations, maintain a network of groundwater and surface water monitoring wells/stations and report on findings in Annual Monitoring Reports. Implement Adaptive Management Plans based on monitoring results (refer to Section 11.3).</li> <li>• During closure and post-closure, maintain a network of long-term groundwater and surface water monitoring wells/stations and reporting on findings in Annual Post-Operational Monitoring Reports. Implement Adaptive Management measures based on monitoring results (refer to Section 11.3).</li> </ul>	Annual monitoring to be reported in annual compliance monitoring report.
	Risk of leachate from seeps reaching surface water	<ul style="list-style-type: none"> <li>• Increased height over existing landfill area and therefore increased risk of leachate mounding and seeping out of waste slopes to surface and then to surface water features.</li> </ul>				
	Risk of contaminants from CKD pile reaching surface water	<ul style="list-style-type: none"> <li>• Low to moderate risk due to proximity of relatively short watercourse realignment closer to CKD pile and low potential to disturb CKD waste.</li> </ul>				

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
	<p>Risk of on-site surface water quality impacting Thames River</p>	<ul style="list-style-type: none"> <li>• Surface water from the site eventually drains to the Thames River and there is a low to moderate risk to on-site surface water quality and therefore a low to moderate risk to the Thames River downstream.</li> </ul>	<ul style="list-style-type: none"> <li>• Store stockpiled material at least 30 m from any waterway to prevent the discharge of deleterious substances into the water.</li> <li>• Immediately contain and clean up spills or depositions into watercourses in accordance with provincial regulatory requirements and the contingency plan. Keep a hydrocarbon spill response kit on-site at all times during construction.</li> <li>• Report spills to the Ontario Spills Action Centre at 1-800-268-6060.</li> <li>• Provide and maintain stormwater control measures to direct, slow and retain water, including: <ul style="list-style-type: none"> <li>– Additional berms against the waste fill area.</li> <li>– Stormwater retention ponds/basins.</li> <li>– Flow control measures for stormwater management ditches (which may include rip-rap or vegetation).</li> <li>– Vegetated buffer areas along waterways.</li> </ul> </li> <li>• As a contingency only, if effects from CKD are observed in the realigned watercourse through the Annual Monitoring Program, measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> </ul>			

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
<b>Surface Water Quantity</b>	Changes to surface water flow	<ul style="list-style-type: none"> <li>Watercourse relocation will alter the flow path for ~230 m through the landfill property.</li> <li>Quantity and location of surface water flow entering and leaving the On-Site Study Area will not change.</li> </ul>	<ul style="list-style-type: none"> <li>Post-construction monitoring of the realigned watercourse will be carried out for 2 years. Any additional mitigation identified at that stage will be implemented, such as: additional bank protection measures, bank and riparian plantings, new substrates etc. as required, in consultation with UTRCA.</li> </ul>	No net effects.	Post construction monitoring of realigned watercourse for 2 years to ensure banks are stable and planted vegetation is surviving will be carried out.	Results of monitoring will be reported in Annual monitoring reports.
<b>Terrestrial Ecology</b>	Impacts to Significant Wildlife Habitats	<ul style="list-style-type: none"> <li>No effects to Monarch butterfly habitat, terrestrial crayfish habitat or turtle overwintering areas are expected.</li> </ul>	<ul style="list-style-type: none"> <li>No mitigation required.</li> </ul>	No net effects.	None	None

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
	Impacts to Habitat of Endangered and Threatened Species	<ul style="list-style-type: none"> <li>A portion of regulated Eastern Meadowlark habitat will be removed.</li> <li>There is potential to create temporary habitats which may attract Bank Swallows which will subsequently be disturbed or destroyed.</li> </ul>	<ul style="list-style-type: none"> <li>Compensate for the loss of Eastern Meadowlark habitat by creating of habitat elsewhere in accordance with the ESA Regulations, or a species conservation charge paid to the Species at Risk Conservation Trust (effective April 29, 2022).</li> <li>Clear vegetation in Eastern Meadowlark habitat outside of the bird nesting season, noted to be April 1 to August 31.</li> <li>Survey site for Bank Swallow habitat prior to any site alteration and contact <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a> for guidance under the <i>Endangered Species Act 2007</i> if Bank Swallow is found to be nesting on site. Should Bank Swallow be found nesting on-site, apply a 50 m buffer around the active nest.</li> <li>Avoid the creation of temporary vertical or near-vertical spoil piles within the landfill and compost pile that are prone to frequent disturbance from landfill construction and operations to reduce the chance of attracting nesting Bank Swallow. Following Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario (MNR, 2017).</li> </ul>	No net effects.	None	None

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
	Impact to other wildlife	<ul style="list-style-type: none"> <li>Any amphibians and turtles present in the watercourse or SWM basins may be affected during construction and relocation of these features.</li> </ul>	<ul style="list-style-type: none"> <li>Clear vegetation outside of the bird and bat nesting/roosting season, noted to be April 1 to September 31.</li> <li>Erect ESC fencing around work areas to prevent wildlife from entering work zones. Relocate wildlife from within work zones, if required. If a SAR species is encountered in a work zone, cease all work in the area and contact MECF for further instruction. Obtain necessary permitting to relocate salvaged wildlife prior to construction.</li> <li>Complete a Tree Inventory and Landscape Plan to include restoration and visual buffers. Replant trees at a 10:1 ratio for trees lost during construction.</li> <li>Conduct a wildlife salvage of the watercourse and SWM basins during dewatering.</li> <li>During closure, reseed grassed areas with native grasses and wildflowers, where possible.</li> </ul>	No net effects	None	None

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<p><b>Aquatic Ecology</b></p>	<p>Impact to aquatic habitat</p>	<ul style="list-style-type: none"> <li>Habitat will be physically altered during watercourse realignment.</li> <li>Low-moderate risk of water quality effects due to potential watercourse/CKD pile interactions.</li> </ul>	<ul style="list-style-type: none"> <li>Design the realigned watercourse using natural channel design principles with an overall result of improved habitat conditions.</li> <li>Naturalize all new and remaining riparian areas with tree, shrub and grass plantings to improve riparian habitat and stabilize stream banks.</li> <li>Avoid in-water work will occur during June and July.</li> <li>Capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas. Dewater gradually to reduce the potential for stranding fish</li> <li>Conduct in-water undertakings and activities during periods of low water levels</li> <li>Limit impacts on riparian vegetation to those approved for the project;             <ul style="list-style-type: none"> <li>Limit access to banks or areas adjacent to watercourse</li> <li>Construct access points and approaches perpendicular to the watercourse</li> <li>Re-vegetate the disturbed area with native species suitable for the site</li> </ul> </li> <li>Restore stream geomorphology (i.e., restore the bed and banks, gradient and contour of the watercourse to its initial state or better;</li> <li>Avoid introducing sediments (e.g., silts, clays and sand) in the water;</li> <li>Develop and implement an erosion and sediment control plan to avoid or minimize the introduction of sediment into any waterbody during all phases</li> </ul>	<p>Minor net effects due to watercourse relocation. Low-moderate risk of net effects due to water quality impairment.</p> <p><b>M:</b> Low risk of effect due to watercourse realignment with mitigation and monitoring/Low-moderate risk of water quality effect due to distance between watercourse and CKD pile.</p> <p><b>D:</b> Habitat alterations will occur only once during watercourse realignment/Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.</p> <p><b>F:</b> Habitat alterations will occur only once during watercourse realignment/Risk of surface water impact is continuous over life of landfill.</p> <p><b>R:</b> Watercourse realignment is not reversible but will result in improved habitat Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p>None</p>	<p>None</p>
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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
			<p>of the work, undertaking or activity; and</p> <ul style="list-style-type: none"> <li>– Conduct all in-water works, undertakings or activities in isolation of open or flowing water to reduce the introduction of sediment into the watercourse</li> <li>– Monitor the watercourse to observe signs of sedimentation during all phases of the work, undertaking or activity and take corrective action</li> </ul> <ul style="list-style-type: none"> <li>• Develop and implement a response plan to avoid a spill of deleterious substances.</li> <li>• As a contingency only, if effects from CKD are observed in the realigned watercourse through the Annual Monitoring Program, measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> </ul>			



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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
<p><b>Built Heritage Resources and Cultural Heritage Landscapes</b></p>	<p>Impacts to Built Heritage Resources and Cultural Heritage Landscapes</p>	<ul style="list-style-type: none"> <li>No BHLs or CHLs are located within the On-site Study Area and therefore no direct effects are expected but this needs to be confirmed.</li> <li>One BHR is located approximately 925m from the landfill site. 11 CHLs are located within 1km of the landfill site. No indirect effects are anticipated, given the distance between the resource and landfill and the existing landscape disturbance in between. This needs to be confirmed.</li> </ul>	<ul style="list-style-type: none"> <li>Construction activities and staging should be suitably planned and undertaken to avoid effects to identified cultural heritage resources.</li> <li>Once the detailed design of the proposed work are available, the CHRA will be updated with a confirmation of effects of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines will be consulted for advice and further heritage assessment work should be undertaken as necessary.</li> <li>Should future work require an expansion of the study area then a qualified heritage consultant will be contacted in order to confirm the effects of the proposed work on potential heritage resources.</li> </ul>	<p>No net effects</p>	<p>None</p>	<p>None</p>

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
<b>Archaeological Resources</b>	Impacts to archaeological resources	<ul style="list-style-type: none"> <li>The On-Site Study Area offers no archaeological potential, given its past and current disturbances. No effects anticipated; however, unexpected resources could be uncovered during excavations.</li> </ul>	<ul style="list-style-type: none"> <li>Contact the Archaeology Program Unit and MHSTCI at archaeology@ontario.ca in the unexpected event that archaeological remains are found during construction activities. Indigenous communities will also be notified if the resources appear to pertain to Indigenous groups.</li> <li>Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to ground disturbing activities</li> </ul>	No net effects	None	None
<b>Local Transportation</b>	Impacts to traffic on Water St. S.	<ul style="list-style-type: none"> <li>The intersection at Water St. S. and the landfill entrance is sufficient to meet traffic demands through 2059 and beyond. No capacity improvements are needed to Water St. S. or the entrance intersection. Therefore, no effects on traffic are expected.</li> </ul>	<ul style="list-style-type: none"> <li>During construction, monitor and repair site access roads and perimeter ditching as necessary.</li> <li>Manage construction traffic and waste collection vehicles to avoid traffic congestion and safety concerns at the landfill entrance on Water St. S.</li> </ul>	No net effects	None	None

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
<b>Sensitive Land Use</b>	Presence of sensitive lands within the study areas	<ul style="list-style-type: none"> <li>No sensitive land uses are present within the On-site Study Area.</li> <li>Sensitive residential and agricultural land uses are present within Study Area Vicinity. Minor effects to sensitive land uses are predicted.</li> <li>Landfilling will not occur any closer to sensitive land uses than occurs during existing operations, therefore, there is no change to effects experienced as a result of landfill expansion.</li> <li>Trees between landfill and farmland to the south will be removed.</li> </ul>	<ul style="list-style-type: none"> <li>A new treeline will be planted along the southern property boundary.</li> <li>Maintain, repair or re-install all existing visual barriers, such as berms or tree plantings to block sightlines after construction.</li> </ul>	No net effects	None	None
<b>Aggregate Resources</b>	Impacts to aggregate extraction and processing	<ul style="list-style-type: none"> <li>No work is required on SMC lands and no change to landfill operations are planned that would indirectly affect extractive land uses or processing operations.</li> </ul>	<ul style="list-style-type: none"> <li>No mitigation required.</li> </ul>	No net effects	None	None

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
<b>Social Conditions</b>	Potential impacts to enjoyment of life and private property associated with the residences along Water St. S.	<ul style="list-style-type: none"> <li>Air quality, noise, litter and vermin-related effects will be minor and not significantly changed from current conditions.</li> <li>Odour may be experienced infrequently at a higher number of receptors than under current conditions.</li> <li>Very minor changes to the view from the south are expected as the existing line of trees along the southern boundary is removed (These trees are currently in a low-lying area and don't provide a significant visual block).</li> </ul>	<ul style="list-style-type: none"> <li>During operations, apply daily cover to control landfill gas emissions, odour, dust, reduce blowing litter and control vermin.</li> <li>Continue to operate the landfill within daylight hours only.</li> <li>Odour will be re-modeled during detailed design. Any additional mitigation identified at that stage will be implemented.</li> <li>Plant a new treeline and visual buffer along the southern property boundary.</li> <li>Maintain, repair or re-install all existing visual barriers, such as berms or tree plantings to block sightlines after construction.</li> <li>Conduct regular inspections by landfill staff to observe, record any operational issues and implement corrective actions, including: <ul style="list-style-type: none"> <li>Fence patrol and litter collection.</li> <li>Cover and vegetation inspections.</li> <li>Erect portable litter fencing.</li> </ul> </li> <li>Continue the existing program to record, investigate, and respond to public complaints and take corrective actions.</li> <li>During operations, monitor cover placement (application quality and placement schedule) to minimize the attractiveness of the Site to vectors <sup>66</sup> and vermin <sup>67</sup> as well as larger animals.</li> </ul>	<p>Minor net effects anticipated:</p> <p><b>M:</b> Minor – Odour effects are expected to be low and only slightly higher than existing conditions. Visual effect is minor as only the view from the south will be affected and the current treeline is topographically low-lying.</p> <p><b>F:</b> Infrequent – Odour effects are expected infrequently but potentially more often than other Alternatives at two receptors. Existing visual break will be removed once.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill. The visual impact will be experienced short-term until the new trees have matured.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed. Changes to the view are reversible with a newly planted visual break.</p>	As part of site operations as defined by the Design and Operations report, staff will be aware of potential site operations issues that may result in nuisance effects. In addition, through the complaint system the Town will monitor off-site nuisance effects and report issues to MECP as part of Annual Monitoring Reports.	None

<sup>66</sup> A *vector* is an organism, such as a mosquito or tick, which carries disease-causing micro-organisms from one host to another.

<sup>67</sup> *Vermin* are various small animals or insects, such as rats, gulls or cockroaches, which are destructive, annoying, or injurious to health.

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Environmental Component	Indicators	Potential Effects <sup>65</sup>	Mitigation Measures	Net Effects	Commitments for Monitoring	EA Compliance Monitoring
<p><b>Indigenous Communities</b></p>	<p>Impacts to culturally or environmentally significant features</p>	<p>Surface water from the landfill eventually drains to the Thames River. There is a low to moderate risk of surface water contamination and, therefore, a low to moderate risk to the Thames River and aquatic habitats within it.</p>	<ul style="list-style-type: none"> <li>• <b>During operations and post closure and as a contingency only, if effects from CKD are observed in the realigned watercourse through the Annual Monitoring Program, measures to separate the watercourse from the CKD will be required.</b> This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.</li> </ul>	<p>Low risk of net effect anticipated:</p> <p><b>M:</b> Low risk of effect with mitigation and monitoring</p> <p><b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.</p> <p><b>F:</b> Risk of surface water impact is continuous over life of landfill.</p> <p><b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved. Minor net effects due to watercourse relocation. Low-moderate risk of net effects due to water quality impairment.</p>	<ul style="list-style-type: none"> <li>• During Operations, maintain a network of groundwater and surface water monitoring wells/stations and report on findings in Annual Monitoring Reports. Implement Adaptive Management Plans based on monitoring results (refer to Section 11.3).</li> <li>• During closure and post-closure, maintain a network of long-term groundwater and surface water monitoring wells/stations and reporting on findings in Annual Post-Operational Monitoring Reports. Implement Adaptive Management measures based on monitoring results (refer to Section 11.3).</li> </ul>	<p>Annual monitoring to be reported in annual compliance monitoring report.</p>

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## 9.1 Climate Change Considerations

The effect of the Preferred Alternative on climate change and the effect of climate change on the Preferred Alternative are discussed below with consideration of the MECP guidance document “Considering Climate Change in the Environmental Assessment Process” (MOECC, 2017).

On-going changes to the global climate related to increased emissions and concentrations of greenhouse gases in the atmosphere are addressed in the conceptual design for the landfill expansion. This section evaluates the effect of increased intensity of storm events, potential effects to leachate generation associated with higher temperatures and increased intensity of rainfall events and snowmelt.

### 9.1.1 Effect of the Undertaking on Climate Change

As noted in Section 7.4.1 (Air Quality), the landfill’s impact on climate change is most directly linked to the fugitive emissions of landfill gas (LFG). This is created by the decomposition of the waste in the landfill. LFG is roughly half carbon dioxide (CO<sub>2</sub>) and half methane (CH<sub>4</sub>) with a small amount of other gasses. LFG is a Greenhouse Gas that contributes to Climate Change (see Section 3.1.3.2). Ontario Regulation 232/98 under the Environmental Protection Act states that landfill sites containing 1.5 million cubic metres (1.5 Mm<sup>3</sup>) of landfill capacity or more are required to install an LFG capture and destruction system. The proposed total capacity of the St. Marys Landfill if the expansion is constructed will remain below this threshold. O.Reg 232/98 recognizes low LFG generation rates, generally associated with low rates of disposal, as a reason to avoid installation of an LFG management system even if the site capacity exceeds the 1.5 Mm<sup>3</sup> threshold. The age of waste already contained within the St. Marys Landfill, the anticipated rate of fill, and thus the ultimate rate of LFG generation, is relatively low. Therefore, on both counts (total capacity and rate of fill), the site does not require an LFG management system.

Ontario’s annual emission rate for GHG’s is approximately 143,000,000 tonnes CO<sub>2</sub>e with approximately 8,500,000 tonnes/year CO<sub>2</sub>e coming from solid waste landfills<sup>68</sup>. The Preferred Alternative for landfill expansion with 708,000 m<sup>3</sup> estimated waste (over the 40-year EA Planning Period) will produce a total of approximately 79,000 tonnes CO<sub>2</sub>e. Averaged over the site’s life, this represents approximately 2,000 tonnes CO<sub>2</sub>e per year, or approximately 0.24% of Ontario’s annual solid waste related GHG emissions and approximately 0.001% of the total annual GHG emissions from Ontario.

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<sup>68</sup> Environment and Climate Change Canada, report, National Inventory Report 1990-2014: Greenhouse Gas Sources and Sinks in Canada.

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The total GHG emission rate for Canada is approximately 732,000,000 tonnes/year CO<sub>2</sub>e with approximately 56,000,000 tonnes/year CO<sub>2</sub>e generated from solid waste and other sources. In the national context, the expanded landfill will contribute approximately 0.004% of Canada's annual solid waste related GHG emissions, or approximately 0.0003% of the country's total annual GHG emissions.

LFG emissions are expected to increase proportionally with the volume of waste landfilled. Based on the LandGEM model, which predicts LFG generated by a site, it is estimated that approximately 1,279 tonnes CO<sub>2</sub>e from LFG was generated at the St. Marys Landfill in 2017. The model projects this will increase to about 2,183 tonnes CO<sub>2</sub>e in 2057, following placement of the last loads of waste at the site. LFG will then begin decreasing again during the site's post-closure period. The progressive placement of the final, low-permeability cover will help control fugitive LFG releases.

There is also potential for methane production in the landfill to decrease over time as a result of the Province's proposed organics disposal ban under Bill 151, Waste-Free Ontario Act. While the Town will not be required to implement the organics ban it is likely that some organics will still be diverted. The current schedule for the proposed organics disposal ban to come into effect remains unknown. If this ban is implemented, the landfill will generate less LFG from the final cells decreasing the overall contribution of fugitive and combustion emissions.

Given recent discussions on greenhouse gases and their effects on Climate Change, there is a general drive in Ontario to lower emissions. In the long run, this may result in the Town installing an LFG system in the future. Such a system may be voluntarily installed based on beneficial economics, community recognition of benefit(s) or to mitigate a currently unanticipated LFG issue. Should signs of significant LFG emission become apparent at the landfill (e.g., significant odour may signify that higher-than-expected emissions are occurring), monitoring for LFG may become necessary. Subject to findings, additional measures, such as additional cover or LFG collection, may be required.

### **9.1.2 Effect of Climate Change on the Undertaking**

Increased severity of storm events, more intense but less frequent rainfall events, and reduced snow cover are the most likely and relevant results of climate change on the design of the Undertaking. The potential effects are largely limited to the design of the SWM infrastructure requiring an increased capture volume for ditches and ponds, as well as additional erosion protection as more intense storm events result in higher flow velocities across the landfill cover, in ditches and swales and at discharge points.

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### *Climate Change and Water Management Infrastructure*

The changes in extreme weather events due to climate change are particularly relevant in the design and surface water management infrastructure. Surface water design elements for the expansion need to address the requirement to divert or control surface water coming onto the site, control runoff discharging from the site, and to control external diversion channels, ditches, and conveyance structures. Generally, stormwater control facilities must be sized to accommodate the peak flow generated from the prevailing Regional Storm Event, as regulated by UTRCA.

The stormwater management system has been designed to meet the water quantity and quality requirements associated with both normal operations and operations under extreme weather events driven by climate change (see Section 8.2.6).

### *Climate Change and Slope Stability*

Climate Change should also be considered in the site's design. It is anticipated that periods of dry weather followed by intense rainfall could result in slope stability issues and cover erosion. Ensuring the maximum slope is no greater than 25% (4 m run for every 1 m rise, or 4:1), as required by O. Reg. 232/98, will help to mitigate this Climate Change effect.

### *Climate Change and Leachate Generation*

There may be changes in the precipitation patterns that result in less frequent yet more intense rain. If this occurs as expected, leachate generation could be reduced. Leachate is generated when precipitation infiltrates the landfill cover and the moisture mixes with the waste below. Infiltration is a function of the steady wetting of the cover and occurs slowly. Intense rain events result in more runoff than infiltration. Further, dry cover soils are more likely to initially resist infiltration, further reducing leachate generation.

Once the landfill reaches its approved capacity, it will be closed and capped in accordance with O. Reg. 232/98. This will further decrease infiltration of precipitation and the leachate volumes generated.

### *Climate Change and Landfill Fill Rates*

As discussed in Section 3.1.3.2, severe weather events influenced by Climate Change can have a direct impact on landfill utilization. These events can result in increased property damages from excessive wind, precipitation or even fires. Subsequently, Climate Change results in an increase in the amount of materials being received at landfills in the form of food waste (i.e., from power outages), clean-up debris, construction and demolition debris and reconstruction scrap.



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In order to assess the potential for waste generation from the Town of St. Marys as a result of Climate Change related severe weather events, the U.S. Army Corps of Engineers debris model for a single Category 1 hurricane was incorporated. This is intended to represent the cumulative effect of more severe storms and resulting damages (disposal needs) that may occur due to Climate Change. Based on the model, approximately 5 months or 1% of additional capacity could be utilized in dealing with the storm debris.

## 9.2 Cumulative Effects

Environmental effects from specific projects do not occur in isolation: other projects and activities in an area may have effects that can combine to create a larger, more consequential effect, or cumulative effect, on those same environments. The following section assesses the potential for cumulative effects resulting from the landfill and other activities and land uses occurring in the Study Area Vicinity.

### Methodology

Cumulative effects were assessed by:

- Identifying the net effects of the Undertaking;
- Describing existing and future land uses in the Study Area Vicinity;
- Assessing how the net effects of the project may combine with the effects of other development to create a cumulative impact; and
- Identifying additional mitigation measures to minimize cumulative effects.

### Net effects of the Undertaking

The net effects of the Project, after mitigation is applied were summarized in Table 9-1. The assessment determined that most of the effects of the landfill expansion can be mitigated and minimized such that no net effects are expected. However, the following net effects may occur:

- Minor increase in air emissions and dust, within provincial limits;
- Minor increase in odour, only slightly higher than existing conditions;
- Minor increase and/or decrease in noise experienced at nearby sensitive receptors, all within provincial limits;
- Minor increase in the risk of groundwater contamination;
- Minor increase in the risk of surface water contamination;
- Minor risk to aquatic habitat, associated with watercourse realignment and the increased risk of surface water contamination;

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- Minor increase in effects to enjoyment of life and private property associated with the residences along Water St. S. This increase is associated with potential air quality, odour and noise effects; and,
- Minor risk of affecting features with cultural or environmental significance to Indigenous communities (i.e., the Thames River). Effects are associated with the increased risk of surface water contamination.

The land fill expansion is not expected to cause net effects with respect to surface water quantity, terrestrial ecology, built heritage resources and cultural heritage landscapes, archaeological resources, local transportation, sensitive land use or aggregate resources. These environmental components are not expected to change over baseline conditions. There is no net effect to combine with other effects occurring in the area. Therefore, these environmental components are not assessed in the cumulative effects assessment.

### **Existing and Future Land Use in the Study Area**

Aggregate extraction associated with SMC has occurred historically, occurs currently and is expected to continue through the life of the landfill expansion to the north, northeast and west. Lands to the immediate south and east fall outside of the Town's limits but are designated as Licensed Quarry Pit/Limestone Resource and Agricultural Lands with a small amount of Natural Resources/Environment adjacent to the Thames River. Lands to south of the landfill are currently and have historically been used for agriculture. A small number of residences are located on the west side of Water St.S. and on the east side of Water St. S., immediately adjacent to the landfill.

The aggregate extraction and agricultural activities have the greatest potential to create conditions which may interact with the landfill and generate cumulative effects. The residential properties are not expected to cause environmental effects at a level that would cause a noticeable cumulative effect when considered in combination with the landfill. Future development or intensification of the residential lands to the west is not expected.

The cumulative effects assessment, therefore, only considers the effects of aggregate extraction and agricultural uses in combination with the landfill. The effects of traffic on Water St. S. were also considered.

The following is assumed with regard to the aggregate extraction activities:

- SMC operates two quarries in the Study Area Vicinity: the quarry and plant directly adjacent to the landfill and the Thomas Street Quarry west of Water St. S.
- SMC has historically dewatered both quarries. They have also used water supply wells on the plant site to provide processing water. Dewatering at the plant site quarry is expected to continue for the life of the landfill since the cement plant is

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located on the quarry floor. Communication with the SMC Environmental Coordinator in 2015 confirmed that there are no plans for future dewatering locations.

- Based on current resources and production assets, the estimated lifespan of the two quarries is approximately 60 years. As such, the quarries will be active during the landfill's entire 40-year operational period.
- Past and on-going operations by SMC have affected and continue to affect baseline conditions and therefore, were considered in the effects assessment contained herein.

The following is assumed with regard to agricultural activities:

- Several farms are located within the Study Area Vicinity. Most are producing cash crops. There is one small barn, approximately 400m to the west of the landfill on 3rd Line. It appears only a small number of animals are housed in this location. Other larger livestock facilities are present outside of the Study Area Vicinity and are not considered as part of this assessment.
- All farms in the Study Area Vicinity are located outside of the St. Marys town boundary and are not within any proposed future development or settlement area expansion. As such, they are expected to be maintained in agricultural use in the long-term. The only exception is the agricultural field directly south of the landfill which is designated as a Licensed Quarry Pit/Limestone Resource. There is potential that this could be converted to an aggregate extraction operation before the end of the landfill's lifespan.
- Past and on-going agricultural activities have affected and continue to affect baseline conditions and therefore, were considered in the effects assessment contained herein.

**The following is assumed with respect to traffic on Water St. S.:**

- Water St. S. is a two-lane arterial road, which has a posted speed of 80 km/hr in the landfill access area. Roughly 470 m north of the landfill entrance, the road becomes under the jurisdiction of St. Marys. The road has a posted speed of 50 km/hr.
- There are no new developments or planned road improvements in the Study Area that may significantly increase or decrease traffic on Water Street S. near the landfill.
- **The maximum noise from the current traffic conditions is 50 to 60 dBA.**

### **Cumulative Effects Assessment**

To assess cumulative effects, the net effects of the landfill expansion, as summarized in Section 7.0 and Table 9-1, have been carried forward for consideration. As noted previously, environmental components with no net effects are not considered in this

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assessment. Potential effects from the existing and future aggregate extraction and agricultural activities were identified based on effects typically known to occur with similar land uses. The manner in which the potential net effects of the landfill could interact with the effects of the aggregate extraction, agricultural uses and traffic was then considered through a reasoned argument and qualitative analysis. A quantitative estimate of cumulative air emissions was modelled.

Potential cumulative effects summarized in the following sections.

### **9.2.1 Cumulative Effects to Air Quality**

The net effects of the landfill expansion on air quality are minor and within provincial guidelines.

From adjacent land uses, the following additional effects to air quality are expected:

- Nearby aggregate extraction operations will emit products of combustion from the various extraction-related machinery and processing plant. In addition, it is expected that dust will be emitted.
- Agricultural activities will emit dust during ploughing/tilling and harvesting. Products of combustion from farm vehicle and equipment exhaust are expected to be minimal and limited in terms of their duration and frequency.
- Traffic on Water St. S. emits contaminants associated with vehicle exhaust.

An estimate of cumulative air quality conditions was made using background air quality conditions from the provincial air quality monitoring network station in London. This background provides a rough estimate of the effects of surrounding land uses, including agriculture and industry as well as typical traffic conditions. These background emissions were added to the landfill emissions modelled for the landfill expansion<sup>69</sup>. When background conditions were included, all contaminants remained below 91% of the provincial criteria when combined. The only exception is with particulate matter. Particulate matter with a diameter of 10 microns or less (PM10) is expected to be 102.3% of the provincial criteria and total particulate matter may reach 113.7% of the provincial criteria. It is likely that the London monitoring station underrepresents the background dust in the Study Area Vicinity. This is because the SMC operations likely emit more dust than average industrial operations in the London area. Therefore, it is assumed that particulate matter (dust) in the Study Area Vicinity will be moderately to significantly higher than provincial limits as a result of the cumulative effects of the landfill, SMC operations and agricultural activities. It is noted, that when existing landfill emissions are combined with background air emissions, the cumulative existing condition for particulate matter is also above the provincial criteria. This modelling is

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<sup>69</sup> Air quality was modelled for Alternative 3. Results are assumed to be similar for the Undertaking (Alternative 3A) because the height and distance from receptors is similar.

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described in greater detail in the Landfill Expansion Emission Summary and Dispersion Modelling Report provided in Volume III, Appendix A.

The summary of background air quality conditions in combination with landfill emissions is provided in Table 9-2.

The following mitigation measures were identified in Table 9-1 to minimize air and dust emissions:

- Apply dust suppressants, as required.
- Apply daily cover to control landfill gas emissions.
- Should signs of significant LFG emission become apparent (e.g., significant odour may signify that higher-than-expected emissions are occurring), monitoring for LFG may become necessary. As a contingency measure to be addressed through Adaptive Management, an LFG monitoring program may be required. Subject to findings, additional measures, such as additional cover or LFG collection may be required.
- Continue the existing program to record, investigate, and respond to public complaints (including complaints related to dust) and take corrective actions.

Given that the existing cumulative effects of dust in the area are higher than provincial criteria and relatively few complaints have been received in recent years, no additional mitigation is proposed. However, the Town will commit to reviewing dust suppressant procedures should dust concerns become apparent i.e., if complaints rise significantly.

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**Table 9-2: Estimated Cumulative Air Quality Effects**

Contaminant	Criteria (µg/m <sup>3</sup> )	Averaging Period of Criterion	Regulation Schedule No. †	Background Air Quality at London Provincial Air Monitoring Station (µg/m <sup>3</sup> )	Background Air Quality (% of Criteria)	Modelled Conditions Due to Landfill Expansion (µg/m <sup>3</sup> ) §	Cumulative Background Air Quality + Modelled Conditions Due to Landfill Expansion	Cumulative Percentage of Criteria (%)
PM10	50	24hrs	AAQC	27.78	55.6%	23.4	51.1	102.3%
PM2.5	27	24hrs	CAAQS 2020	15	55.6%	2.4	17.4	64.3%
PM2.5	8.8	1 year	CAAQS 2020	7.50	85.2%	0.4	7.9	89.5%
Odour	N/A	10 mins				86.6	86.6	
Methane	37330	24 hrs	SL-PA			8057.0	8057.0	21.6%
Vinyl chloride	1	24 hrs	AAQC	0.00438	0.4%	0.5	0.5	46.3%
Vinyl chloride	0.2	1 year	AAQC	0.0015	0.8%	0.0	0.0	18.0%
Dimethyl sulphide	30	10 mins	AAQC			2.6	2.6	8.7%
Dichlorofluoromethane	500	24 hrs	SL-JSL			0.3	0.3	0.1%
Chlorobenzene	4500	10 mins	AAQC	0.01	0.0%	0.2	0.2	0.0%
Chlorobenzene	3500	1 hr	AAQC	0.01	0.0%	0.1	0.1	0.0%
Carbon Dioxide	255800	24 hrs	SL-PA			22110.0	22110.0	8.6%
Carbon monoxide	36200	1 hr	AAQC	362	1.0%	268.1	630.1	1.7%
Carbon monoxide	15700	8 hrs	AAQC	362	2.3%	140.8	502.8	3.2%
Hydrogen sulphide	13	10 mins	AAQC			6.6	6.6	51.1%
Hydrogen sulphide	7	24 hrs	AAQC			1.2	1.2	17.6%
Nitrogen oxides	400	1 hr	AAQC	39.48	9.9%	32.1	71.6	17.9%
Nitrogen oxides	78.96	1 hr	CAAQS 2025	39.48	50.0%	32.1	71.6	90.6%
Nitrogen oxides	200	24 hrs	AAQC	36.58	18.3%	9.1	45.7	22.8%
Nitrogen oxides	22.56	1 year	CAAQS 2025	16.45	72.9%	0.8	17.2	76.4%
Total particulate matter	120	24 hrs	AAQC	50	41.7%	86.5	136.5	113.7%
Total particulate matter	60	1 year	AAQC	25	41.7%	13.8	38.8	64.6%

† Regulation Schedules:  
 AAQC = Ontario's Ambient Air Quality Criteria  
 CAAQS = Canadian Ambient Air Quality Standards  
 SL-PA = Screening Level- Previously Approved  
 SL-JSL = Screening level- Jurisdictional Screening Level

§ Alternative 3A was not modelled but is considered to be similar to Alternative 3 due to its similar footprint, height and distance to receptors.

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### **9.2.2 Cumulative Effects of Odour**

The net effects of odour as a result of the landfill expansion are minor. Any effects are expected to be low and only slightly higher than existing conditions.

From adjacent land uses, the following additional effects to air quality are expected:

- There are no significant odour effects associated with aggregate extraction operations.
- From agricultural processes, odour may be produced from the spread of fertilizers and pesticides. These odours will be experienced infrequently only when fertilizers and pesticides are in use. The small barnyard on 3rd Line may emit manure-related odour. Given its small size, odour is expected to be very minimal. It is unlikely to be experienced much beyond the farm property. In a rural and agricultural setting, farm-related odours are expected.
- Aside from car exhaust, there are no significant odours from traffic on Water St. S.

Cumulative effects are expected to be negligible, given the small size of the livestock barn in the area and the minimal odour emitted from other agricultural and traffic sources.

The following mitigation measures have been identified in Table 9-1 to minimize odour:

- Apply daily cover to control odour.
- Re-model odour during detailed design and implement any additional mitigation that is identified.
- Continue the updated program to record, investigate, and respond to public complaints (including complaints related to odour) and take corrective actions.

Given that the cumulative effects of odour are expected to be minimal and relatively few complaints have been received in recent years, no additional mitigation is proposed.

### **9.2.3 Cumulative Effects of Noise**

The net effect of noise due to the landfill expansion is minor and within provincial guidelines. Noise levels are expected to be within provincial guidelines at all receptors. However, small increases or decreases may be experienced at a small number of receptors.

From adjacent land uses, the following additional effects to noise are expected:

- Noise is emitted from the operations at SMC. SMC has had operations in the area for nearly a century. Noise from the operations is common and expected in the area.

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- Farm-related noise is minimal and associated with the operation of farm equipment. Noise from farm equipment is not regulated and is typically well below noise levels set by the province for other industrial uses (i.e., 55 dBA).
- The maximum noise from the current traffic conditions is 50 to 60 dBA.
- The only potential change to adjacent land uses is the possible conversion of the agricultural lands to the south to aggregate extraction. This would add a new noise source to the area. However, in order to obtain permissions and approvals for a new quarry operation, it would need to be demonstrated that the operation could meet provincial noise limits.

Noise is measured on a logarithmic scale and noises from one source do not directly add to noises from another source. For example, a 50 dB source and a 40 dB source do not equal an affect of 90 dBA. The more likely result is a noise level similar to the highest source (i.e., 50 dB or negligibly higher). The maximum noise level from the expanded landfill is 51 dBA. Some nearby noise sources are similar or higher, as in the case of traffic and potentially the SMC operations. Because the landfill is not the loudest source of noise, future conditions will primarily depend on the louder surrounding noise sources with only minimal impact from the landfill.

The following mitigation measures have been identified in Table 9-1 to minimize noise:

- Keep construction equipment well maintained and in good working order.
- Require contractors to ensure construction activities conform to the criteria set out in Noise Pollution Control (NPC) 115 of 83 dB.
- Limit use of equipment to daytime hours and adhere the Town's Noise By-law.
- Continue the updated program to record, investigate, and respond to public complaints (including complaints related to noise) and take corrective actions.

Given that the cumulative effects of noise are expected to be minimal and relatively few complaints have been received in recent years, no additional mitigation is proposed.

#### **9.2.4 Cumulative Effects to Groundwater**

The net effects of the landfill expansion on groundwater are minor. There is a slight increased risk of groundwater contamination from the leachate generated at the landfill.

From adjacent land uses, the following additional effects to groundwater are expected:

- SMC operations have altered groundwater flow. The removal of the overburden for the extraction process increases the vulnerability of the underlying aquifers. Both the SMC lands adjacent to the landfill and the Thomas St. Quarry are considered to be High Aquifer Vulnerability Areas due to the lack of protective overburden. This increases the risk on groundwater contamination if contaminants reach the quarry



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floor. The potential for a future extraction operation in the agricultural field to the south of the landfill could create a new High Aquifer Vulnerability Area during the landfill's lifespan.

- With respect to agricultural operations, effects to groundwater are minimal and related to spills of oil and other farm-related substances. These are typically minor and very localized in nature. Source Water Protection regulations are in effect to minimize effects from agriculture on groundwater and drinking water sources. No significant effects to groundwater are expected from agricultural sources.
- No effects to groundwater are expected from traffic on Water St. S.

There is a low risk of groundwater contamination from leachate or CKD materials. The landfill's updated monitoring program and Adaptive Management Plan addresses effects, should they occur. Any groundwater contamination from the landfill will be identified in monitoring wells and addressed well before it could reach the SMC lands to the north and east or any potential future quarry to the south. Therefore, cumulative effects are expected to be minimal.

The following mitigation measures have been identified in Table 9-1 to minimize effects to groundwater:

- Maintain and operate a functional leachate control system (LCS) to capture leachate for treatment at the Town's wastewater treatment plant (WWTP).
- In the case of a temporary WWTP shut-down or short-term lack of capacity in the system, close the LCS discharge and hold leachate in the landfill until treatment can resume at the WWTP.
- Regularly monitor the site for seepage due to leachate mounding. If a seep occurs that escapes the LCS, follow Spills/Leachate Seep Protocols (refer to Section 9.0 and 11.3), including patching seeps, closing outlets in SWM basins (where escaped leachate will collect) and directing contaminated water from the SWM basins to the LCS.
- Maintain a network of groundwater and surface water monitoring wells/stations and report on findings in Annual Monitoring Reports. Implement Adaptive Management Plan based on monitoring results (refer to Section 11.3).
- As a contingency only, if effects from CKD are observed in the realigned watercourse through the updated Annual Monitoring Program, measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.
- During closure and post-closure, maintain a network of long-term groundwater and surface water monitoring wells/stations and reporting on findings in Annual Post-Operational Monitoring Reports. Implement Adaptive Management measures based on monitoring results (refer to Section 11.3).

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- Prepare and carry out procedures during post closure including, but not limited to:
  - Operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;
  - Record keeping and reporting;
  - Complaint contact and response procedures; and,
  - Assessing the landfill's contaminating lifespan based on results of groundwater monitoring programs.

Given that the cumulative effects to groundwater are expected to be minimal, no additional mitigation is proposed.

### **9.2.5 Cumulative Effects to Surface Water Quality**

The net effects of the landfill expansion on surface water are minor. There is a slight increased risk of surface water contamination from the leachate generated at the landfill and the CKD material.

From adjacent land uses, the following additional effects to surface water are expected:

- Upstream of the landfill, the watercourse runs through the SMC lands. Some sediment from stockpiles materials likely makes its way into the watercourse. Surface water monitoring at the landfill indicates that water quality has been affected by upstream land uses. Water quality is typically similar upstream and downstream of the landfill. This means that the landfill is not contributing significantly to water quality conditions.
- Agricultural operations contribute sediment and pesticide and fertilizer-related chemicals to nearby watercourses. The farms to the south and east of the landfill drain to the watercourse that runs through the landfill property. As noted above, surface water monitoring indicates that the watercourse has been affected by upstream land uses.
- Traffic on Water St. St. has negligible effect on surface water quality.

There is a low risk of surface water contamination from leachate or CKD materials. The landfill's updated monitoring program and Adaptive Management Plan addresses effects, should they occur. Therefore, cumulative effects are expected to be minimal.

The following mitigation measures have been identified in Table 9-1 to minimize effects to surface water quality:

- Install and maintain erosion and sediment control (ESC) measures prior to any earth works and until the site has been stabilized and then remove them.

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- Inspect ESC measures to confirm they are functioning and are maintained as required. If control measures are not functioning properly, limit work in the area until the problem is resolved.
- Apply wet weather restrictions during site preparation and excavation. Avoid work near watercourses during periods of excessive precipitation and/or excessive snow melt.
- Refuel and maintain construction equipment within designated areas only.
- Handle hazardous materials used for construction in accordance with best practices and O. Reg. 347.
- Store stockpiled material at least 30 m from any waterway to prevent the discharge of deleterious substances into the water.
- Immediately contain and clean up spills or depositions into watercourses in accordance with provincial regulatory requirements and the contingency plan. Keep a hydrocarbon spill response kit on-site at all times during construction.
- Report spills to the Ontario Spills Action Centre at 1-800-268-6060.
- Provide and maintain stormwater control measures to direct, slow and retain water, including:
  - Additional berms against the waste fill area.
  - Stormwater retention ponds/basins.
  - Flow control measures for stormwater management ditches (which may include rip-rap or vegetation).
  - Vegetated buffer areas along waterways.
- As a contingency only, if effects from CKD are observed in the realigned watercourse through the Annual Monitoring Program, measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.

Given that the cumulative effects to surface water are expected to be minimal, no additional mitigation is proposed.

### **9.2.6 Cumulative Effects to Aquatic Ecology**

The net effects of the landfill expansion on aquatic ecology are minor due to watercourse relocation. A low to moderate increase in the risk of water quality impairment is also expected.

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From adjacent land uses, the following additional effects to aquatic ecology are expected:

- Upstream channels through the SMC lands have been modified and relocated in the past. No new channel realignment on SMC lands is expected in the future. However, upstream reaches of the watercourse are managed as the Sgariglia Municipal Drain. This drain is subject to occasional cleanout which results in physical alteration to aquatic habitat. There is some potential that the drain could be relocated if the agricultural lands to the south are put into aggregate extraction use. None of these physical alterations to the watercourse are likely to occur at the same as the watercourse realignment proposed on the landfill property. No other physical alterations to the watercourse are expected as a result of other adjacent land uses.
- Water quality the watercourse could be affected by adjacent land uses, as described in Section 9.2.5. For reference, potential effects due to adjacent land uses are as follows:
  - Upstream of the landfill, the watercourse runs through the SMC lands. Some sediment from stockpiles materials likely makes its way into the watercourse. Surface water monitoring at the landfill indicates that water quality has been affected by upstream land uses. Water quality is typically similar upstream and downstream of the landfill. This means that the landfill is not contributing significantly to water quality conditions.
  - Agricultural operations contribute sediment and pesticide and fertilizer-related chemicals to nearby watercourses. The farms to the south and east of the landfill drain to the watercourse that runs through the landfill property. As noted above, surface water monitoring indicates that the watercourse has been affected by upstream land uses.
  - Traffic on Water St. St. has negligible effect on surface water quality.

Although several physical alterations to the watercourse are possible in addition to the realignment proposed at the landfill property, all will need to meet UTRCA and DFO requirements, generally with an overall objective to provide a net improvement in aquatic habitat. A such, cumulative effects are expected to be negligible. As noted in Section 9.2.5, cumulative effects associated with surface water quality are also expected to be minimal.

The following mitigation measures have been identified in Table 9-1 to minimize effects to aquatic ecology:

- Design the realigned watercourse using natural channel design principles with an overall result of improved habitat conditions.
- Naturalize all new and remaining riparian areas with tree, shrub and grass plantings to improve riparian habitat and stabilize stream banks.
- Avoid in-water work will occur during June and July.

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- Capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas. Dewater gradually to reduce the potential for stranding fish
- Conduct in-water undertakings and activities during periods of low water levels
- Screen intake pipes to prevent entrainment or impingement of fish. Use the code of practice for water intake screens
- Limit impacts on riparian vegetation to those approved for the work, undertaking or activity;
  - Limit access to banks or areas adjacent to waterbodies
  - Construct access points and approaches perpendicular to the watercourse or waterbody
  - Re-vegetate the disturbed area with native species suitable for the site
- Restore stream geomorphology (i.e., restore the bed and banks, gradient and contour of the waterbody) to its initial state;
- Avoid introducing sediments (e.g., silts, clays and sand) in the water;
- Develop and implement an erosion and sediment control plan to avoid or minimize the introduction of sediment into any waterbody during all phases of the work, undertaking or activity; and
  - Conduct all in-water works, undertakings or activities in isolation of open or flowing water to reduce the introduction of sediment into the watercourse
  - Monitor the watercourse to observe signs of sedimentation during all phases of the work, undertaking or activity and take corrective action
- Develop and implement a response plan to avoid a spill of deleterious substances.
- As a contingency only, if effects from CKD are observed in the realigned watercourse through the updated Annual Monitoring Program, measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD leachate and direct it to the LCS.

No additional mitigation measures are required to address cumulative effects.

### **9.2.7 Cumulative Effects to Social Conditions**

The net effects of the landfill expansion on social conditions are minor and primarily associated with minor increases in odour. There may also be a minor visual effect when the southern tree line is removed. It is noted that this will alter the view from the southern agricultural field only and the current treeline is topographically low-lying, providing only a minor visual block.

From adjacent land uses, the following additional effects to social conditions are expected:

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- Odour could be affected by adjacent land uses, as described in Section 9.2.2. For reference, potential effects due to adjacent land uses are as follows:
  - There are no significant odour effects associated with aggregate extraction operations.
  - From agricultural processes, odour may be produced from the spread of fertilizers and pesticides. These odours will be experienced infrequently only when fertilizers and pesticides are in use. The small barnyard on 3rd Line may emit manure-related odour. Given its small size, odour is expected to be very minimal. It is unlikely to be experienced much beyond the farm property. In a rural and agricultural setting, farm-related odours are expected.
  - Aside from car exhaust, there are no significant odours from traffic on Water St. S.
  - With regard to potential changes to the view from residences on Water St. S., all visual buffers around SMC properties are expected to be maintained. Should be agricultural field to the south be converted to extraction use in the future, its view of the landfill will become irrelevant. No other changes to the view are expected.

As noted in Section 9.2.2, cumulative effects associated with odour are expected to be minor. No cumulative effects associated with the view from residences on Water St. S. are expected.

The following mitigation measures have been identified in Table 9-1 to minimize effects to social conditions:

- Apply daily cover to control landfill gas emissions, odour, dust, reduce blowing litter and control vermin.
- Continue to operate the landfill within daylight hours only.
- Odour will be re-modeled during detailed design. Any additional mitigation identified at that stage will be implemented.
- Plant a new treeline and visual buffer along the southern property boundary.
- Maintain, repair or re-install all existing visual barriers, such as berms or tree plantings to block sightlines after construction.
- Conduct regular inspections by landfill staff to observe, record any operational issues and implement corrective actions, including:
  - Fence patrol and litter collection.
  - Cover and vegetation inspections.
  - Erect portable litter fencing.
- Continue the existing program to record, investigate, and respond to public complaints and take corrective actions.

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- Monitor cover placement (application quality and placement schedule) to minimize the attractiveness of the Site to vectors<sup>70</sup> and vermin<sup>71</sup> as well as larger animals.

No additional mitigation is required to address cumulative effects.

### **9.2.8 Cumulative Effects to Environmentally and Culturally Significant Features**

Environmentally and culturally significant features are those which have been identified as significant by Indigenous communities. Through this EA, the Thames River has been identified as a significant feature. The net effects of the landfill expansion on the Thames River have been identified as minimal and associated only with the minor increased risk of surface water quality impairment.

From adjacent land uses, the following additional effects to the Thames River are expected:

- Upstream of the landfill, the watercourse runs through the SMC lands. Some sediment from stockpiles materials likely makes its way into the watercourse. Surface water monitoring at the landfill indicates that water quality has been affected by upstream land uses. Water quality is typically similar upstream and downstream of the landfill. This means that the landfill is not contributing significantly to water quality conditions.
- Agricultural operations contribute sediment and pesticide and fertilizer-related chemicals to nearby watercourses. The farms to the south and east of the landfill drain to the watercourse that runs through the landfill property. As noted above, surface water monitoring indicates that the watercourse has been affected by upstream land uses.
- Traffic on Water St. St. has negligible effect on surface water quality.

There is a low risk of surface water contamination from leachate or CKD materials. The landfill's updated monitoring program and Adaptive Management Plan addresses effects, should they occur. Therefore, cumulative effects are expected to be minimal.

The following mitigation measures have been identified in Table 9-1 to minimize effects to the Thames River:

- Install and maintain erosion and sediment control (ESC) measures prior to any earth works and until the site has been stabilized and then remove them.

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<sup>70</sup> A *vector* is an organism, such as a mosquito or tick, which carries disease-causing micro-organisms from one host to another.

<sup>71</sup> *Vermin* are various small animals or insects, such as rats, gulls or cockroaches, which are destructive, annoying, or injurious to health.

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- Inspect ESC measures to confirm they are functioning and are maintained as required. If control measures are not functioning properly, limit work in the area until the problem is resolved.
- Apply wet weather restrictions during site preparation and excavation. Avoid work near watercourses during periods of excessive precipitation and/or excessive snow melt.
- Refuel and maintain construction equipment within designated areas only.
- Handle hazardous materials used for construction in accordance with best practices and O. Reg. 347.
- Store stockpiled material at least 30 m from any waterway to prevent the discharge of deleterious substances into the water.
- Immediately contain and clean up spills or depositions into watercourses in accordance with provincial regulatory requirements and the contingency plan. Keep a hydrocarbon spill response kit on-site at all times during construction.
- Report spills to the Ontario Spills Action Centre at 1-800-268-6060.
- Provide and maintain stormwater control measures to direct, slow and retain water, including:
  - Additional berms against the waste fill area.
  - Stormwater retention ponds/basins.
  - Flow control measures for stormwater management ditches (which may include rip-rap or vegetation).
  - Vegetated buffer areas along waterways.
- As a contingency only, if effects from CKD are observed in the realigned watercourse through the updated Annual Monitoring Program, measures to separate the watercourse from the CKD will be required. This may include a barrier and collector pipe to trap CKD contaminated groundwater and direct it to the LCS.

Given that the cumulative effects to the Thames River are expected to be minimal, no additional mitigation is proposed.

### **9.2.9 Cumulative Effects Summary**

The adjacent aggregate extraction, agricultural operations and traffic on Water St. S. result in some effects to local air quality, odour, noise and ground and surface water quality. When combined with the effects of the landfill, a minor increase in the magnitude of the effects can be expected. Standard operating procedures, described in Table 7-2 and the additional mitigation identified in Table 9-1 are sufficient to address landfill effects and cumulative effects. No additional mitigation is required.

A summary of cumulative effects is provided in Table 9-3.



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**Table 9-3: Cumulative Effects Assessment**

Environmental Component	Indicators of Effects on the Environment	Net Effects of the Landfill <sup>72</sup>	Potential Effects from Adjacent Land Uses	Cumulative Effect	Need for Additional Mitigation
<b>Air Quality</b>	Changes in air quality due to construction/closure activities	Minor net effects anticipated: <b>M:</b> Minor. All air emissions are within provincial guidelines <b>F:</b> Contaminants and dust will be emitted in a low level on an ongoing basis. <b>D:</b> Emissions are expected through the construction, operation and closure phases of the landfill. <b>R:</b> Air quality effects are reversible but only after landfill closure.	<b>Aggregate Extraction:</b> Aggregate extraction operations emit dust and products of combustion (i.e., vehicle exhaust). The aggregate processing plant adjacent to the landfill may contribute additional products of combustion. <b>Agricultural Activities:</b> Dust may be emitted during ploughing/tilling and harvesting. Products of combustion from farm vehicle and equipment exhaust are expected to be minimal. <b>Traffic:</b> Traffic on Water St. S. emits contaminants associated with vehicle exhaust.	Background air quality conditions from the provincial air quality monitoring network station in London were added to the landfill emissions modelled for the Undertaking. When background conditions were included, all contaminants were below 70% of the provincial limit when combined, with the exception of particulate matter, which was slightly higher than the provincial limit. It is likely that the London monitoring station underrepresents the background dust in the Study Area Vicinity. Therefore, it is assumed that particulate matter (dust) in the Study Area Vicinity will be higher than provincial limits as a result of the cumulative effects of the landfill, SMC operations and agricultural activities. This modelling is described in greater detail in the Landfill Expansion Emission Summary and Dispersion Modelling Report provided in Volume III, Appendix A.	No additional mitigation is required.  The Town will commit to reviewing and updating dust suppressant procedures should dust concerns become apparent i.e., if complaints rise significantly.
	Changes in air quality due to landfill operations				
<b>Odour</b>	Number of Receptors Potentially Impacted by Odour	Minor net effects anticipated:	<b>Aggregate Extraction:</b> There are no odour effects associated with aggregate extraction operations. <b>Agricultural Activities:</b> Odour may be produced from the spread of fertilizers and pesticides. These odours will be experienced infrequently only when fertilizers and pesticides are in use. The small barnyard on 3rd Line may emit manure-related odour. Given its small size, odour is expected to be very minimal. It is unlikely to be experienced much beyond the farm property. <b>Traffic:</b> Aside from car exhaust, there are no significant odours from traffic on Water St. S.	Cumulative effects are expected to be negligible, given the small size of the livestock barn in the area and the minimal odour emitted from other sources.	No additional mitigation is required.
	Frequency of odour impacts				

<sup>72</sup> M= Magnitude, D= Duration, F= Frequency, R= Reversibility

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Environmental Component	Indicators of Effects on the Environment	Net Effects of the Landfill <sup>72</sup>	Potential Effects from Adjacent Land Uses	Cumulative Effect	Need for Additional Mitigation
		<p><b>M:</b> Minor – Effect is expected to be low and only slightly higher than existing conditions.</p> <p><b>F:</b> Infrequent – Odour effects are expected infrequently but potentially more often than other Alternatives at two receptors.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed.</p>			
<p><b>Noise</b></p>	<p>Noise levels at receptors as a result of construction/closure activities</p> <p>Number of receptors experiencing noise above provincial limit during landfill operations</p> <p>Number of receptors experiencing a change in noise level during landfill operations</p>	<p>Net effect is minor and within provincial guidelines.</p> <p><b>M:</b> Minor. All noise is within provincial guidelines at all receptors. However, small increases or decreases may be experienced at a small number of receptors.</p> <p><b>F:</b> Noise will be ongoing during operational hours.</p> <p><b>D:</b> Noise is expected through the construction, operation and closure phases of the landfill.</p> <p><b>R:</b> Noise effects are reversible but only after landfill closure.</p>	<p><b>Aggregate Extraction:</b> Noise is emitted from the operations at SMC. SMC will be required to meet provincial noise limits.</p> <p><b>Agricultural Activities:</b> Farm-related noise is minimal and associated with the operation of farm equipment.</p> <p><b>Traffic:</b> The maximum noise from the current traffic conditions is 50 to 60 dBA, higher than noise expected from the landfill operations</p>	<p>The maximum noise level from the expanded landfill is 51 dBA. All other surrounding noises are 55 dBA or slightly higher, as in the case of traffic. Therefore, future conditions are expected to be approximately 55 dBA or slightly higher and cumulative effects are minimal.</p>	<p>No additional mitigation is required.</p>

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Environmental Component	Indicators of Effects on the Environment	Net Effects of the Landfill <sup>72</sup>	Potential Effects from Adjacent Land Uses	Cumulative Effect	Need for Additional Mitigation
Hydrogeology	<p>Risk of Increasing Leachate Generation and Strength</p> <p>Risk of impacting groundwater</p> <p>Risk of altering groundwater flow</p>	<p>Minor net effects anticipated:</p> <p><b>M:</b> Minor increase in risk of effects after mitigation.</p> <p><b>D:</b> Groundwater effects would persist for the contaminating lifespan of the site controlled by the continued operation of the LCS.</p> <p><b>F:</b> Leachate generation and risk of groundwater impact is continuous over life of landfill.</p> <p><b>R:</b> Effects to groundwater are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p><b>Aggregate Extraction:</b> SMC operations have altered groundwater flow. The removal of the overburden for the extraction process increases the vulnerability of the underlying aquifers. Both the SMC lands adjacent to the landfill and the Thomas St. Quarry are considered to be High Aquifer Vulnerability Areas due to the lack of protective overburden. The potential for a future extraction operation in the agricultural field to the south of the landfill could create a new High Aquifer Vulnerability Area.</p> <p><b>Agricultural Activities:</b> effects to groundwater are minimal and related to spills of oil and other farm-related substances. These are typically minor and very localized in nature. Source Water Protection regulations are in effect.</p> <p><b>Traffic:</b> No significant effects to groundwater are expected from traffic on Water St. S.</p>	<p>There is a low risk of groundwater contamination from leachate or CKD materials. The landfill's updated monitoring program and Adaptive Management Plan addresses effects, should they occur. Any groundwater contamination from the landfill will be identified in monitoring wells and addressed well before it could reach the SMC lands to the north and east or any potential future quarry to the south.</p> <p>No significant cumulative effects are expected.</p>	<p>No additional mitigation is required.</p>
Surface Water Quality	<p>Risk of contaminated runoff reaching surface water</p> <p>Risk of leachate from seeps reaching surface water</p> <p>Risk of leachate from CKD pile reaching surface water</p> <p>Risk of on-site surface water quality impacting Thames River</p>	<p>Minor net effects anticipated:</p>	<p><b>Aggregate Extraction:</b> Upstream of the landfill, the watercourse runs through the SMC lands. Some sediment from stockpiles materials likely makes their way into the watercourse. Surface water monitoring indicates that the watercourse has been affected by upstream land uses.</p> <p><b>Agricultural Activities:</b> Agricultural operations contribute sediment and pesticide and fertilizer-related chemicals to the watercourse.</p> <p><b>Traffic:</b> Traffic on Water St. St. has negligible effect on surface water quality.</p>	<p>Water quality in the watercourse is degraded as a result of the upstream agricultural and aggregate extraction operations. Surface water quality monitoring has indicated that water quality is typically similar upstream and downstream of the landfill. This means that the landfill is not contributing significantly to water quality conditions.</p> <p>There is a low risk of contamination from leachate or CKD materials. The landfill's updated monitoring program and Adaptive Management Plan addresses effects, should they occur.</p> <p>No significant cumulative effects are expected.</p>	<p>No additional mitigation is required.</p>

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Environmental Component	Indicators of Effects on the Environment	Net Effects of the Landfill <sup>72</sup>	Potential Effects from Adjacent Land Uses	Cumulative Effect	Need for Additional Mitigation
		<p><b>M:</b> Low risk of effect with mitigation and monitoring</p> <p><b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.</p> <p><b>F:</b> Risk of surface water impact is continuous over life of landfill.</p> <p><b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>			

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Environmental Component	Indicators of Effects on the Environment	Net Effects of the Landfill <sup>72</sup>	Potential Effects from Adjacent Land Uses	Cumulative Effect	Need for Additional Mitigation
<p><b>Aquatic Ecology</b></p>	<p>Impact to Aquatic Habitat</p>	<p>Net effects due to water quality impairment only. Effects due to realignment of watercourse can be mitigated.</p> <p><b>M:</b> Low risk of effect with mitigation and monitoring</p> <p><b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.</p> <p><b>F:</b> Risk of surface water impact is continuous over life of landfill.</p> <p><b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p><b>Aggregate Extraction:</b></p> <p>Upstream of the landfill, the watercourse runs through the SMC lands. Some sediment from stockpiles materials likely makes their way into the watercourse. Surface water monitoring indicates that the watercourse has been affected by upstream land uses.</p> <p>There is some potential that the section of the watercourse south and east of the landfill could be relocated if the agricultural lands to the south are put into aggregate extraction use.</p> <p><b>Agricultural Activities:</b></p> <p>Upstream reaches of the watercourse are managed as the Sgariglia Municipal Drain. This drain is subject to occasional cleanout which results in physical alteration to aquatic habitat.</p> <p><b>Traffic:</b></p> <p>Traffic on Water St. St. has negligible effect on surface water quality.</p>	<p>Several physical alterations to the watercourse are possible in addition to the realignment proposed at the landfill property, all will need to meet UTRCA and DFO requirements, generally with an overall objective to provide a net improvement in aquatic habitat. A such, cumulative effects are expected to be negligible.</p> <p>Cumulative effects associated with surface water quality are also expected to be minimal.</p>	<p>No additional mitigation is required.</p>

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Environmental Component	Indicators of Effects on the Environment	Net Effects of the Landfill <sup>72</sup>	Potential Effects from Adjacent Land Uses	Cumulative Effect	Need for Additional Mitigation
<p><b>Social Conditions</b></p>	<p>Potential impacts to enjoyment of life and private property associated with the residences along Water St. S.</p>	<p>Net effects are minor and due to odour only. Other nuisance effects can be mitigated through standard operating procedures.</p> <p><b>M:</b> Minor – Odour effects are expected to be low and only slightly higher than existing conditions. Visual effect is minor as only the view from the south will be affected and the current treeline is topographically low-lying.</p> <p><b>F:</b> Infrequent – Odour effects are expected infrequently but potentially more often than other Alternatives at two receptors. Existing visual break will be removed once.</p> <p><b>D:</b> Long-Term – Odour effects will be experienced over the life of the landfill. The visual impact will be experienced short-term until the new trees have matured.</p> <p><b>R:</b> Reversible – Odour effects are reversible once the landfill has closed. Changes to the view are reversible with a newly planted visual break.</p>	<p><b>Aggregate Extraction:</b></p> <p>There are no odour effects associated with aggregate extraction operations.</p> <p>All visual buffers around SMC properties are expected to be maintained. Should be agricultural field to the south be converted to extraction use in the future, its view of the landfill will become irrelevant.</p> <p><b>Agricultural Activities:</b></p> <p>Odour may be produced from the spread of fertilizers and pesticides. These odours will be experienced infrequently only when fertilizers and pesticides are in use. The small barnyard on 3rd Line may emit manure-related odour. Given its small size, odour is expected to be very minimal. It is unlikely to be experienced much beyond the farm property.</p> <p><b>Traffic:</b></p> <p>Aside from car exhaust, there are no significant odours from traffic on Water St. S.</p>	<p>Cumulative effects are expected to be negligible, given the small size of the livestock barn in the area and the minimal odour emitted from other agricultural sources.</p> <p>No cumulative effects associated with the view from residences on Water St. S. are expected.</p>	<p>No additional mitigation is required.</p>

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Environmental Component	Indicators of Effects on the Environment	Net Effects of the Landfill <sup>72</sup>	Potential Effects from Adjacent Land Uses	Cumulative Effect	Need for Additional Mitigation
<p><b>Indigenous Communities</b></p>	<p>Impacts to culturally or environmentally significant features</p>	<p>Low risk of net effect anticipated.</p> <p><b>M:</b> Low risk of effect with mitigation and monitoring</p> <p><b>D:</b> Surface water effects would gradually change during construction/operation and decline through the contaminating lifespan.</p> <p><b>F:</b> Risk of surface water impact is continuous over life of landfill.</p> <p><b>R:</b> Effects to surface water are reversible in the long-term as leachate strength and quantity diminish when the landfill closes or when any leakages are resolved.</p>	<p><b>Aggregate Extraction:</b></p> <p>Upstream of the landfill, the watercourse runs through the SMC lands. Some sediment from stockpiles materials likely makes their way into the watercourse. Surface water monitoring indicates that the watercourse has been affected by upstream land uses.</p> <p><b>Agricultural Activities:</b></p> <p>Agricultural operations contribute sediment and pesticide and fertilizer-related chemicals to the watercourse.</p> <p><b>Traffic:</b></p> <p>Traffic on Water St. St. has negligible effect on surface water quality in the Thames River.</p>	<p>There is a low risk of contamination from leachate or CKD materials reaching the Thames River. The landfill's updated monitoring program and Adaptive Management Plan addresses effects, should they occur.</p> <p>No significant cumulative effects are expected.</p>	<p>No additional mitigation is required.</p>

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## 10.0 Consultation Summary

Consultation with potentially affected and other interested parties is a key component of the Environmental Assessment process (MOE, 2008). A plan for consultation during the preparation of the EA was provided in the approved TOR and completed in accordance with Section 4.3.1 of the *Code of Practice – Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario* (MOE, October 2009<sup>73</sup>).

In accordance with Section 4.3.7 of the *Code of Practice – Preparing and Reviewing Environmental Assessments in Ontario* (MOE, January 2014) the Record of Consultation is to include information about the consultation process and consultation activities that took place including methods, schedule of events, notification that was given about the activities and the materials used.

The following sections offer a brief list of contacted parties and key notifications and opportunities for consultation presented at various project milestones. Comments and how they were considered and addressed in the EA are summarized herein. Details and copies of all correspondence are included in the Record of Consultation Report (Volume IV).

### 10.1 Project Contact List

A Project Contact List was developed and included:

- Various agencies with an approval or jurisdictional relevance to the project;
- Various stakeholder groups and organizations with potential interest in the project;
- Utilities with infrastructure in the vicinity; and,
- Fifty-two landowners with property within 1km of the existing landfill site.

The list also included Indigenous communities and organizations associated with Treaty 29 (1827). The modern signatories to this treaty are:

- Aamjiwnaang First Nation (formerly Chippewas of Sarnia First Nation);
- Caldwell First Nation;
- Chippewas of Kettle & Stoney Point;
- Chippewas of the Thames First Nation; and
- Walpole Island First Nation.

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<sup>73</sup> The *Code of Practice - Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario* was updated in January 2014, following submission of the TOR for this Project.



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The Haudenosaunee Development Institute (representing the Haudenosaunee Confederacy) and Six Nations of the Grand River also have an interest in the Site due to its location within the area covered by the Nanfan Treaty.

The Indigenous communities listed above are believed to have Indigenous Rights, Treaty Rights, or both, affecting the subject property. However, this list may not be exhaustive.

The Project Contact List is provided in the Consultation Record, Vol IV, Appendix A.

## **10.2 Project Notices**

Project Notices were published at the following project milestones:

- Notice of Acceptance of the Terms of Reference and Commencement of the EA (February 9, 2015);
- Notice of Public Information Centre (PIC) #1 (July 27, 2015);
- Notice of PIC #2 (May 25, 2016);
- Notice of first Draft EA for Inspection (July 5, 2017);
- Notice of revised Draft EA for Inspection (February 26, 2021); and
- Notice of Submission of the EA (August 5, 2021).

Each Notice was published in two consecutive editions (weeks), respectively, of the the following newspapers:

St. Marys Journal Argus<sup>72F 74</sup>  
115 Queen Street  
St. Marys, ON  
Phone: (519) 284-2440

St. Marys Independent  
36 Water Street  
St. Marys, ON  
Phone: (519) 284-0041

Copies of all Notices were emailed/mailed to all contacts on the Project Contact List. Copy of the Project Contact List and Project Notices are provided in Volume IV, Appendix K.

## **10.3 Public Consultation**

### **10.3.1 Public Information Centres**

Two Public Information Centres (PICs) were held at key milestones, as shown in Table 10-1.

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<sup>74</sup> The St. Marys Journal Argus ceased publishing in November 2017. After that date, Notices were only published in the St. Marys Independent.

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**Table 10-1: Public Information Centres**

PIC	Timing
PIC #1	Upon completion of the draft evaluation of <i>Alternatives to the Undertaking</i> , held August 26, 2015.
PIC #2	Upon completion of draft evaluation of <i>Alternative Methods to the Undertaking</i> , held June 23, 2016.

All PICs were conducted in a drop-in format and knowledgeable staff were on hand to answer questions. Materials included are as follows:

- A series of display boards describing the EA process and work conducted to date.
- Sign-in sheets to document participation.
- Comment sheets to allow participants to submit comments.
- Copies of draft documents and supplementary information available for review.

Documentation related to PIC #1 is provided in the Record of Consultation, Vol IV, Appendix B. Documentation related to PIC #2 are provided in the Record of Consultation, Vol IV, Appendix C.

### 10.3.2 Project Information Posted to the Town’s Website

Project information, including Notices, Work Plans and draft documents were posted to the Town’s website: <https://www.townofstmarys.com/en/living-here/Landfill-Environmental-Assessment.aspx>.

### 10.3.3 Review of Draft Documents

Early in the EA process, Work Plans were created to provide a detailed framework for the technical studies to be completed. The following Work Plans were created:

- Air Quality, Noise and Vibration Work Plan;
- Hydrogeological Work Plan;
- Ecological Work Plan;
- Archaeological and Cultural Heritage Work Plan; and
- Socio-economic Work Plan.

Work Plans provided a detailed methodology for characterizing each component of the environment and how the evaluation would be carried out. Work Plans were available for public review during PIC #1 and were placed on the Town’s website.

Work Plans are provided in Volume II, Appendices A through E.

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A draft EA document was also shared with the public for a five-week period in July of 2017. The document was placed on the Town's website and notification was provided via a newspaper notice, as described in Section 10.2.

A Final Report was developed and submitted to the Ministry of the Environment, Conservation and Parks and made available for public comment from August 13 - October 1, 2021.

#### **10.3.4 Summary of Public Comments**

A summary of comments received from adjacent landowners and other members of the public is provided in Table 10-2. Most comments were made verbally during the PICs. One written comment sheet was received. Comments were made by neighbouring landowners and generally related to quality-of-life issues including dust, odour, traffic, and drinking water.

Details and copies of all correspondence are included in the Record of Consultation Report (Volume IV, Appendices B and C).

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**Table 10-2: Summary of Public Comments**

Comment	Comment Type	Study Team Response	Where Addressed in EA
<b>Comments Received During PIC #1</b>			
Concerned with drinking water well quality.	Verbal	<p>Groundwater quality is monitored on a regular and ongoing basis as part of the current landfill operations. To date, there are no concerns related to the landfill's impact on off-site groundwater quality. Landfill monitoring reports are available online at the Town's website.</p> <p>The Hydrogeological Work Plan includes a drilling and monitoring program to understand soil and groundwater conditions. Impacts to ground water quality are one of many criteria used to evaluate the impacts of the Alternatives for the expansion of the landfill.</p> <p>Recommendations will be made for the Preferred Alternative to minimize groundwater (and surface water) impacts.</p>	Potential impacts to groundwater quality are summarized in Sections 7.5 and 9.0. Potential impacts to groundwater quality were studied in the Hydrogeology Study provided in Vol III, Appendix C. No impacts to drinking water are expected.
Concerned with dust from site entrance.	Verbal	<p>Through discussion with the resident, it was found that a significant dust concern occurred a few years ago during the reconstruction of Hwy 7. Excess soils from that project were brought to the landfill for use as cover, to build berms, etc. The truck traffic on the access road caused excessive dust until calcium chloride was spread. Regular site operations have not been as problematic, though some dust from the site access road is occasionally generated.</p> <p>Relative to current operations, dust concerns are taken seriously by the Town. The resident was encouraged to contact the Town if dust becomes an issue again.</p> <p>Impacts to air quality, including dust, are one of many criteria to be used to evaluate the impacts of the Alternatives for the expansion of the landfill,</p> <p>Recommendations will be made for the Preferred Alternative to minimize and mitigate dust generation for the expanded facility.</p>	Potential impacts to air quality are summarized in Sections 7.4 and 9.0. Potential impacts to air quality as a result of dust were studied in the Emission Summary and Dispersion Modeling Report provided in Vol III, Appendix A. Dust is expected to be managed through standard measures, including the application of dust suppressants during construction and applying daily landfill cover during operations. No significant effects associated with dust are expected to be experienced by local residents.
Concerned that thermal treatment has been discarded as an alternative at this stage in the study. Offered suggestion that kiln at St. Marys Cement could be used for a waste-to-energy solution.	Verbal	Thermal treatment was discarded as an option during the TOR because it is not financially feasible for the Town based on the quantities of waste generated. SMC is not at a stage where it could begin accepting waste within the timeframe required by the Town. Also, there are questions as to what portions of the waste disposal stream would be acceptable in the kiln. It is not believed that such a facility could be financially or technically viable. The Town is always open to discussions with SMC.	Refer to Section 9.0. Thermal treatment was not considered as an option. Communication with SMC continued throughout the EA

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Comment	Comment Type	Study Team Response	Where Addressed in EA
<b>Comments Received During PIC #2</b>			
Concerned with drinking water well quality.	Verbal	<p>Groundwater quality is monitored on a regular and ongoing basis as part of the current landfill operations. To date, there are no concerns related to the landfill's impact on off-site groundwater quality. Landfill monitoring reports are available online at the Town's website.</p> <p>Based on the draft preferred expansion method, no waste placement closer to residential wells is being considered. Neighbouring property owner was generally satisfied with this approach, and with current monitoring program including well sampling.</p>	<p>Impacts and mitigation are addressed in Section 7.5 and Section 9.0. Mitigation measures were included to address groundwater concerns, including measures to manage leachate and continue the site's ongoing annual monitoring. Five private wells are currently being monitored and will continue to be monitored.</p>
Concerned with site odours	Written Comment	<p>Neighbouring residents identified intermittent issues with landfill odour impacts during conditions of NE-E wind direction. Project Team members discussed recent challenges to operations as a result of equipment operations and challenging spring weather conditions, as well as mitigation measures. Additionally, the results of the site air modelling for the expansion alternatives were discussed which indicated that current conditions represent the worst-case scenario for potential for impacts.</p>	<p>Mitigation measures were provided in Section 9 to minimize odour, including to implement Best Management Practices and daily cover. Odour will be re-evaluated and modeled based on detailed design plans during preparation of the ECA application as noted in Section 9.0.</p>
Concerned with Traffic Speeds on County Road 123.	Verbal	<p>Discussion with homeowner focused on sightlines of any relocated entrance and posted speed limit outside of St. Marys (80 km/h dropping to 50 km/h within the Town).</p> <p>Any change in entrance location will require sightline analysis, and updates to Traffic Impact Study. Resident plans to contact County to review posted speed limit along road section.</p>	<p>A Traffic Impact Study was completed and can be found in Volume III, Appendix H. As a result of modeling, it was determined that current and future conditions are projected to be safe, and no changes are required.</p>

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## **10.4 Agency Consultation**

Agencies on the Project Contact List were provided with all Project Notices. Direct consultation through email, phone calls and meetings with agencies were also ongoing throughout the EA.

### **10.4.1 Work Plan Review**

Early in the EA process, Work Plans were created to provide a detailed framework for the technical studies to be completed. The various Work Plans issued to the agencies in the spring of 2015. Copies of Work Plans are provided in Volume II, Appendices A through E of this report.

Comments received from agencies on the work plans are summarized in Table 10-3, along with notes describing how each comment was addressed. Comments received from agencies are provided in the Consultation Record in Vol IV, Appendices E (provincial agencies) and G (UTRCA).

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**Table 10-3: Agency Review and Comment on Work Plans**

Work Plan	Agency Circulated	Comments Received	How Comments were Addressed
Air Quality, Noise and Vibration	MECP	<p>MECP:</p> <ul style="list-style-type: none"> <li>• Suggests that the landfill will close after the 40-year period. However, some options allow for future expansion beyond 40 years. The option for future expansion should be acknowledged.</li> <li>• No part of the Work Plan focuses on current air quality. On-site monitoring should be included. A list of dust management practices must be presented.</li> <li>• The list of factors influencing air quality includes the number of vehicles but not the vehicle type or weight. They should look at the effect of track out or vehicle emissions on air quality.</li> <li>• The Work Plan notes that they will be modelling landfill gas. The list should include all species recommended by the ministry. Any final work should include landfill monitoring as an ongoing part of site operation. A monitoring plan should be included.</li> <li>• Contrast both possible scenarios with current conditions.</li> <li>• The Work Plan does not address specific impacts due to noise.</li> </ul>	<p>The Town is only requesting 40-years of capacity at this time. It is acknowledged that some of the Alternatives considered would allow for further expansion beyond 40-years. Future EA and permitting would be required in the future to allow additional expansion.</p> <p>The Landfill Expansion Noise Impact Assessment, and Landfill Expansion Emission Summary and Dispersion Modelling Report were completed in accordance with the draft Work Plan and considered the reviewer’s comments.</p> <p>Air dispersion models assessed maximum off-property impacts at receptors up to 10 km from the property boundary. All MECP recommended contaminants were considered.</p> <p>The existing conditions were compared to each alternative method for both air and noise impacts.</p> <p>The road dust model uses average vehicle weight on each road segment. Road dust is</p>

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Work Plan	Agency Circulated	Comments Received	How Comments were Addressed
			<p>not tracked off-property because there is a paved entry way and excess dust is managed with suppressants.</p> <p>A noise impact assessment was completed for the landfill . Monitoring is recommended for the facility only as a contingency if signs of LFG become apparent.</p>
Archaeological and Cultural Heritage Studies	MECP MHSTCI	<p>MHSTCI:</p> <ul style="list-style-type: none"> <li>• If Stage 2 Archaeological Assessment work is necessary, it should be carried out as part of the EA.</li> <li>• The criteria listed in O. Reg. 9/06 should be used to identify Built Heritage Resources and Cultural Heritage Landscapes.</li> </ul>	<p>A Stage 2 Archaeological Assessment was not required.</p> <p>The Built Heritage Resources and Cultural Heritage Landscapes were identified in accordance with O. Reg. 9/06. The Cultural Heritage Resource Assessment is provided in Volume III, Appendix E.</p>
Ecological Assessment	MECP MNR UTRCA	<p>MECP:</p> <ul style="list-style-type: none"> <li>• Benthic biomonitoring should be added to the assessment of the watercourse.</li> </ul> <p>UTRCA:</p> <ul style="list-style-type: none"> <li>• Noted that 1 year of Eastern Milksnake surveys is insufficient to confirm species absence.</li> <li>• Spiny softshell noted downstream in the Thames River but not likely to be affected by this Project.</li> </ul>	<p>Benthic biomonitoring was not included. A discussion is provided in Section 3.7.1.</p> <p>The status of Eastern Milksnake has been downgraded since Work Plans were developed. Eastern Milksnake is no longer a Special Concern species. Surveys were completed as documented in Section 6.6.1.</p>



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<b>Work Plan</b>	<b>Agency Circulated</b>	<b>Comments Received</b>	<b>How Comments were Addressed</b>
		<ul style="list-style-type: none"><li>• Basking surveys are not the best method to sample for snapping turtles. Wading through ponds is more productive.</li><li>• Fish records were provided.</li></ul>	Wading surveys through landfill SWM ponds were not conducted for health and safety reasons.

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Work Plan	Agency Circulated	Comments Received	How Comments were Addressed
Hydrogeological Assessment	MECP UTRCA	<p>MECP:</p> <ul style="list-style-type: none"> <li>• Section 3.2 Monitoring Results doesn't identify any issues with the current surface water monitoring program.</li> <li>• Indicated that program proposed seemed suitable since it was understood that the method was an iterative approach, and that the study can change as information becomes available. However, it was noted that some component of drilling may be requested if needed.</li> <li>• Pond B appears to be accepting groundwater from Manhole B which is apparently a groundwater interceptor underdrain. Elevated groundwater/ leachate related water chemistry variables are being detected at the Pond B inlet. The EA should include further monitoring of groundwater flow to Pond B.</li> </ul> <p>UTRCA:</p> <ul style="list-style-type: none"> <li>• Work Plan appears complete but noted that UTRCA has completed significant groundwater studies as part of the Source Water Protection Plan.</li> </ul>	<p>An additional monitoring well was installed in November 2016. The results of this work are detailed in the Hydrogeological Assessment.</p> <p>Ongoing monitoring of Pond B and Manhole B is a requirement of the site's existing Annual Monitoring Report (AMR).</p> <p>Source Water Protection Plan background documents were reviewed as part of the EA.</p>

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<b>Work Plan</b>	<b>Agency Circulated</b>	<b>Comments Received</b>	<b>How Comments were Addressed</b>
Socio-economic Assessment	MECP	<p>MECP:</p> <ul style="list-style-type: none"> <li>• Several comments were provided with regard to terminology and the order of different stages of the assessment.</li> <li>• There was a question regarding the evaluation and whether any criteria would be weighted and how the advantages and disadvantages would be determined and assessed.</li> <li>• The land use planning control criteria should include compatibility with the Official Plan and compatibility with the MOE's Land Use Planning Guideline D-4.</li> </ul>	<p>There was no weighting to any of the criteria. The detailed criteria listed in the TOR referred to the evaluation of Alternative Methods. The evaluation of Alternatives to the Undertaking was intended to be a qualitative, high-level assessment based on available information.</p>

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#### **10.4.2 Agency Comments to Draft EA Submission**

Comments were received from a number of agencies during the EA process. Comments related to:

- The methodology used for air, odour, noise and groundwater studies;
- Evaluation indicators and ensuring consistency with the TOR;
- The level of detail provided in the main EA report vs. the report appendices and technical reports;
- The status of the Aggregate Resources license that had been in effect on the landfill property until it was rescinded by SMC and approved by the MNR in November of 2016;
- The various permits and approvals that will be required after completion of the EA; and,
- The status and methodology for carrying out Indigenous consultation.

Details and copies of all correspondence and comment-response tables are included in the Record of Consultation, Vol IV, Appendices E (provincial agencies) and G (UTRCA).

#### **10.4.3 Draft EA Review**

The draft EA was provided to the MECP for review and comment prior to final submission. MECP circulated the draft report to additional agencies, including MNR (now NDMNR), MTO and MHSTCI. Comments were provided on September 22, 2017. Comments were transcribed into a table which lists each comment and how it was addressed. Comments covered a range of topics, many of which related to the need to bring more information from technical reports (appendices) into the main EA document.

The document was revised and resubmitted on January 8, 2020. Additional comments were provided by MECP on March 20, 2020.

A revised draft report was submitted in December 2020 which was followed by additional MECP comments on February 8, 2021. MECP's initial comment letters and the three summary comment-response tables are provided in Volume IV, Appendix E.

#### **10.4.4 Meetings**

Several meetings were held with MECP to review comments and discuss the Project. These meetings were held to review and discuss the comments provided on the first draft EA report. Meeting minutes were not specifically taken by discussion topic, but notes capturing the discussions are provided in Volume IV, Appendix C. Meetings were held on the following dates:

- May 7, 2018 – Teleconference with MECP

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- October 12, 2018 – Meeting at MECP office, 135 St. Clair Ave. West, Toronto
- November 21, 2018 – Meeting at MECP office, 135 St. Clair Ave. West, Toronto
- February 5, 2019 – Meeting at MECP London District Office
- September 24, 2020 – Teleconference with MECP
- January 29, 2021 – Teleconference with MECP

Several phone calls and emails between the MECP and the Study Team were also undertaken to prepare the comment-response tables provided in Volume IV, Appendix E.

#### **10.4.5 Final EA Review**

The Final EA was submitted on August 13, 2021. This document has been amended to address comments by the Government Review Team (GRT), raised during the review period following that submission. Significant comments were received from the Government Review Team. Many of the comments related to uncertainties with respect to water quality impacts and concerns with how the EA process was undertaken. For details see Appendix F Comments with Respect to the August 2021 EA Submission.

GRT comments on the Final EA raised several concerns regarding preferred Alternative 3 particularly the proximity to, and the potential impacts of the Cement Kiln Dust (CKD) Pile on the relocated watercourse. To address these concerns, the Town re-engaged with St. Marys Cement (SMC) to discuss the watercourse relocation and how far onto SMC lands it might extend. SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their Aggregate Resources Act license. Reflecting on both the comments on the Final EA and the limitations with respect to SMC lands, the study team revisited the preferred Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to relocate the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a new preferred alternative, Alternative 3A.

St Marys and the consultant team undertook additional work and reconsidered the preferred alternative in order to address these comments. Appendix F, Comments with Respect to the August 2021 EA Submission, documents the comments received on the Final EA and how they have been addressed in this Amended Final EA.

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## **10.5 Indigenous Community Consultation**

Consultation was carried out with the following communities, who are the modern signatories to Treaty 29 (1827) and the Nanfan Treaty (1701) which have relevance to the Study Area:

- Aamjiwnaang First Nation (Formerly Chippewas of Sarnia First Nation);
- Caldwell First Nation;
- Chippewas of Kettle and Stony Point First Nation;
- Chippewas of the Thames First Nation (COTTFN);
- Haudenosaunee Confederacy (represented by the Haudenosaunee Development Institute (HDI));
- Six Nations of the Grand River; and
- Walpole Island First Nation (Bkejwanong Territory).

It is noted that this list may not be exhaustive; however, through this EA process no additional Indigenous communities of interest have been identified.

The Consultation activities with the above-noted communities included:

- Mailing of all Project Notices (refer to Section 10.2 and IV, Appendix H);
- Follow-up phone calls and/or emails to confirm level of interest;
- Opportunity for a site visit;
- Meetings with HDI and COTTFN; and,
- Submission of draft documents for review.

Each are summarized in the following sections:

### **10.5.1 Project Notices**

The project notices listed in Section 10.2 were provided by email or mail to each of the relevant Indigenous communities. Each notice was followed by at least one phone call to each community to ensure that the notice was received, determine if contacts had changed and identify and comments or concerns about the project.

Communication had been limited after submission of the draft EA in 2017 while additional studies and report updates were being made. A project re-introduction email was sent to all relevant Indigenous communities on February 26, 2021. The purpose of the re-introduction email was to re-engage Indigenous communities and provide an additional opportunity for comments in advance of the release of the Final EA.

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On August 13, 2021, based on received comments, a Final Report was developed, submitted to the Ministry of the Environment, Conservation and Parks and made available for Indigenous Communities and public comment.

Details and copies of all correspondence are included in the Record of Consultation, Vol IV, Appendix H.

### **10.5.2 Site Visit**

On April 24, 2015, the Indigenous communities were mailed a copy of the Draft Ecological Work Plan for review and representatives were invited to participate in a Site Visit and observe fieldwork to be conducted as part of the Ecological Work Plan. Two subsequent telephone contacts with these communities, and follow-up emails on June 18 and 22, 2015 solicited attendance.

Six Nations, Walpole Island First Nation and Aamjiwnaang responded to the invitation to the Site Visit indicating possible attendance or an inability to confirm attendance. Ultimately, no representatives from these communities attended the Site Visit on June 23, 2015. It was further noted to interested communities that other opportunities for a Site Visit were available; however, none of the communities responded to offers for a subsequent Site Visit.

### **10.5.3 Meeting with Chippewas of the Thames First Nation**

A meeting was held with Chippewas of the Thames First Nation (COTTFN) on February 4, 2014. Community representatives expressed concerns with ground water and water quality in the Thames River, noting that the Thames River is important to the community. The community holds treaty rights, particularly related to hunting and fishing, downstream of the landfill.

A request for recent landfill monitoring reports was made. Annual monitoring reports were provided to COTTFN for the years 2010, 2011 and 2012.

COTTFN staff noted that they have a preliminary traditional land use plan which could be shared. Follow-up requests were made by the Town and project team to obtain the traditional land use plan but to date it has not been provided.

Meeting minutes and follow-up correspondence are provided in the Consultation Record, Vol IV, Appendix H.

### **10.5.4 Meeting with HDI**

A meeting was held with the Haudenosaunee Development Institute (HDI) on February 29, 2016 at the HDI office in Hagersville. HDI described the Nanfan Treaty and the associated rights held by the community. Much of the meeting was used to

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discuss HDI's consultation process and application fee. The Town did not have the resources to cover the application fee but continue to provide opportunities for HDI engagement by issuing draft report for review and keeping HDI apprised of the various EA milestones.

#### **10.5.5 Work Plan Review**

Draft Work Plans were provided to the following Indigenous communities and agencies:

- Aamjiwnaang First Nation;
- Caldwell First Nation;
- Chippewas of Kettle and Stony Point First Nation;
- Chippewas of the Thames First Nation;
- Haudenosaunee Development Institute;
- Six Nations of the Grand River and

Walpole Island First Nation (Bkejwanong Territory). No comments were received with respect to the specific content or proposed methodologies outlined in the Work Plans.

#### **10.5.6 Draft EA Review**

A link to the draft EA was sent to Indigenous communities in 2016 requesting input on the draft EA. Follow-up phone calls were made.

An updated draft EA Report and draft Technical Reports were also re-shared with the communities through email with a download link on February 25, 2021. a number of updates were made to the draft report.

A set of follow up calls were made in February 2021. A second round of follow up calls/emails were made/sent in March 2021 (records of these emails and calls are included in the Record of Consultation, Vol IV, Appendix H.

To date no comments have been received from Indigenous communities in response the above.

#### **10.5.7 Comments Received from Indigenous Communities**

A record of all correspondence with Indigenous communities is provided in the Consultation Record, Vol IV, Appendix H.

Much of the correspondence related to the consultation process and capacity funding. Requests for funding were received from the Chippewas of the Thames First Nation and Aamjiwnaang First Nation. In addition, a meeting was held with the Haudenosaunee



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Development Institute (HDI) on February 29, 2016. Discussions related to rights associated with the Nanfan Treaty and HDI's application process, including funding.

The Town noted its inability to provide significant funding to each of the interested communities. A suggestion to fund a single review to be coordinated among all communities was proposed but was ultimately determined to be untenable. A record of correspondence is provided in the Consultation Record, Vol IV, Appendix H.

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**Table 10-4: Summary of Comments From Indigenous Communities**

Community	Comment	Project Team Response
Chippewas of Kettle and Stony Point First Nation	On September 28, 2015 Chippewas of Kettle and Stony Point FN sent a letter to the Town, in response to the Town's EA process participation letter dated August 20, 2015. The community noted that the Town project will impact on Traditional Territory. The community indicated an interest in consultation and requested notification only if the scope of the project changes and/or if amendments are made.	On October 20, 2015, the Town responded indicating that the community will be kept informed as the EA work advances.
Haudenosaunee Development Institute	<p>On August 7, 2015, Ms. Tracey General sent a letter and an Application for Consideration and Engagement for Development to Burnside and the Town. The letter provided information on HDI rights and interest in the area and indicated that the Project will have a significant impact and infringement upon those rights and interests. Comments included discussion of the process being undertaken by the Town and a request for a meeting.</p> <p>Also, on August 10, 2015 HDI sent written comments in response to PIC, noting that HDI holds rights and interests and that an Application for Engagement Form is to be completed to begin an engagement process.</p> <p>On February 29, 2016, a meeting was held with members of HDI, representatives, the Town and Burnside. During the meeting HDI indicated the need for the Town to follow HDI's application process, to submit a application form and paying the initial fee to allow for their review process.</p>	<p>On August 20, 2015 the Town provided a completed Application for Engagement Form. The application fee was not provided. The Town noted they were prepared to fund some review activities but were not able to pay the application fee. A suggestion was made to fund a joint review on behalf of all affected Indigenous communities, but it was ultimately determined that this was untenable.</p> <p>HDI's treaty rights and interests have been acknowledged, as described in Sections 3.7.1.2, 7.12.1 and 10.1.</p>

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Community	Comment	Project Team Response
	<p>In follow-up to the meeting, on February 29, 2016, HDI (lawyer Aaron Detlor) sent a letter to Mr. Kittmer, to the Town of St. Marys. The letter indicated that the Project would impair and interfere with the treaty rights of the Haudenosaunee. The letter requested further consultation, noting that HDI's application has been received but the application fee has not.</p>	
<p>Six Nations of the Grand River</p>	<p>On June 25, 2015, Six Nations of the Grand River (Ms. Joanne Thomas) emailed Burnside and explained the absence of a representative from their community at the Site Visit. It was noted that Six Nations of the Grand River wishes to be kept on the Project Contact List and informed of the project moving forward.</p>	<p>Six Nations has been sent all project notices and draft documents for review.</p>
<p>Six Nations of the Grand River</p>	<p>On September 21, 2015, the Six Nations of the Grand River sent a letter to the Town acknowledging receipt of the Town's August 20, 2015 letter (per Section 4.5.2). The letter noted that this project is within Six Nation's Treaty Lands; and provided information on the consultation policy and process of the Six Nations of the Grand River to which they are bound and obligated to use in discussions with any projects affecting their rights and interests. The letter provided links to policies, processes, land rights, and interests and it was requested that they be allowed to review the archaeological work once completed.</p>	<p>The community's treaty rights have been acknowledged, as described in Sections 3.7.1.2, 7.12.1 and 10.1.</p> <p>The Stage 1 Archaeological Assessment was provided to Six Nations staff for review for a five-week period in July of 2017. No comments were received.</p>

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## **10.6 Submission of Environmental Assessment**

A Notice of Submission of Final EA Report was prepared and circulated to all parties on the Project Contact List advising them of the availability of the Final EA Report on the Town's website for the prescribed 7-week public review period, commencing on August 5, 2021. Comments received during that period have resulted in some changes to the Final EA. Those changes are described throughout this report.

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## **11.0 Commitments and Monitoring**

This Section summarizes the commitments made throughout the EA and the monitoring program that will ensure compliance with the EA commitments and measure the performance of the landfill. A list of all commitments made in this EA has been summarized in Section 11.1.

Compliance monitoring will be carried out to ensure that all commitments are met. Environmental monitoring will also be completed to identify any unexpected effects and determine when Adaptive Management may be required. Compliance monitoring and environmental monitoring are described in Sections 11.2.1 and 11.2.2, respectively. An Adaptive Management Plan is described in Section 11.3.

### **11.1 Summary of Commitments**

Throughout this EA, various commitments have been made with respect to the detailed design, construction, operation and closure of the St Marys Landfill expansion. For the purpose of this section:

- Detailed design refers to the period of time between EA approval and the commencement of construction activities;
- Construction refers to the period of time when construction activities are occurring and it should be noted that construction and operations will occur concurrently;
- Operations refers to the operating life of the landfill; and
- Closure refers to the period of time after the landfill has stopped receiving waste but while monitoring and maintenance activities continue. (see Section 6.2).

A full list of EA commitments by project phase is provided in Table 11-1, including where the commitment was made in the EA document or in consultation during the final EA review period. In addition, Table 9.1 details the mitigation measures that will be used to minimize the predicted negative effects to the environment. Not all mitigative measures have been repeated in this section. Section 9.0 summarizes the additional studies or updates to studies that will be undertaken as part of detailed design and the Environmental Protection Act Approvals.; not all of these have been repeated in the Summary of Commitments table.

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**Table 11-1: Summary of EA Commitments**

Project Phase	EA Report Reference	EA Commitment
Detailed Design	Section 7.4.2	Review and re-model potential odour impacts based on the detailed design plans. From the modelling, the Town will identify and develop plans for additional mitigation, monitoring, and contingency measures for odour as needed.
	Section 9.0	During detailed design, provide an updated Hydrogeological Study to MECP and UTRCA. The updated hydrogeological study will assess the interaction of the expanded waste footprint, with its liner and leachate collection system, and the sand-silt seam. We anticipate the detailed design will prevent such interactions, monitoring will be in place to detect any interaction, and contingency measures will be available should interactions occur.
	Sections 11.2 and 11.3	Update existing Annual Monitoring Program to include additional monitoring stations, parameters, triggers and other changes detailed in Sections 11.2 Monitoring Program and 11.3 Adaptive Management Plan. This updated Annual Monitoring Program will be reviewed and approved by MECP as part of the ECA approval process. Annual Monitoring Reports will continue to be submitted to MECP.
	Section 11.2.1	The Town will submit an annual Compliance Monitoring Report to MECP to document how the commitments in Table 11.1 are being carried out until all of the commitments have been fulfilled.
	Section 8.25 and Section 9.0	During detailed design, develop a detailed Watercourse Realignment Plan for approval by DFO and UTRCA. Design the watercourse realignment in accordance with the principles of Natural Channel Design. Ensure the mitigation measures identified by DFO are incorporated into the design.
	Section 8.2.6 and Section 9.0	Develop a Stormwater Management Plan and submit to MECP and UTRCA for approval prior to construction. Plan will provide additional detail including velocities at the basin outlets for various storm events, cross sections of the stormwater facilities showing flood water surface elevations for the 100 and 250 year storm event as well as pond inlet and outlet details.

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Project Phase	EA Report Reference	EA Commitment
	Section 7.7.1 and Table 9-1	An Erosion and Sediment Control (ESC) Plan/ Dewatering Plan will be developed and submitted to UTRCA and MECP for review.
	Table 9.1	Opportunities for habitat enhancement and increased net environmental benefit for any terrestrial or aquatic habitat removed as part of the landfill expansion works will be further assessed and incorporated during the detailed design phase. These measures will be developed in consultation with the UTRCA.
	Table 7-2 Table 9-1	<p>A Tree Inventory and Landscape Plan will be completed for the landfill property including the following mitigation measures:</p> <ul style="list-style-type: none"> <li>• Complete a Tree Inventory and Landscape Plan for the landfill property.</li> <li>• Tree replacement will be at a 10:1 ratio. For clarity, this means that ten tree seedlings will be planted for each tree that is removed. Replacement seedlings will be located on the landfill property or another Town property, if space does not permit.</li> <li>• Install woody plants adjacent to the realigned watercourse to enhance watercourse shading, fish, and wildlife habitat, as well as improve tree cover within the watershed.</li> <li>• Revegetate disturbed areas including closed landfill cells as soon as possible with native groundcover species to minimize potential for reseeding of non-native and/or invasive species.</li> <li>• Conduct post-construction monitoring of plantings for vegetation success. Replacements may be necessary where vegetation does not survive.</li> </ul>
	Section 8.2.5	As part of Watercourse Realignment Plan identify measures for turtle, snake and other habitat enhancement and aquatic habitat enhancements where possible and incorporate into the detailed design. This Plan will be submitted to UTRCA and DFO for review and to secure the relevant permits prior to construction.

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Project Phase	EA Report Reference	EA Commitment
	Consultation Record, Vol IV, Appendix I	<p>Contact all relevant utilities to identify potential effects , with particular attention to:</p> <ul style="list-style-type: none"> <li>• Union Gas: Provide preliminary plans to Union Gas to identify any conflicts with the natural gas main located in the east side of County Road 123/Water Street S., and a station southwest of the existing landfill site.</li> </ul>
	Section 8.2.7	Consult with the St. Marys Fire Department during the detailed design to ensure that site access and interior roads meet fire route requirements in accordance with applicable municipal by-law(s).
	Section 8.4	Review and update existing Complaint Response Framework which identifies procedures for documenting, investigating, responding to and reporting on complaints.
	Section 8.5	Review and update existing Emergency Response and Communications Plan which identifies procedures for responding to emergencies and ensuring clear and appropriate public and agency communication.
	Section 8.7.6	Prepare a Closure Plan at least two years prior to closure of the landfill site as per the current ECA governing site operations and obtain MECP approval prior to closure.



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Project Phase	EA Report Reference	EA Commitment
	Section 8.3	<ul style="list-style-type: none"> <li>• During detailed design, an Indigenous Consultation Plan will be developed to direct consultation with Indigenous communities throughout the remainder of the detailed design, operations and closure/post-closure phases. At a minimum it will include:</li> <li>• Opportunities for Indigenous communities to review the detailed design documents and reports required for other approvals;</li> <li>• Meetings between the Town and interested Indigenous communities to discuss opportunities for involvement of community members, accommodations, and mutual benefits including opportunities to participate in field monitoring during construction and operation;</li> <li>• Town led landfill tours offered to interested Indigenous communities;</li> <li>• The Town will notify Indigenous communities if there are changes to the landfill's ECA throughout the operational period and if there are any emergency or spill-related situations that pose a risk to the Thames River; and</li> <li>• The Town will notify interested Indigenous communities of the landfill's closure and post closure monitoring plans.</li> </ul>

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Project Phase	EA Report Reference	EA Commitment
	Section 8.3	<p>Work with regulators to acquire all necessary permits and/or approvals pursuant to the:</p> <ul style="list-style-type: none"> <li>• Environmental Protection Act</li> <li>• Ontario Water Resources Act</li> <li>• Conservation Authorities Act</li> <li>• Endangered Species Act</li> <li>• Fisheries Act</li> <li>• Fish and Wildlife Conservation Act</li> <li>• Others, as identified during the design phase</li> <li>• As part of the ECA application pursuant to the Environmental Protection Act the Town will submit an updated Design and Operations Report which addresses the requirements of O.Reg. 232/98 under the Act.</li> </ul>
	Table 7-2, Table 9-1	Complete the online project registration to address removal of Eastern Meadowlark Habitat under the conditional exemptions outlined in O. Reg. 830/21 of the Endangered Species Act or pay the species conservation charge to the Species at Risk Conservation Trust.
	Section 8.3	The Town commits to consulting with Hydro One during all stages as the project progresses. Hydro One will be provided with an opportunity to review and comment on the design plan prior to finalization. Future communications about this project will be sent electronically to <a href="mailto:SecondaryLandUse@HydroOne.com">SecondaryLandUse@HydroOne.com</a> .
	Section 7.7.1 and Table 9.1	Survey the site for Bank Swallow habitat prior to any site alteration. Contact the Permissions and Compliance of Species at Risk Branch ( <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a> ) for guidance under the <i>Endangered Species Act, 2007</i> if Bank Swallow is found to be nesting on site. Should Bank Swallow be found nesting on-site, apply a 50 m buffer around the active nest.”

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Project Phase	EA Report Reference	EA Commitment
	Section 8.3	Contact the Impact Assessment Agency of Canada to confirm if an IAAC review is required, should details or design aspects of the Project change such that the Project may include physical activities that are described in The Physical Activities Regulations under the Impact Assessment Act.
	Section 8.3	Contact the NDMNRF should there be any potential need for a permit under the Petroleum Wells & Oil, Gas and Salt Resource Act, or Public Lands Act & Lakes and Rivers Improvement Act. Obtain approvals as required.
	Section 7.8.2 and Table 9-1	Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to ground disturbing activities.
	Section 7.8.1 and Table 9-1	Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.
	Section 7.8.1 and Table 9-1	Once detailed designs of the proposed work are available, the Cultural Heritage Resources Assessment will be updated with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.
	Section 7.8.1 and Table 9-1	Should future work require an expansion of the study area, the a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.
<b>Construction</b>		
Construction	Table 9-1	Carry out construction in accordance with the mitigation measures described in Table 9-1.

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Project Phase	EA Report Reference	EA Commitment
	Section 8.3	Notify the DFO greater than 10 days prior to the construction of the landfill expansion commencing.
	Section 8.3	Keep the DFO letter, dated October 4, 2021 and/or any subsequent letters and approvals, on Site during the construction period to ensure all noted mitigation measures are implemented.
	Table 9-1	Conduct two years of post-construction monitoring of the realigned watercourse and any watercourse monitoring requirements identified by DFO or UTRCA during the permitting process. Monitoring results will be presented in the Annual Monitoring Report prepared for MECP.
	Section 8.3	Engage with HDI to identify opportunities where community representatives may participate in field monitoring during construction.
Operation	Section 3.1.3.6	Review available diversion programs every 10 years and meet any future diversion targets set out in provincial policy.
	Table 9.1	Carry out landfill operations in accordance with the mitigation measures described in Table 9.1.
	Section 8.4 and 8.5	Enact the site's complaint-response procedures and emergency response plans, as required. Document and report on actions taken in Annual Monitoring Reports.
	Section 11.2 and 11.3	Undertake the landfill site's updated Annual Monitoring Program and reporting and enact any adaptive management, as required, in accordance with the Adaptive Management Plan and the approved ECA and in consultation with MECP.
	Table 7-2 and Section 11.2	Maintain existing monitoring wells located within the CKD Stockpile for use in determining groundwater contours and flow direction at the site. Sample these wells as part of Annual Monitoring Program) until sampling results show stable or predictable results to the satisfaction of MECP and then discontinue monitoring.
	Table 7-2 and Section 11.2	Continue to monitor the five private wells which are currently part of the landfill's updated Annual Monitoring Program.
	Section 9.2.1	Review and update dust suppressant procedures should dust concerns become apparent i.e., if complaints rise significantly.

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Project Phase	EA Report Reference	EA Commitment
	Section 8.3	Submit Annual Monitoring Reports to HDI for review.
	Section 8.3	Meet annually with the Walpole Island First Nation to discuss annual monitoring reports, landfill performance and potential benefits and opportunities that the work may present for the Walpole Island First Nation. At each meeting it will be determined if additional meetings are required.
	Section 8.3	Notify Indigenous communities any changes to the landfill's ECA throughout the operational period.
	Section 8.3	Notify Indigenous communities of any emergency or spill-related situations that pose a risk to the Thames River, as required.
<b>Closure and Post-Closure</b>	Table 7-2 and Section 8.7.6	At least 2 years prior to closure of the landfill, a Closure Plan will be prepared in and circulated in accordance with the ECA for site operations and the landfill will be closed in accordance with the approved Closure Plan.
	Table 9.1	Carry out landfill closure and post-closure activities in accordance with the mitigation measures described in Table 9.1.
	Table 7-2 and Section 8.7.6	Maintain the site's surface water and leachate management facilities, plus inspect and repair areas of settlement, erosion, or leachate seeps for the duration of the post-closure period.
	Section 11.2	Complete annual monitoring and submit Post-operational Monitoring Reports for the post-closure period to MECP in accordance with the ECA and this EA.
	Section 8.3	Notifying interested Indigenous communities of the landfill's closure and post-closure monitoring plans.

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## **11.2 Monitoring Program**

A comprehensive updated monitoring program is a critical element of the landfill expansion project informing detailed design, operation and closure. The monitoring program serves several functions, as follows:

- EA compliance monitoring will ensure compliance with EA commitments and approval conditions set out in Table 11.1.
- Environmental conditions monitoring will be on-going and will inform detailed design activities, and confirm effects are as predicted. This information will also be used to inform the Adaptive Management framework to identify where changes to the design or operation may be required to ensure effects are minimized.
- Environmental effects monitoring will measure the effects of landfill operation. This includes the environmental effects monitoring and reporting that will be carried out under subsequent Environmental Compliance Approvals. This monitoring will also inform the Adaptive Management Framework.

Each of these types of monitoring is detailed below.

### **11.2.1 EA Compliance Monitoring**

Compliance monitoring refers to the monitoring carried out to ensure that all project phases are carried out in a manner that is compliant with this EA and that all the commitments listed in Table 11-1 have been carried out.

Some of the commitments will be carried out by the Town, while others will be the responsibility of various engineering and construction contractors. Any contractor responsibilities will be clearly specified in bid and tender documents to ensure they are carried out. The Town will ultimately be responsible for ensuring that contractors complete all required commitments.

The Town will submit an annual Compliance Monitoring Report to MECP to document how the commitments in Table 11.1 are being carried out until all of the commitments have been fulfilled.

### **11.2.2 Environmental Effects Monitoring**

Effects monitoring refers to monitoring used to ensure that the magnitude, frequency and duration of the effects of the construction, operation and closure of the landfill are as expected. The existing and updated monitoring program is on-going and will be carried out for the full operational period of the landfill and will continue into the post-closure period. For the purposes of this EA, the post-closure period is assumed to be 50 years, but the actual length will depend on leachate contaminant levels.

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This program specifically targets identifying effects to groundwater and surface water quality due to landfill operations as a result of the uncertainties identified in the effects assessment and the risks of leachate migration off-site.

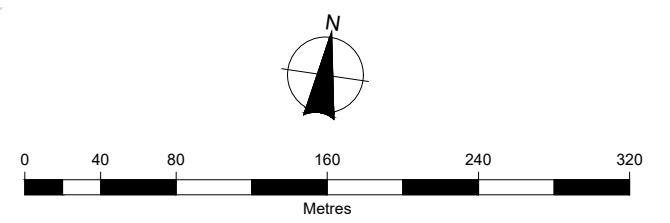
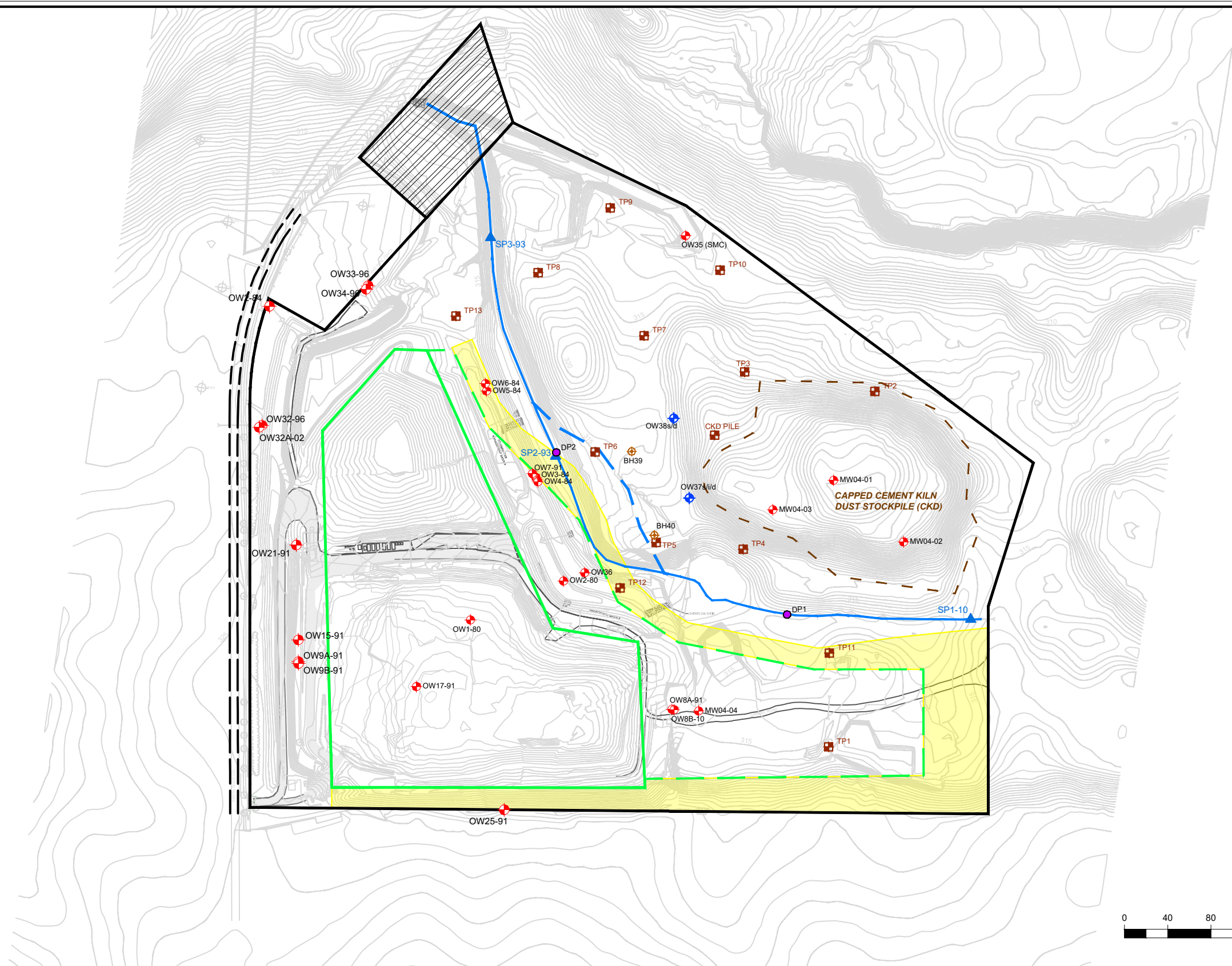
Effects monitoring will be documented in the landfill's Annual Monitoring Reports, submitted to MECP as a requirement under the landfill's ECA. Within the annual monitoring report an 'Opinion' section will be included which discusses, based on the ground and surface water monitoring results, whether additional mitigation or contingency measures are necessary. This opinion will be reviewed each year and updated as required. The Town commits to including in the ECA application a section that discusses how the Town will determine when mitigation measures need to be implemented and the inclusion of an 'Opinion Section' in the annual monitoring report. Furthermore, should the Town's consultant determine that the contingency measures are necessary immediately, the MECP will be notified directly.

Monitoring is carried out through water sampling at a number of monitoring wells and stations, as shown on Figure 11-1.

Annual monitoring is currently carried out at the landfill and updates are proposed to the program as a result of the landfill expansion. The updated Annual Monitoring Program is based on the existing program, and incorporates the changes recommended in Vol I, Appendix D. It is to be implemented as part of both the EA and the ECA approval process. The program also considers the following MECP documents that have come into effect since 1992, when the original monitoring program was developed:

- Landfilling Sites, Ontario Regulation 232/98;
- Landfill Standards: A Guidelines on the Regulatory and Approval Requirements for New or Expanding Landfill Sites, January 2021, Schedule 5: Groundwater, Leachate and Surface Water Monitoring Parameters;
- Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface water, Technical Guidance Document, MOE, November 2010; and
- Guide on Aspects of Hydrogeological Assessment for New and Expanding Landfilling Sites, DRAFT (V.9), March 2022.

The type of monitoring and water quality parameters to be sampled are summarized in Table 11-2, Table 11-3 and Table 11-4. General site conditions should be documented during each site visit including, but not limited to, condition of landfill cover, erosion, leachate seeps, blown litter, odours, conditions of each monitoring location, and wells needing repair. This updated Annual Monitoring Program will be further refined during the ECA approval process following EA approval.



LEGEND	
	PROPERTY LINE
	APPROXIMATE CKD PILE COVER LIMIT
	EXISTING WATERCOURSE
	PROPOSED WATERCOURSE ALIGNMENT
	EXISTING LIMIT OF WASTE
	EXPANSION REFUSE LIMIT
	EXISTING CONDITIONS CONTOURS
	MONITORING WELL (RJB, 2022)
	MONITORING / OBSERVATION WELL
	TESTPIT
	SURFACE WATER SAMPLING LOCATION
	BOREHOLE (RJB, 2022)
	DRIVE POINT PIEZOMETER
	PERIMETER INFRASTRUCTURE
	RIGHT-OF-WAY AND SEWER EASEMENT


  
**TOWN OF ST. MARYS**

Figure Title			
<b>FUTURE SOLID WASTE DISPOSAL EA</b>			
LOCATION OF MONITORING WELLS			
Drawn	Checked	Date	Figure No.
SK	TR	JUNE 2022	
Scale	Project No.		<b>11-1</b>
1:4,000	300032339		



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**Table 11-2: Ground & Surface Water Monitoring Program Summary**

<b>Groundwater Monitoring Wells</b>		
<b>Station</b>	<b>Water Level</b>	<b>Water Quality</b>
OW2-84 (Background O/B)	WL	GWQ
OW8A-91	WL	GWQ
OW8B-10	WL	GWQ
OW9A-91 <sup>3</sup>	WL	GWQ
OW9B-91 <sup>3</sup>	WL	GWQ
OW15-91 <sup>3</sup>	WL	GWQ
OW21-91 <sup>3</sup>	WL	GWQ
OW25-91 (Background O/B)	WL	GWQ
OW32-96	WL	GWQ
OW33-96 (P/L) <sup>4</sup>	WL	GWQ
OW34-96 (P/L) <sup>4</sup>	WL	GWQ
OW32A-02 (P/L) <sup>4</sup>	WL	GWQ
OW37S-22 <sup>1</sup>	WL	GWQ
OW37I-22 <sup>1</sup>	WL	GW
OW37D-22 <sup>1</sup>	WL	GWQ
OW38S-22 <sup>1</sup>	WL	GWQ
OW38D-22 <sup>1</sup>	WL	GWQ
MHB	WL	GWQ
<b>Surface Water Stations</b>		
<b>Station</b>	<b>Flow (F), Water level (WL)</b>	<b>Water Quality</b>
SP1-10 (upstream)	WLF	SWQ
SP2-93 (midstream) <sup>3</sup>	WLF	SWQ
SP3-93 (downstream)	WLF	SWQ
<b>West SWM Basin</b>		
Inlet	WLF	SWQ
Outlet	WLF	SWQ
<b>East SWM Basin<sup>5</sup></b>		
Inlet	WL	SWQ
Outlet	WL	SWQ

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**Table 11-3: Groundwater Monitoring Program Summary**

Surface Water Stations		
Station	Flow (F), Water level (WL)	Water Quality
<b>Leachate Manholes<sup>6</sup></b>		
MH1 (Phase I)	WL	LQ
MH3 (Phase II/III)	WL	LQ

Notes:

1. OW3-84, OW4-84, OW5-84, OW6-84, OW7-91, and OW36 will be decommissioned and replaced by OW37S, OW37I-22, OW37D-22, OW38S-22, and OW38D-22. OW37S-22 and OW38D may have insufficient water to collect a sample)
2. Record observations of sedimentation build up in Basin
3. SP2-93, OB9A-91, OW9B-91, OW15-91 and OW21-91 might have to be decommissioned to facilitate site construction. (Replacement wells proposed in Area 6 (Figure D-7).
4. Located along property limit (P/L) for Reasonable Use Assessment
5. SWM Basins A & B will continue to be monitored until they are replaced by the West and East SWM Basins
6. Monitoring of noted leachate manholes will be discontinued and replaced with new monitoring locations when the landfill expansions leachate collection system is constructed and operating.

O/B – Overburden; WL= Water level; WLF= water level and or flow conditions; GWQ = Groundwater Quality – Schedule 5; SWQ = Surface Water Quality; LQ = Leachate Quality; Flow = Flow Measurement  
It is recommended that at least two duplicate water quality samples be collected for blind laboratory analysis (Approximately 1 duplicate should be collected for every 10 samples submitted to the Laboratory for analysis).

**Table 11-4: Water Quality Parameters**

Sample Type	Schedule 5 Parameters	Special considerations
Groundwater Monitoring Wells (GWQ)	Column 2: Indicator List for Groundwater plus: total phosphorus, hardness, manganese, potassium, bicarbonate and carbonate.	Schedule 5: Column 1: Comprehensive list for Groundwater plus hardness, bicarbonate and carbonate at: OW37S, OW37I, OW37D, OW38S, OW38D, MHB, OW2-84 and OW25-91
Surface Water Stations (SWQ)	Column 4: Indicator List for Surface Water plus: boron, hardness, magnesium, manganese, sodium, calcium, potassium, bicarbonate & carbonate.	
Leachate wells and manholes (LQ)	Column 2: Indicator List for Leachate, plus: total phosphorus, hardness, manganese, potassium, bicarbonate, and carbonate	

Notes:

Based on MECP (January 2012) Landfill Standards Schedule 5 groundwater and surface water quality parameters with the following notes:

- potassium was added as an indicator for CKD pile contaminants.

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Sample Type	Schedule 5 Parameters	Special considerations
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- Total Phosphorus, hardness, boron and manganese are current landfill indicators (2021 Monitoring Report, GM BluePlan, 2022).
- Magnesium, sodium, calcium, bicarbonate, and carbonate were added to facilitate analysis using trilinear plots (Piper Plots).

### 11.3 Adaptive Management Plan

To ensure the landfill expansion and realignment of the watercourse function as anticipated, an approach to ongoing management is required to identify and assess the need for changes to the project to minimize unanticipated effects. Adaptive Management provides a framework to achieve this using monitoring information. Adaptive Management is a systematic process for improving the function or operation of a project throughout the project life. Information obtained from monitoring is used to identify issues and risks before they become undesirable environmental effects such that management or design changes can be implemented promptly.

An Adaptive Management Plan will be in place to address unanticipated effects that may arise. This section provides procedures to follow if site design and environmental control measures do not function as anticipated.

The landfill expansion project is occurring on a complex landscape which includes the existing landfill site, the operations of SMC, the CKD pile and drainage from these industrial activities. This complexity creates some uncertainty with respect to how different activities on the site may interact or have influence on each other. Information obtained from the environmental effects monitoring will be used to identify issues and risks before they become undesirable environmental effects such that management or design changes can be implemented promptly.

Given that the project is an expansion of an existing landfill the site conditions are well known as are the effects of operation. This EA process has identified that there are some uncertainties associated with the potential effects to groundwater quality as the landfill expands to the north east closer to the CKD pile and with the realignment of the watercourse and the potential for impacts to surface water quality from groundwater and site run off. The Adaptive Management Plan is focused on addressing these uncertainties as detailed in the following sections.

#### 11.3.1 Adaptive Management Triggers

Adaptive Management or Contingency plans are emplaced to address potential impacts that may occur but are unlikely to happen. This section provides triggers and procedures, to be incorporated into the updated Design and Operations Report (to be prepared as part of the ECA application), for use during emergencies as well as planned

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responses if site design and environmental control measures do not function as anticipated.

It is recommended that non-emergency measures be implemented only after a review of background information and site performance indicators to provide the best solution to potential effects that may arise. The contingency measures described below are generic and address a wide variety of issues. A situation specific issue may be more suitably addressed by a specific response measure. Therefore, all measures, beyond those of a routine maintenance nature, are to be reviewed by the MECP before implementation to ensure compliance with the ECA. The following sections outline the measures that should be taken if one or more of these situations occur at the site.

Contingency triggers are developed to determine when action is required. The contingency triggers for the site are based on both concentration trigger values for chloride and evaluating concentration trends for site specific indicator parameters while taking into consideration Provincial Water Quality Objectives (PWQO) and Ontario Drinking Water Quality Standards (ODWQS). The indicator parameters for the Site are presented in Table 11.5 and recommended for monitoring to determine if changes in water quality (i.e., trends or trigger exceedances) demonstrate a deterioration in water quality or predict a future landfill or CKD pile effect on groundwater or surface water quality. The trends and triggers for these indicator parameters will be evaluated as part of the updated annual monitoring required by both the EA and the ECA. The monitoring and contingency program might need minor adjustments once detailed design is completed however the overall intent and evaluation process is not expected to change. Triggers are summarized in Table 11-5.

**Table 11-5: Points of Compliance and Indicator Parameters**

Location	Chloride Trigger	Trend Analysis	Notes
<b>Assessment for Landfill Impacts</b>			
Reasonable Use Boundary/Compliance wells OW32-96, OW32A-02, OW33-96, OW34-96, and OW35	Chloride (100 mg/L)	Alkalinity Conductivity DOC Sulphate Hardness TKN Manganese Boron	Sodium:chloride, sodium:calcium, and chloride:sulphate ratios will be reviewed in the future to determine if they can demonstrate landfill related impacts. Time versus concentration trends to be assessed for all indicator parameters while taking PWQOs and ODWQS and Reasonable Use target concentrations into consideration.
Sentry Wells: OW9A-091, OW9B-91, OW15-91		Chloride Alkalinity Conductivity DOC Sulphate Hardness TKN	

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Location	Chloride Trigger	Trend Analysis	Notes
		Manganese Boron	
Background Wells: OW2-84, OW25-91		Chloride Alkalinity Conductivity DOC Sulphate Hardness TKN Manganese Boron	
Surface water: SP3-93 (downstream)		Potassium Sulphate Alkalinity Conductivity DOC Hardness Manganese TKN Boron	Time versus concentration trends to be assessed for all indicator parameters while taking PWQO concentrations and trends comparing upstream (SP1-10) versus downstream (SP3-93) conditions.
<b>Sentry Wells for Potential CKD Impacts on Watercourse</b>			
OW37S-22 OW37I-22 OW37D-22 OW38S-22 OW38D-22		Potassium Alkalinity Conductivity DOC Sulphate (Establish base line for all indicators (minimum 4 results), assess for increasing trend for 4 consecutive results – evaluate potential for future impact on surface water quality.	Sodium:chloride, sodium:calcium, and chloride:sulphate ratios will be reviewed in the future to determine if they can demonstrate CKD related impacts.
Notes: OW9A-091, OW9B-91, OW15-91 may be decommissioned and replaced to facilitate construction.			

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### Chloride Trigger:

**Groundwater:** The D&O (CRA 1992) identified a trigger of 100 mg/L for chloride at the property limit. Chloride is a good indicator of landfill related impacts but can be influenced by road salting and in this case, the CKD pile. As such, other indicators including conductivity, alkalinity sulphate, DOC, potassium, and a few metals will also be used to assess long term trends even if background concentrations are near the Reasonable Use Guideline (RUG) value (e.g., DOC) or no RUG value exists (e.g., alkalinity).

**Surface Water:** Surface water impacts have not been detected (GM BluePlan, 2022) and there are currently no site-specific surface water triggers. A PWQO value does not exist for chloride however the Canadian Water Quality Guidelines (CWQG) present a surface water criterion of 128 mg/L for chloride. The historical range for chloride is between 13 mg/L and 887 mg/L at the upstream station SP1-10 (i.e., elevated chloride is attributed to off site upstream contributions) therefore a concentration above 128 mg/L does not necessarily reflect a site related impact on the watercourse. Downstream surface water (SP3-93) quality will be compared to upstream surface water ((SP1-10) quality to assess on site contribution of chloride to the watercourse.

**CKD Pile Sentry Wells:** It is expected that ground water quality at the sentry wells would have to deteriorate significantly (i.e., assumed to at least double) before a CKD related effect could be detected in surface water. A chloride trigger is not recommended for the sentry wells positioned between the CKD pile and the watercourse based on the following rationale:

- The sentry wells are not a point of compliance yet provide early warning for potential future impacts on the watercourse which will be evaluated based on water quality trends in the sentry wells in conjunction with a comparison of upstream (SP1-10) and downstream (SP3-93) surface water quality in the watercourse as noted above.
- The Ontario Drinking Water Quality Aesthetic Objective (ODWQ – AO) for chloride is 250 mg/L,
- The chloride concentrations at OW37I-22, OW37D-22 and OW38-S are already almost 250 mg/L (244 mg/L at OW38S-22, see Table 7) yet the watercourse is not currently impacted by the CKD Pile (or the landfill), and,
- Groundwater flow contributions from the CKD pile to the watercourse are minimal.

### Trend Analysis

If the chloride trigger is activated at a point of compliance, the required action will depend on the nature of the result and concentration trend analysis for the other indicators. If an exceedance of a trigger concentration or an increasing concentration trend emerges during annual monitoring, the next two routine monitoring results

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obtained at that location will be reviewed to confirm the validity of the suspect concentration or trend. If the exceedance or trend is confirmed by the next two routine monitoring results to reflect a potential impact, action will be required.

Assessing water quality impacts on the watercourse will rely on indicator parameter data trends at the sentry wells and a comparison of surface water quality in the watercourse between upstream (SP1-10) and downstream (SP3-93) stations. Once baseline conditions are established (minimum of 4 samples), the following will be considered:

- If an unacceptable increasing trend for an indicator parameter is identified in a sentry well:
  - Other parameter trends will be assessed both in the sentry wells and watercourse monitoring locations to confirm or refute the trend.
  - Water quality between upstream and downstream surface water stations will be compared to determine whether indicator concentrations and trends are similar or different between stations.
- If an unacceptable increasing trend is identified in the watercourse:
  - Concentration trends will be assessed both in the sentry wells and watercourse monitoring locations to confirm or refute the trend.
  - Water quality between upstream (SP1-10) and downstream (SP3-93) surface water stations will be compared to determine whether indicator concentrations and trends are similar or different between stations.

The trends and triggers for indicator parameters outlined above will be evaluated to recommend if adaptive management measures are needed. The recommendation(s) will be included as an “Opinion Section” in both the annual monitoring report and associated cover letter, for submission to the MECF. If immediate action is required, the Town will submit an interim letter report.

The goal is to submit the adaptive management plan outlining the measures to be implemented to the MECF for review and comment within one month of identifying an increasing trend as outlined above. It will be carried out upon approval from the MECF and could include the following depending on the situation.

**Adaptive Management Measures - Groundwater:**

- Install and test boundary well(s) downgradient of the affected sentry well(s).
- Review current site operations to determine if there is any probable cause for the increase and if any operational changes could reduce the impact through reduction of leachate production.
- Review data to determine the probability of off-site contamination and assess the need develop a contaminant attenuation zone.

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- Review the updated annual monitoring program and recommend changes. Any new boundary wells would become part of the updated annual monitoring program and triggers would be set for these wells. If the trigger levels are exceeded or increasing trends are identified at the new boundary wells, and there is potential for off-site impacts, additional actions will be required. The exact nature of those actions would depend on impacts identified and where they are occurring and could include items outlined in Section 11.3.2.

#### **Adaptive Management Measures - Surface Water:**

- Review current site operations to determine if there is any probable cause for the increase and if any operational changes could reduce the impact through surface water controls such as ditches, swales, berms, grading, seeding, cover enhancement.
- Review the updated annual monitoring program and recommend changes. New surface water quality monitoring points would become part of the updated annual monitoring program and triggers would be set for these locations. If the trigger levels are exceeded at the new locations, and there is potential for off-site impacts, additional actions will be required. The exact nature of those actions would depend on impacts identified and where they are occurring and could include items outlined in Section 11.3.2.

#### **11.3.2 Adaptive Management Responses**

When the triggers outlined in Section 11.3.1 are exceeded, an Adaptive Management response may be required. The following sections outline potential strategies to provide guidance in the event that effects are detected.

##### **Potential Effect Identified: Landfill Leachate Migration in Groundwater (Overburden)**

The leachate collection system installed beneath Phase II/III was a mitigation measure to collect leachate beneath the waste. It reduces the potential for contaminants to migrate into the overburden, more specifically the meltwater deposits.

A deeper collection pipe was also installed in the meltwater deposits beneath the leachate collection system between MHA and MHB (maintenance hole A and B). The deeper pipe has no outlet. It was installed as a contingency to collect leachate entering the meltwater deposits. Water in the deeper pipe can be pumped out from MHB when leachate contaminants are detected (i.e., not meeting Provincial Water Quality Objectives). Otherwise, overflow from MHB is allowed to discharge to the surface water system that flows to Basin B. Water quality samples are collected at MHB to assess changes and potential impacts beneath the Phase II/III leachate collection system the



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waste. This provides a level of protection that contaminants won't exceed the trigger levels at the property boundary.

Other options include:

- Establish an offsite Contaminant Attenuation Zone (CAZ), such as the road allowance or other lands located to the west of the site.
- Install poplars or other hardy trees on completed portions of the site, which tend to stabilize the surface, increase evapotranspiration and uptake leachate impacted groundwater which reduces the leachate generated from the site; and/or,
- Install a cut-off trench, with leachate interception and recirculation back into the landfill. If monitoring beyond the control feature indicates leachate migration, then purge wells would be installed along the landfill side of the cut off feature to dewater the meltwater deposits. The quality of purge water would determine whether the water would be discharged to the leachate collection system or the surface water Basin.

A slurry trench/wall was to have been constructed to cut off leachate migration from the landfill site (pg. 72 of 1992 CRA report). The Slurry wall was to have been placed along the west and south perimeter ditch and keyed into a soil unit with permeability less than  $10^{-8}$  m/s.

#### **Potential Effect Identified: Leachate Migration in the Bedrock Aquifer**

If monitoring indicates leachate migration into the bedrock, then purge wells could be installed downgradient of the plume. The quality of contamination in the purge water would determine whether the water would be discharged to the leachate collection system or a surface water Basin.

#### **Potential Effect Identified: Leachate Mounding and Seepage**

Leachate seeps would be corrected by excavating the soil cover and waste in the vicinity of the seep and placing a granular material (e.g., clear washed stone) to create a hydraulic connection between the perched layer and the collection system. Leachate seeps due to the failure of the leachate collection system can be corrected by flushing the lines and removing restrictions in the pipe. If flushing is unsuccessful, purge wells could be installed through to the base of the waste. The leachate could be pumped to a holding tank to alleviate pressure and leachate mounding on the landfill side slopes. Alternatively, the leachate could be transferred and held in a clay-lined, temporary dry surface water storage pond to facilitate eventual management and disposal.

The District Manager of the MECP must be notified within 1 week of a leachate breakout.

#### **Potential Effect Identified: Groundwater Impacts from CKD pile**

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Groundwater impacts from the CKD pile could be addressed as follows:

- Continued groundwater quality monitoring between the CKD pile and the watercourse realignment will be critical to assessing water quality trends, changes in the subsurface conditions and predicting future CKD impacts on the watercourse.
- The concentration of many parameters in the groundwater within CKD pile have declined since monitoring began in 2004. Resume monitoring of the groundwater quality at MW04-01 and MW04-03 screened within the CKD pile to assess source concentrations.
- Groundwater levels and water quality monitoring at MW04-01 and MW04-03 could be incorporated into the routine monitoring program. A contingency plan and trigger mechanism must be established to determine when confirmation sampling and remedial action are required.

Although not currently required, mitigation measures may be needed as part of the watercourse realignment design and construction, or they may be added later based on monitoring. Potential measures include:

- Adding to or improving the cover materials and vegetation above the CKD Pile.
- Excavating/removing the buried CKD material or sand and silt seam pathway, backfilling with a clayey material (likely available on-Site).
- Over excavating some or the entire realignment and installing a liner – either recompacted clay or a geosynthetic.
- Installing a French drain between the CKD Pile and the watercourse realignment, directing the CKD impacted groundwater to the Site's leachate collection system, a holding tank, or a containment pond (lined, dedicated for this purpose).

#### **Potential Effect Identified: Surface Water Impacts from CKD pile**

The monitoring well network, and site drainage systems are designed to prevent and predict impacts to surface water. Should CKD contaminants be detected in the sample collection pond, then mitigation measures can be implemented. These may include or combine:

- Extending or improving the cover materials and vegetation above the CKD Pile.
- Additional local grading.
- Enhancing the swale with vegetation to provide additional treatment.
- Modifying the sampling pond to provide additional treatment.
- Adding an outlet control to the sampling pond, allowing surface water to accumulate but not discharge. The water could then be sampled, and if contaminated, disposed (potentially directed to the leachate collection system) rather than released into the watercourse.

#### **Potential Effect Identified: Presence of High Levels of Landfill Gas**

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Historically, there has been no landfill gas monitoring at the Site. Further, there was no monitoring completed as part of this field investigation. We assume landfill gas migration will remain an insignificant issue at the Site, particularly given its predominantly clay/silt till nature. However, contingency measures can be put into place should landfill gas issues arise. These include:

- If low combustible gas levels are suspected or complaints regarding odours are received:
  - A landfill gas monitoring program can be initiated.
  - Consideration will be given to installing a passive gas venting system consisting of perforated gas collection piping in appropriate locations.

If high levels of combustible gas are suspected, then the need to install an active gas collection system will be considered.

### **11.3.3 Adaptive Management Summary and Flexibility**

The Adaptive Management Plan is designed to address unexpected environmental effects. There is potential that an environmental effect could be detected that is not considered in Section 11.3.2. Should this occur, the Town will work under the guidance of MECP to investigate the cause and/or severity of the effect and develop an appropriate management response.

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## **12.0 Compliance with Terms of Reference**

This EA has been prepared in accordance with the approved Terms of Reference which can be found in Appendix E. Compliance with the Terms of Reference is documented in Table 12-1.

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**Table 12-1: Concordance with Approved Terms of Reference**

Commitment (Location of Where Commitment was Made)	Commitment Status	Commitment Completion Timeline	Documentation Addressing Commitment	
<b>Terms of Reference – Notice of Approval</b>				
<b>Errata Letter</b>				
The annual fill rate, annual waste disposal tonnage, and population projection will be reassessed as part of the EA. <b>In parallel with the EA process, the Town will review increased waste diversion opportunities.</b> This may result in the proposed landfill capacity, the planning period or both being adjusted to reflect future estimates/requirements.	<b>Completed.</b> During the EA planning process, the annual fill rate, annual waste disposal tonnage and population projections were reviewed and used to determine the required landfill capacity. Increased waste diversion opportunities and new provincial policies were also considered in the calculation of landfill needs.	Completed during EA	Volume I	Section 3.1
The Town will review and implement diversion activities as opportunities arise, outside of this EA process.	<b>To be completed on an ongoing basis.</b> The Town will continue to review diversion opportunities as they arise.	40-year planning period	Volume I	Section 3.1.3
Increased waste diversion will be considered for the proposed undertaking but will not constitute part of the undertaking.	<b>Completed.</b> Waste diversion was considered and discussed but was not part of the undertaking.	Completed during EA	Volume I	Section 3.1.3
<b>Phase 1</b>				
The Alternatives To the Undertaking to provide additional landfill disposal capacity at the St. Marys Landfill will be assessed, with consideration to increasing diversion. (ToR Section 5.1)	<b>Completed.</b> The Evaluation of Alternatives to the Undertaking was completed including and evaluation of the following: (1) Do Nothing; (2) Landfilling at an Expansion of the Existing Landfill Site in St. Marys; (3) Exporting Waste to Another Jurisdiction.	Completed during EA	Volume I	Sections 3.8, 3.9, and 3.10
As part of waste diversion potential evaluation, a survey will be administered to the operators of a number of potential waste disposal facilities, expected to be mainly landfills, which may be able to accept the Town's waste. (ToR Section 5.1.2)	<b>Completed.</b> The municipal survey was sent to 14 municipalities that operate landfills within approximately 100 km of St. Marys.	Completed during EA	Volume I	Section 3.4
The annual fill rate, annual waste disposal tonnage, and population projection will be reassessed as par to the EA. In parallel with the EA process, the Town will review increased waste diversion opportunities. This may result in the proposed landfill capacity, the planning period or both being adjusted to reflect estimates/requirements. (ToR Section 2.1.2)	<b>Completed.</b> The annual fill rate, annual waste disposal tonnage, population projections and potential waste diversion opportunities were reviewed and used to determine the required landfill capacity.	Completed during EA	Volume I	Section 3.1
The EA consultation program will be open by making all reasonable efforts to ensure that potentially affected or interested parties have full information made available to them and are given the opportunity to make their views known. (ToR Section 6.0)	<b>Completed.</b> Consultation with potentially affected and other interested parties was completed according to the plan for consultation prepared during the preparation of the EA (provided in the approved TOR).	Completed during EA	Volume I Volume IV	Section 10.0
All comments from the public, agencies, Indigenous communities, and other interested persons will be documented and summarized in the EA. All other consultation activities, such as PICs and agency and Indigenous meetings, will also be documented. (ToR Section 6.4)	<b>Completed.</b> The Study Team has documented all communications in the Record of Consultation Report including copies of all letters, emails, faxes and other correspondence that the Study Team sent to and received from members of the public, government agencies, public utilities, Indigenous communities and other interested parties; as well as minutes from meetings held and copies of written comments received; records of public information events, including information about the event locations	Completed during EA	Volume I Volume IV	Section 10.0

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Commitment (Location of Where Commitment was Made)	Commitment Status	Commitment Completion Timeline	Documentation Addressing Commitment	
	and layout/programs, copies of materials provided, sign-in sheets, comment sheets, news media communications, notices published, etc.			
Conflict Resolution: The Town is committed to working with all interested parties to address and resolve concerns to the greatest extent possible. (ToR Section 6.5)	<b>Completed.</b>	Completed during EA	Volume I Volume IV	Section 10.0
<b>Phase 2</b>				
Depending on the Preferred <i>Alternative to the Undertaking</i> , the Individual EA process may continue, it may be halted, or it may trigger an alternate environmental approval process. This will be reassessed in Phase 2.	<b>Completed.</b>	Completed during EA	Volume I	Section 4.0
<b>Phase 3</b>				
Once it is clear that the Individual EA process will continue, the definition of the Undertaking as well as its purpose and rationale will be re-defined. A detailed description and statement of rationale for the Undertaking will be provided in the EA based on the findings of the work completed through the EA process, in Phases 1 and 2. (ToR Section 5.3)	<b>Completed.</b> A detailed description and statement of rationale for the Undertaking was provided in the EA based on the findings of the work completed through the EA process, in Phases 1 and 2.	Completed during EA	Volume I	Section 5.0
<b>Phase 4</b>				
Three Alternative Methods will be reviewed (plus any additional potential alternatives identified during EA) as identified in Table 5.3 of the TOR document. (ToR Section 5.4.1)	<b>Completed.</b> Based on the consideration of design factors and comments from the GRT, the Study Team developed and identified seven Alternative Methods (including 'Do Nothing') including Alternative 3A which was developed in response to comments raised by the GRT on the August 2021 EA submission (see Appendix F 'Comments with Respect to the August 2021 EA).	Completed during EA	Volume I	Section 7.0
Work Plans will be developed during the EA, specific to each component of the environment or discipline that will outline in further detail the methodology to be used to characterize and assess each component. (ToR Section 5.4.5)	<b>Completed.</b> Work Plans were created in the early stages of the EA process. They provided a detailed methodology for characterizing each component of the environment and how the evaluation would be carried out.	Completed during EA	Volume I Volume II	Section 6.3 Appendices A through E
Draft Work Plans will be available for public, Indigenous and agency comments prior to the initiation of field studies and survey programs. (ToR Section 5.4.5)	<b>Completed.</b> Work Plans were circulated to relevant agencies for review and comment. Work Plans were also circulated to Indigenous communities and presented to the public at the first Public Information Centre.	Completed during EA	Volume I	Section 6.3 and Section 10.0
The EA will consider the potential effects on various environmental components over two time periods: Construction and operation of the expanded landfill, and Closure and post-closure of the landfill. (ToR Section 5.4.3)	<b>Completed.</b> Potential impact resulting from the Undertaking during construction, operation, and decommissioning (closure and post-closure) of the landfill expansion to the natural, cultural, social and built environments as well as mitigation measures and net effects were identified during the EA.	Completed during EA	Volume I	Section 7.0 and Section 9
The Existing Environment will be Characterized for Natural Environment, Cultural Environment, Indigenous Connections to the Land, and	<b>Completed.</b> The Existing Environment was characterized in both Phase 1 and Phase 5. In Phase 5 of the EA, additional field investigations were undertaken to characterize	Completed during EA	Volume I	Sections 3.7 and 6.4

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Commitment (Location of Where Commitment was Made)	Commitment Status	Commitment Completion Timeline	Documentation Addressing Commitment	
Socio-Economic Environment, with the sub-components listed in Section 5.4.5 of the TOR document. (ToR Section 5.4.5)	the environment in greater detail and in accordance with the sub-components listed in Section 5.4.5 of the TOR document.			
The Alternative Methods will be evaluated based on the criteria including Natural Environment, Cultural Environment, Indigenous Connections to the Land, and Socio-Economic Environment, and the sub-criteria identified under Section 5.4.7 of the TOR document. <i>Criteria may be further refined as a result of comments received from the public, Aboriginal communities and agencies during the EA process.</i> (ToR Section 5.4.5)	<b>Completed.</b> The Alternative Methods were evaluated using the criteria including Natural Environment, Cultural Environment, Indigenous Connections to the Land, and Socio-Economic Environment, and the sub-criteria identified under Section 5.4.7 of the TOR document. Note: The indicators listed in the TOR were updated as described in Section 7.2	Completed during EA	Volume I	Section 7.0
The site will be reviewed by a qualified person to determine if the site, accounting for its past land use, has the potential for archaeological findings. If this is the case, a Cultural Heritage and Archaeological Assessment of the site will be undertaken. (ToR Section 5.4.6)	<b>Completed.</b> An Archaeological Assessment Study and a Cultural Heritage Assessment Study has been completed as part of the EA Study.	Completed during EA	Volume III	Appendices F and E
Additional information will be gathered through consultation process with the Indigenous communities in Section 5.4.6 of the TOR document during the EA consultation process. (ToR Section 5.4.6)	<b>Completed.</b>	Completed during EA	Volume I Volume IV	Section 10.5
<b>Phase 5</b>				
Positive and negative environmental effects that could potentially arise from the undertaking and from <i>Alternative Methods</i> will be identified and described for each of the Alternatives. (ToR Section 5.5.1)	<b>Completed.</b> The advantages and disadvantages of the proposed Alternative Methods were identified based on the net effects identified for each of the Methods.	Completed during EA	Volume I	Section 7.0
Measures for mitigating potential negative environmental effects from the undertaking and from <i>Alternative Methods</i> will be identified and described. Any residual impacts that cannot be fully mitigated will be identified. (ToR Section 5.5.2)	<b>Completed.</b> Potential impact resulting from the Undertaking during construction, operation and decommissioning (closure and post-closure) of the landfill expansion to the natural, cultural, social and built environments as well as mitigation measures and net effects were identified during the EA (including Land Use).	Completed during EA	Volume I	Section 9 (including Table 9.1)
<b>Phase 6</b>				
The EA process will be fully documented and available for public, Indigenous and agency review at various stages throughout the process. (ToR Section 5.6)	<b>Ongoing.</b>	Completed	Volume I	Section 10.0
A draft EA report will be submitted to the MOE, Government Review Team and other interested stakeholders, if applicable, prior to final submission in order to ensure that it meets all requirements. (ToR Section 5.6)	<b>Completed.</b> Draft EA report has been submitted for MECP review on June 5, 2017, Feb 10, 2020 Dec 9, 2020. A Final EA was submitted for MECP review on August 13, 2021.	Completed during EA	N/A	N/A

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BURNSIDE

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## Appendix A

### Waste Reduction and Diversion Assessment

*THE CORPORATION OF THE TOWN OF ST. MARYS*  
**WASTE REDUCTION & DIVERSION ASSESSMENT**

AUGUST 2018



The Corporation of the Town of St. Marys  
*Public Works Department*

August 2018



## Disclaimer

This Waste Reduction and Diversion Assessment for the Town of St. Marys has been prepared by the Environmental Services Supervisor and has been reviewed and approved by the Director of Public Works. This document provides an overview of the current waste streams within the Town of St. Marys and identifies potential initiatives for advanced diversion and the impacts additional programs may have on the Town. Information presented within this report is understood to be factual and correct and Town staff shall not be held liable for inaccurate or improper data relied upon herein.

This report has been prepared in support of the Environmental Assessment for Future Solid Waste Management Needs within the Town of St. Marys as per the Terms of Reference Approval from the Ministry of Environment and Climate Change.

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**Appendix A2** – Blue Box Recycling Program

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**Appendix B2** – Cigarette Waste Recycling

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**Appendix B4** – Mattress and Box Spring Diversion

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**Appendix B6** – Backyard Composting Initiatives

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**Appendix B8** – Industrial, Commercial & Institutional Diversion

## 1.0 Introduction

In most Canadian municipalities, the number one challenge is how to do more with less. Departments and Agencies must contend with increasingly tight budgets, yet still strive to deliver frontline programs and services to growing populations (The Corporation of the Town of St. Marys, 2011).

The following assessment was completed with the Resource Recovery and Circular Economy Act, 2016 in mind, which establishes the outcomes-based producer responsibility regime. In establishing waste reduction and diversion initiatives based on the Resource Recovery and Circular Economy Act, 2016, the Town will be better positioned to consider end-of-life materials as resources rather than waste, resulting in fewer raw materials being used and working to maximize the life expectancy of the landfill site. In addition to the Resource Recovery and Circular Economy Act, 2016 is the Waste Diversion Transition Act, 2016, which will facilitate a seamless transition from the current waste diversion programs to the new producer responsibility framework.

Certain steps are encouraged in order to achieve and maintain a zero-waste economy. By the year 2020, it is anticipated to begin transition of existing programs such as the e-waste recycling and Blue Box program. Development as well as implementation of the Food and Organic Waste Action Plan and 3Rs Regulations are also projected to commence during this time period. By 2050, the Circular Economy targets an 80% diversion rate while building towards a zero-waste economy. This coincides with the Town's current plans and strategy for Future Solid Waste Disposal Needs with the anticipated expansion of the existing landfill site into the 2050's.

As the Town positions itself for a long term waste disposal solution, the ability to divert and reduce the volume of waste destined for final disposal will be vital. This assessment looks at the current waste reduction and diversion programs administered by the Town, as well as investigating programs which may be considered to improve waste reduction and diversion as strategies administered from the Provincial Government come to fruition.

## 2.0 Background

The St. Marys Landfill Site opened in December 1984 and was designed to be constructed and filled in three phases, referred to as Phases I, II and III. Each phase of the original design was to be separated by an earth berm, and each disposal area was anticipated in 1982 to provide approximately 15 to 20 years of landfilling capacity for the Town of St. Marys, depending on population growth rates (Design and Operation Report, Phase II/III, St. Marys Landfill Site, St. Marys, Ontario, Ref. No. 0645(9) prepared by Conestoga Rovers & Associates dated November 1992).

Phase I was designed for a maximum volumetric capacity of 104,000 cubic metres, including daily cover. Phase II/III required the design to be re-assessed and upgraded due to new environmental standards at the time and resulted in a total combined volumetric capacity of 276,000 cubic metres with 140,000 cubic metres for Phase II and 136,000 cubic metres for Phase III. Phase II/III was designed to be developed in eight (8) stages, with each stage supplying approximately 1.5 to 3 years of landfilling capacity. This estimation was based on utilizing a fill rate seen in Phase I of 15,000 cubic metres per year. The design of Phase II/III had an estimated life projection of only 18.5 years.

Phase I of the Site filled up significantly quicker than originally projected, and was full by late 1992, which represented a fill life cycle half that which was originally projected. As a result of the fill rates observed in Phase I, as well as the requirement to re-assess and upgrade the design of Phase II/III, Phase II/III was given a fill life cycle of 18.5 years in 1992 and was projected to close in circa 2011.

As the environmental movement took effect in the late 1990's and early 2000's, the Town of St. Marys evolved its waste management system to begin to incorporate numerous waste diversion programs into normal operation as a way to divert material from final disposal at the landfill, thus extending the life of the landfill site. Currently, the Town administers the following programs related to waste reduction and diversion:

- Automated Curbside Collection
- Municipal Hazardous and Special Waste Depot
- Leaf and Yard Waste Collection
- Scrap Metal Recycling
- Blue Box Recycling
- Electronic Waste
- Concrete and Asphalt Recycling
- Wood and Brush Grinding

Please refer to Appendices A1-A8 for specific details regarding each of the above noted Reduction or Diversion Program, as well as near, mid and long term initiatives for improving waste diversion.

### 3.0 Waste Disposal Rates

As stated in Section 2.0, the St. Marys landfill site opened in the winter of 1984. Initial estimates were that each Phase of the site would provide approximately 15-20 years' worth of disposal capacity. Unfortunately, Phase I of the Site filled up much more quickly than originally estimated. The average fill rate experienced for Phase I was 16,000 cubic metres per year and this portion of the Site was closed in late 1992.

Environmental requirements changed between the time that Phase I opened and Phase II/III were to open, and as stated in Section 2.0, the design was required to be reassessed. It was at this time that the design for Phase II/III was set for an annual volumetric fill rate of 15,000 cubic metres per year with a site life projection of 18.5 years. Through the time that Phase II/III was in operation, the Town made significant strides in waste reduction and diversion programs aimed at extending the life of the remaining approved landfill. Between 1992 and 2017, the Town has averaged approximately 12,000 cubic metres per year in disposal for Phase II/III, or approximately 3,000 cubic metres less than the original design estimates for the Site.

In 2017, the Town utilized approximately 13,161 cubic metres of approved landfill space for final disposal of material. Although this is slightly above the average fill rate over the life of these Phases, the Town's population has increased approximately 1,300 individuals, excluding IC&I additions to the waste stream, than that which was originally projected when the Site was designed.

*Table 1* details the historical disposal rates experienced at the landfill site for the Town of St. Marys from 1984 through 2017.

## 4.0 Waste Reduction & Diversion

Waste Reduction and Diversion programs can be found all across the Town of St. Marys, to not only maximize the useful life of existing infrastructure, but while also being mindful of the environment and delivering programs that meet or exceed residential expectations.

### Current Waste Reduction and Diversion Programs:

At the current time, the Town administers approximately eight (8) waste reduction and diversion programs consisting of, but not limited to: the Blue Box Program, Leaf and Yard Waste, Municipal Hazardous and Special Waste, etc.

For a complete list of current waste reduction and diversion programs, along with a general program summary, please refer to **Appendix A**.

Over the last three years (2015-2017), the various diversion programs administered by the Town, excluding Concrete and Asphalt recycling, have successfully diverted approximately 5,500 metric tonnes of waste from the landfill site. This equates to a residential diversion rate of approximately 44%.

Please refer to **Table 2** – Historical Waste Reduction & Diversion Rates for a complete summary of program diversion values, and the Towns annual residential diversion rate.

However, there is always the potential to improve existing program, enhance material collection and diversion in an effort to capture as much of the material as possible to reduce the volume that is placed in the landfill for final disposal.

For each program noted in Appendix A, near-term, mid-term and long-term initiatives have been proposed as part of this assessment in an effort to improve existing programs, and maximize waste reduction and diversion.

The following table depicts initiatives which may be found within Appendix A for existing programs and may be found at the bottom of each individual reduction and diversion program summary:

### **Example - Opportunities for Improved Waste Reduction & Diversion:**

<i>Initiatives (Near Term)</i>	<i>Initiatives (Mid Term)</i>	<i>Initiatives (Long Term)</i>
<p><i>Incentive Programs should be considered to promote at home diversion initiatives such as backyard composters and digesters.</i></p> <p><i>Education and Outreach programs should be developed and implemented to ensure residents are aware of reduction and diversion programs for enhanced utilization.</i></p>	<p><i>Consideration should be given to standardizing on a single 35 gallon container size for curbside collection. Such a standardization would promote diversion and reduction by limiting the volume of waste which can be disposed through the program.</i></p>	<p><i>Consideration should be given to an effective implementation of a Food &amp; Organics Collection Program.</i></p>



It is the intent of this Assessment to propose initiatives which can be considered now, to enhance existing programs, while also being mindful of the future by proposing longer-term initiatives that may be considered as the Town grows, demographics change, new technology emerges or regulatory requirements amended.

## Potential Waste Reduction and Diversion Programs:

While the Town has positioned itself well based on the implementation of historical waste reduction and diversion programs, new waste streams, and aftermarket uses continue to be developed, which opens up additional diversion programs for consideration.

As part of this Assessment, an additional Eight (8) waste reduction or diversion programs have been identified for consideration by the Town. Programs for consideration include, but are not limited to: Food and Organics Collection, Asphalt Shingles Recycling, textile recycling and landfill optimization.

For a complete list of potential waste reduction and diversion programs, along with a general program summary, please refer to **Appendix B**.

Similar to Appendix A, for each program noted in Appendix B, near-term, mid-term and long-term initiatives have been proposed as part of this assessment in an effort to facilitate discussions surrounding additional waste reduction and diversion programs, considerations for the Town and aligning initiatives with provincial government goals and strategies, as necessary.

As the Town positions itself for a long-term waste disposal facility via the Environmental Assessment for Future Solid Waste Disposal Needs, it will be the opportune time to consider new, modified or expanded waste diversion programs to position the Town to maximize infrastructure now and into the future. The inclusion of diversion programs into the detailed design of the landfill site will be vital to the success of the programs.

## 5.0 Implementation

Throughout this assessment, various near-term, mid-term and long-term initiatives were documented as a means for consideration in potentially enhancing diversion programs within the Town of St. Marys. Initiatives should be reviewed and investigated prior to any implementation based on the changing landscape of the Town as well as the implementation of strategies, frameworks and goals from the Provincial Government.

Implementation of any waste reduction and / or diversion program should be duly considered by the Town in collaboration with its Strategic Plan and the six (6) key pillars to ensure the overall outcome of positive net effects that benefit the community as a whole.

Due to the recent transition at a Provincial Level to move towards a waste free Ontario and a circular economy in the waste management sector, the long term fate of diversion programs, as well as potentially new initiatives are largely unknown and limit the ability to predict how initiatives will impact waste management practices within the Town. Initiatives detailed herein should be monitored along with broader provincial initiatives to evaluate the effectiveness of any waste reduction or diversion program. However, with the town currently undertaking an Environmental Assessment for Future Solid Waste Disposal Needs, and the identification of the preferred alternative of Landfill expansion, the Town

will be well positioned to incorporate enhanced diversion programs into the long term planning and design of the St. Marys Landfill Site, pending provincial approval.

## 6.0 References

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Strategy for a Waste Free Ontario, Building the Circular Economy, Ministry of the Environment and Climate Change, February 2017

## TABLES

Table No.	Description
Table 1	Historical Waste Disposal Rates
Table 2	Waste Diversion Numbers

Table 1

# HISTORICAL FINAL WASTE DISPOSAL RATES FOR THE ST. MARYS LANDFILL SITE

Waste Management System - 1984 Through 2017

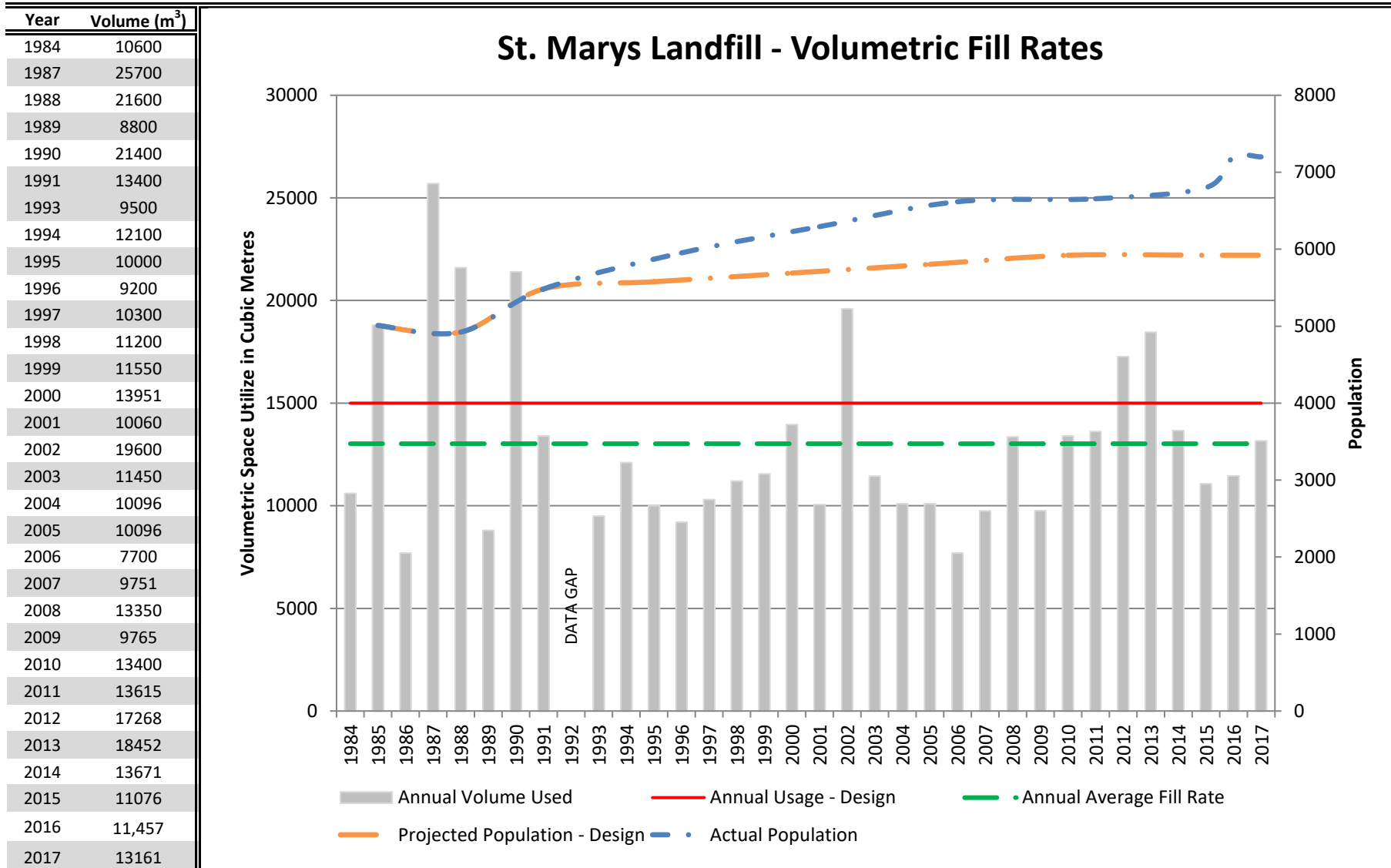


Table 2

## HISTORICAL WASTE REDUCTION & DIVERSION RATES

Waste Management System - 2010 through 2017

Material Category	Annual Weight							
	2010 (Tonnes)	2011 (Tonnes)	2012 (Tonnes)	2013 (Tonnes)	2014 (Tonnes)	2015 (Tonnes)	2016 (Tonnes)	2017 (Tonnes)
Curbside Collection - Landfill Disposal	1260	1268	1273	1475	1589.15	1374.8	1290.1	1309.41
Mars Environmental Curbside Collection	NA	NA	NA	212.58	287.55	339.51	421.35	441.7
Public Drop-off - Landfill Disposal	358	360	365	375	388.68	409	376.32	400
Curbside Collection - Blue Box Recycling	884	995.41	1095	1074	1078	1070	1049	1063
Brush Material	380	178	178	178	86.45	196	370.86	69.94
Wood Waste	NA	NA	NA	NA	79.31	85	188.61	114.51
Scrap Metals	NA	NA	NA	NA	6.63	4.29	4.53	1.95
Leaf & Yard Waste	611	419	294.7	229	374.71	444	390.08	400.55
MHSW Materials	12	4	4	2.04	2.47	6.05	9.21	3.71
Batteries	NA	0.5	0.5	0.512	0.407	N/A	N/A	N/A
Electronic Waste	24	20.49	14.16	9.2	9.8	38.54*	5.17	21.65
<b>Total Residential Waste</b>	<b>3529</b>	<b>3245.4</b>	<b>3224.36</b>	<b>3555.332</b>	<b>3903.157</b>	<b>3928.65</b>	<b>4105.23</b>	<b>3826.42</b>
<b>Curbside Collection - Landfill Disposal (exclu. Public Drop-off)</b>	<b>1260</b>	<b>1268</b>	<b>1273</b>	<b>1687.58</b>	<b>1876.7</b>	<b>1714.31</b>	<b>1711.45</b>	<b>1751.11</b>
<b>Total Diverted Waste</b>	<b>1911</b>	<b>1617.4</b>	<b>1586.36</b>	<b>1492.752</b>	<b>1637.777</b>	<b>1805.34</b>	<b>2017.46</b>	<b>1675.31</b>
<b>Diversion Rate</b>	<b>54%</b>	<b>50%</b>	<b>49%</b>	<b>42%</b>	<b>42%</b>	<b>46%</b>	<b>49%</b>	<b>44%</b>

**Notes:**

NA Not Applicable

Data estimated due to lack of reliable weights

Diverted waste reported above represented residential waste diversion only. IC&I excluded

\* 7.88 Tonnes collected at landfill site, 30.66 tonnes collected at PRC site.

## Existing Waste Reduction and Diversion Program

Appendix No.	Waste Reduction & Diversion Program
Appendix A1	Residential Curbside Collection Program
Appendix A2	Blue Box Recycling Program
Appendix A3	Municipal Hazardous & Special Waste Collection
Appendix A4	Electronic Waste
Appendix A5	Leaf and Yard Waste Collection
Appendix A6	Concrete and Asphalt Crushing
Appendix A7	Scrap Metal Recycling
Appendix A8	Wood and Brush Grinding

# APPENDIX **A-1**

## Residential Curbside Collection Program

The Town of St. Marys provides all single family residential homes with weekly curbside collection of refuse (garbage). Refuse is subject to non-collectable waste provisions set out in the Town’s By-Law No. 71-2012 which includes various items which are not permitted within the curbside collection program such as but not limited to auto parts, white goods, tires and household hazardous waste.

The curbside collection program within the Town is administered by the Bluewater Recycling Association whom utilizes an automated collection system for waste placement and collection. Through the Association, qualifying properties can select from three (3) container sizes to suit their needs. The three sizes for selection are 35, 65 and 95 gallon containers. An annual fee is paid by the resident based on the size of container selected.

As part of the waste collection program, the Town imposes mandatory recycling, and will not accept refuse for curbside pick-up, or at the landfill which contained more than 5% recyclable material, which is defined as any material which the Town accepts in the curbside recycling program.

## Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
<p>Incentive Programs should be considered to promote at home diversion initiatives such as backyard composters and digesters.</p> <p>Education and Outreach programs should be developed and implemented to ensure residents are aware of reduction and diversion programs for enhanced utilization.</p>	<p>Consideration should be given to standardizing on a single container size for curbside collection. Such a standardization could promote diversion and reduction by limiting the volume of waste which can be disposed through the program.</p>	<p>Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario as well as consideration to “Ontario’s Food and Organic Waste Framework”.</p> <p>Consideration should be given to a Food and Organics Collection program through municipal partnerships or as local third party facilities materialize.</p>

# APPENDIX A-2

## Blue Box Recycling Program

Prior to October of 2008, the Town of St. Marys recycling program consisted of a dual stream system in which residents were required to sort recyclables in a single blue box. Recycling was collected weekly by Bluewater Recycling Association (BRA).

In 2008, the Town in conjunction with BRA implemented an automated, single stream collection program for recyclables. Curbside collection now occurs on a bi-weekly basis, year-round, for a total of 26 recycling collection days. Residents typically use a 95 gallon container / wheelie-bin to set out their recycling. Residents are not allowed to place overflowing carts at the curbside. Material that will not fit into the carts can be taken to a recycling depot or held onto until the next collection day.

Industrial, Commercial and Institutional (IC&I), as well as multi-residential units are provided with large overhead bins placed in central locations. BRA is also tasked, in some instances with the collection of these containers.

In 2016, the Province of Ontario enacted the Resource Recovery and Circular Economy Act which aims to moves recycling responsibility to producers. As various targets and milestones are achieved and / or implemented through the phase in of this Act, it will be important for the Town and our service provider to meet any new requirements which may be adopted.

For additional information related to the automated program from BRA, please visit the following website:

<http://www.bra.org/recycling/>

## Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
<p>Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario which may include goals such as but not limited to:</p> <p>Standardize promotional and educational materials</p> <p><i>[Initiative to be developed and driven by the Ontario Government]</i></p>	<p>Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario which may include goals such as but not limited to:</p> <p>Begin designating new materials under producer responsibility regulations.</p> <p><i>[Initiative to be developed and driven by the Ontario Government]</i></p>	<p>Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario which may include goals such as but not limited to:</p> <p>Complete transition of Blue Box program to producer responsibility.</p> <p>Continue to designate additional materials under producer responsibility regulations.</p> <p><i>[Initiative to be developed and driven by the Ontario Government]</i></p>



## Municipal Hazardous and Special Waste Collection

Household hazardous materials can be dangerous to people as well as the environment. It is because of this, that the Town of St. Marys administers a Municipal Hazardous and Special Waste Depot for residents of the Town of St. Marys as well as the Municipality of Perth South whereas unwanted or unused household products can be safely diverted from landfill and properly disposed and / or recycled.

The depot is operated at the St. Marys Landfill Site during normal operating hours where residents can dispose of this material at no charge. Material, once inspected and received by landfill staff, is then properly sorted into containers for transportation to a suitable recycling, reuse or disposal facility.

Materials accepted under this program are as follows:

Acids	Bleach	Garden Chemicals	Pool Chemicals
Aerosol Cans	Light Bulbs	Household Cleaners	Propane Tanks
Antifreeze	Fertilizers	Motor Oil	Solvents
Bases	Paints / Stains	Pesticides	Batteries

The depot administered by the Town is currently for residential use only and is not designed or permitted for Industrial, Commercial or Institutional (IC&I) utilization. IC&I properties, whom produce specific waste on regular intervals are required to contract and dispose of their waste properly through third party suppliers.

## Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Develop Education and outreach material to better inform residents of the diversion program, which materials are included, which are not and the requirements for acceptance of material, such as containers, labels, etc.	Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario.  Program / materials should be reviewed and updated as materials are transitioned or designated to producer responsibility.	Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario.  Consideration should be given to implementing disposal bans on materials under existing waste diversion programs.

# APPENDIX A-4

## Electronic Waste

In circa 2005, the Town of St. Marys banned the disposal of electronic equipment (E-waste) from the landfill site. The Town currently has an Agreement with Greentec, located in Stratford, Ontario to provide a collection container, and receive e-waste collected at the landfill.

The E-waste depot is located at the landfill site for residents of the Town of St. Marys where qualifying old, unused or damaged electronic equipment can be safely and properly disposed. The depot is open during normal site operations at no charge to residents.

The program accepts a large variety of materials such as, but not limited to:

Computers, printers, pagers, DVD players, radios, etc. For a complete list of materials accepted under the program, please visit the Towns official website at: <http://www.townofstmarys.com/en/living-here/E-waste.aspx>.

The Town receives revenue from the program based on the value of material collected. This revenue is utilized by the Town to assist in funding waste management initiatives and operations.

### Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Develop Education and outreach material to better inform residents of the diversion program, which materials are included and which are not.	Consideration should be given to expanding access to the E-waste depot to ensure a more convenient experience for program users while being mindful of theft and scavenging which can occur at less secure locations.	Follow the "Strategy for a Waste Free Ontario," developed by the Province of Ontario.  Modify program as required based on provincial initiatives.

## Leaf and Yard Waste Collection

In 2001, the Town of St. Marys introduced the yard waste collection program, which provided curbside collection of yard waste from April until November of each year. Residents were required to place collectibles in compostable paper bags, cardboard boxes, reusable containers or bundled stacks. Acceptable items include organic materials such as: yard plants, weeds, hedge and shrub trimmings, tree limbs (10 cm diameter maximum), lawn cuttings, etc.

Food wastes are not currently accepted.

Additionally, leaf and yard waste could be dropped off at the landfill free of charge. Weekly or twice weekly curbside collection was completed by the Town, depending on weekly needs.

In circa 2013, the Town reduced the leaf and yard waste program, limiting the curbside collection to 5 weeks in the spring and 5 weeks in the fall. Residents could still bring material to the landfill site free of charge. In 2014, the Town again made modifications to this program due to strong public opinion on changes implemented the prior year. The program administered in 2014 included 11 collection days, consisting of weekly collection in the spring and fall, and once per month throughout the summer. In addition to this change, the Town also opened a new convenience depot for Leaf and Yard waste material located at the Municipal Operations Centre, located at 408 James Street South where residents could drop-off acceptable material at their convenience.

In 2017, the Town made additional enhancements to the leaf and yard waste program which consisted of bi-weekly collection from May through November. Yard waste is delivered to the landfill and composted in open windrows.

Compost material derived from the materials collected is stockpiled at the Site to assist in site alterations, soil additives for final cover, etc. Material generated from this program is not transported off-site.

### Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Develop Education and outreach material to better inform residents of the diversion program, which materials are included and which are not. Enhance awareness of collection days to improve program utilization.	Consideration should be given to modifying the program on a year-by-year basis to enable curbside collection of materials based on weather. For instance, an early spring means residents are required to dispose of material on their own, or hold onto material until collection starts later in May. Similarly, an early winter means no material for collection days.	Look for partnerships and economies of scale to enable the addition of materials to the program.

# APPENDIX A-6

## Concrete and Asphalt Crushing

In circa 1993, the Town of St. Marys started separating concrete and asphalt materials. The material is crushed, screened and stockpiled to be re-used as gravel for many different municipal projects. In 2009, an estimated 12,000 tonnes of concrete and asphalt was crushed and stockpiled, which represented approximately 8 years' worth of material. In 2014, the Town replenished the stockpile of this material and crushed, screened and separated years' worth of material again.

This program diverts material from household renovations, construction projects and private demolition and allows the Town to secure an economical source of aggregates. There is no cost for residents or contractors to utilize this program.

Materials which are accepted under this program consist of, but not limited to:

Asphalt (rubble, grindings, millings), bricks and paving stones, concrete, gravel, etc.

### Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Develop Education and outreach material to better inform residents and contractors of the diversion program, which materials are included and which are not.	--	--

# APPENDIX **A-7**

## Scrap Metal Recycling

The Town of St. Marys has a couple of different scrap metal diversion programs within the Town. Scrap metal can be dropped off at the landfill site, free of charge where it is taken to a recycling facility. Since 2014, the Town has diverted approximately 17.5 tonnes of scrap metal from the landfill through this drop-off depot.

In addition to this program, the volunteer fire department for the Town has undertaken a “spring clean-up” which allows residents to place refuse to the curb for collection. All scrap metal is collected separately by the volunteers and recycled accordingly. In 2010, it is estimated that approximately 13 tonnes of scrap metal was collected and diverted through this program (The Corporation of the Town of St. Marys, 2011).

The Scrap metal drop off depot, as well as the volunteer firefighters collection events allows the Town to properly separate and dispose of scrap metal which is easily diverted from landfill.

### **Opportunities for Improved Waste Reduction & Diversion:**

<b>Initiatives (Near Term)</b>	<b>Initiatives (Mid Term)</b>	<b>Initiatives (Long Term)</b>
Develop Education and outreach material to better inform residents and contractors of the diversion program, which materials are included and which are not.	Consideration should be given to collaborations with local scrap metal recovery centres to promote material separation and drop off.	--

## Wood and Brush Grinding

The Town of St. Marys currently administered a scrap wood and brush program aimed at reducing the impact that this material has on landfill capacity. Currently, scrap wood and brush are diverted from landfill operations and stockpiled at the landfill site (or Municipal Operations Centre for Brush). Once stockpiled materials warrant, typically once per year, the material is ground into chips and stockpiled at the St. Marys Landfill Site for use as alternative daily cover during winter operations.

The heat emitted by the chipped material prevents freezing throughout the winter, and allows for the mixing with soil to improve the effective daily covering of waste at the landfill site. The application of wood chips as an alternative daily cover is typically administered from November 15<sup>th</sup> to April 1<sup>st</sup> of each year, or as weather conditions warrant.

### Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Develop Education and outreach material to better inform residents and contractors of the diversion program, which materials are included and which are not.	Consideration should be given to relocate the brush pile at the MOC. During landfill site designs consideration to allow for expanded access to wood and brush drop-off to consolidate drop-off areas and limit redundancy.	Consideration should be given to alternative cover solutions instead of wood-chips for winter operations to permanently divert material from landfill / landfill operations.

# APPENDIX **B**

## Potential Waste Reduction and Diversion Programs

Appendix No.	Waste Reduction & Diversion Program
Appendix B1	Food and Organics Collection
Appendix B2	Cigarette Waste Recycling Program
Appendix B3	Asphalt Shingles Recycling Program
Appendix B4	Mattress & Box Spring Program
Appendix B5	Landfill Optimization
Appendix B6	Backyard Composting Initiatives
Appendix B7	Textile Recycling
Appendix B8	IC&I Diversion

## Food and Organic Waste Diversion Program

The Town of St. Marys has many programs aimed at diverting or reducing the volume of waste received at the landfill site for final disposal. However, one program which is not yet implemented, that would have a significant impact on volume utilization and diversion is the use of a Food and Organic Waste diversion program.

Not only does managing resources efficiently benefit the people of our community, it also aids our environment and economy. Ontario's Food and Organic Waste Framework Action Plan relates back on growing a circular economy, outlining commitments constructed by the province in regards to food and organic waste. The Framework states that food and organic waste must be considered a resource rather than a waste.

The Provincial Framework strives towards the achievement of the following objectives; reduce food waste, recover resources from food and organic waste, support resource recovery infrastructure and promote beneficial uses.

The first and most crucial objective is to prevent and scale down the amount of food that becomes waste. The environment, economy and society of the province will benefit greatly from this step, ensuring that edible food does not end up as waste. Education is one key way in cutting down food and organic waste. Other ways to improve the reduction of food and organic waste is by using web-based platforms (such as social media), incorporating waste reduction within schools and supporting research that aims to reduce organic food waste.

Increasing resource recovery of organic food waste will help towards reaching the goals of zero waste and zero greenhouse gas emissions from the waste sector, more specifically from the Industrial, Commercial and Institutional (IC&I) sector. Amending the 3Rs Regulations will help decrease the amount of wastage created by the IC&I sector, which presents some of the best opportunities to increase resource recovery and build a circular economy. Banning food and organic waste from ending up in disposal sites would also improve the recovery of food and organic waste. Management practises are recommended to support effective use of public waste receptacles, going hand-in-hand with the resource recovery of food and organic waste. This would beneficially impact the landfill, treatment sites and transfer stations.

Another way to recognize the economic profits of a circular economy is by turning food and organic wastes into valuable end-products. It is essential for Ontario to possess a sufficient infrastructure with modernized technology to process food and organic waste into valuable resources. Reviewing present resource recovery systems and updating them will help with this. Training for new or refined technology may be required.

Being able to endorse end-products of food and organic waste is just as critical to possessing a sufficient infrastructure with technology. Soil health, crop growth, renewable natural gas, and carbon storage are some of the examples of end-products to promote. The province is to review regulatory approaches to soil amendments as well as encourage the on and off-farm end-use of soil amendments made from recovered organic resources (ex. Compost, Digestate and Biosolids).



# APPENDIX B-1

## Benefits and Losses

There are multiple benefits towards Ontario’s Food and Organic Waste Framework, especially for causes that are long-term. One of the more evident benefits being that the Framework will improve greenhouse gas emissions. In 2015, greenhouse gas emissions which originated from the waste sector accounted for 8.6Mt of carbon dioxide. By carrying out the Framework, greenhouse gas emissions will decrease substantially over the long-term. The Framework will save both consumers and businesses money, while improving access to healthy and fresh food for the province. Food and Organic Waste can be turned into compost or Digestate, which helps better the health of the soil, reduce erosions as well as improve water quality.

Although there are a large number of benefits relating to Ontario’s Food and Organic Waste Framework, there are some losses that may arise during the execution phase. Many larger municipalities have implemented Source Separated Organics (SSO) programs as a way to divert food and organic waste from final disposal in landfills. Recycling food waste for compost results in upstream benefits related to the creation of nutrient rich soil supplements, thus reducing the total volume required for final disposal. Unfortunately, SSO programs are extremely costly to administer in smaller communities, however, could have a significant impact on diversion initiatives within the Town. The implementation of an SSO program is not something that could be implemented and administered quickly, however is a program which should be considered in the future for the Town as technologies, general acceptance, and local third party facilities come online.

According to the Food and Organic Waste Policy Statement, municipalities that have a population of over 50,000 and greater than or equal to 300 persons per square kilometre are required to provide a food and organic waste collection. Based on this information, the Town of St. Marys is not required to provide a food and organic waste collection, but does have the option of doing so in the future.

## Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
<p>Incentive Programs should be considered to promote at home diversion initiatives such as backyard composters and digesters.</p> <p>Education and Outreach programs should be developed and implemented to ensure residents are aware of reduction and diversion programs for enhanced utilization.</p>	<p>Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario as well as consideration to “Ontario’s Food and Organic Waste Framework”.</p> <p>Assess Town needs and requirements along with regulatory requirements for potential enhancements to the Leaf and Yard Waste Program.</p>	<p>Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario as well as consideration to “Ontario’s Food and Organic Waste Framework”.</p> <p>Consideration should be given to a Food and Organics Collection program through municipal partnerships or as local third party facilities materialize.</p>

# APPENDIX B-2

## Cigarette Waste Recycling Program

The Town of St. Marys has been approached about investigating and implementing a Cigarette Waste Recycling program via TerraCycle.

TerraCycle's cigarette program allows participants to administer the recycling of cigarette waste. Excluding the cardboard packaging of the box, the program accepts every portion of the cigarette. This includes the filter, outer plastic, cigar stubs, inner foil, rolling paper and ash.

After collecting the cigarette waste in canisters', it must then be shipped out for recycling. The waste is sent in a sturdy plastic container that should be completely dry. Once collected, cigarettes and packaging are separated by composition. The waste is then melted into hard plastic that can be remodeled to create industrial products such as plastic pallets. Ash and tobacco are separated out and composted in a specialized process.

Through the TerraCycle program, points can also be accumulated and redeemed for a variety of charitable gifts or a payment of \$0.01 per point to a non-profit organization or school. Any shipments over 3lbs will receive \$1.00 per pound of waste while anything lower will amount to \$0.00.

Currently, the Town as well as various merchants have grey pedestals which collect cigarette butts located around Town buildings as well as outside various stores. There is no cost to participate in TerraCycle's cigarette program; however, there is a cost for the receptacles which amounts to \$100.00. In addition, it may prove to be difficult to find locations that are optimal to dispose cigarette waste. Public areas such as municipal buildings, playgrounds, etc. have strict no-smoking policies in place which limit the distance smoking is permitted around areas, or entrances. The placement of a canister near these areas to maximize use may give the impression that smoking is permitted in these locations. In addition to the above, the placement of a canister in an inopportune location would limit the effectiveness of the program, and program utilization.

## Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Consideration should be given to investigating the potential adoption of the Terracycle program. A thorough review of the program as well as review of case studies where the program has been adopted elsewhere should be completed and presented to Council for consideration.	Mid-term and Long-term initiatives to be determined based on completion of program review and recommendation.	Mid-term and Long-term initiatives to be determined based on completion of program review and recommendation.

# APPENDIX B-3

## Asphalt Shingles Recycling Program

An asphalt shingles recycling program should be considered by the Town of St. Marys as a means to divert material from the landfill and maximize current and future volume within the landfill site. The Town has historically consulted with various other local municipalities whom currently administered an asphalt shingle recycling program as well as industry leaders in shingles recycling to gain a full and complete understanding of how a program may be implemented and administered within the Town of St. Marys.

Unfortunately, shingles have never been tracked separately at the landfill as to provide accurate annual tonnages, but instead were lumped in with Construction & Demolition waste. As a result, accurate material weights / volumes are not currently known for this material stream.

Additionally, the current design and set-up at the St. Marys Landfill Site is not equipped for a shingles diversion program. Based on discussions with area municipalities and industry leaders, there are two types of transfer stations which could be constructed to accommodate such a program. One being an elevated platform, roll-off bin transfer facility and the other being a bunker style transfer facility which would be similar to the current leaf and yard waste transfer facility located at the Municipal Operations Centre. Both transfer station options would require a significant capital investment.

It is also important to note that the current Environmental Compliance Approval (ECA) for the landfill site does not include provisions for an asphalt shingle recycling program to be administered. Currently, the Transfer facility at the landfill site is limited to: electrical and electronic equipment, cardboard, scrap metal and blue box recycling material and is based on the design and operation of the facility as presented within an ECA application circa 2008. For a shingles program to be administered within the Town of St. Marys, an application would need to be made and subsequently, approved by the Ministry of Environment, Conservation and Parks (MECP), and would require updates to the design and operations material previously submitted.

An Asphalt Shingles recycling program should be considered by the Town as a means to increase diversion from the St. Marys landfill site. With the pending completion of the Environmental Assessment for Future Solid Waste Management Needs, and the identified preferred alternative of Landfill Expansion, the Town will be ideally situated to incorporate such a program, and the capital infrastructure requirements into the future design, and operations of the landfill site. Council for the Town of St. Marys will need to determine if the expenses of implementing and operating such a program are worthwhile for the Town, Businesses and Residents.

## Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Modify waste tracking system to identify asphalt shingles to assist in diversion program cost estimates.  Stakeholder consultation with residents, contractors, etc. on the merits of such a program, and its potential development.	Develop an economically viable and sustainable asphalt shingles recycling program, and incorporate its implementation into any future site design and alterations.	Follow the "Strategy for a Waste Free Ontario" developed by the Province of Ontario.  Consideration should be given to banning shingles from the Landfill Site should a sustainable diversion program be established.

# APPENDIX B-4

## Mattress and Box Spring Recycling

The Town of St. Marys currently accepts mattresses and box spring for final disposal at the Landfill Site, and represents another potential waste stream for diversion. Mattresses and Box Springs are a low density high volume product that are known to cause significant operational difficulties in their waste placement, compaction and covering processes, while also causing significant maintenance and / or damage to compaction equipment due to the metal springs found within the material which can become entangled on equipment.

Diversion programs are available for these materials which could fully redirect them from the landfill site. Various neighbouring municipalities currently offer mattress and box spring recycling programs that redirect the material to third party processors.

### Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Consideration should be given to investigating the merit of a Mattress and Box Spring recycling program for the Town, and how such a program could be delivered.	Develop a cost effective and sustainable Mattress and Box Spring recycling program. Consideration should be given to potential municipal partnerships, or Public Private Partnerships for a cost effective program delivery.	Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario.  Consideration should be given to future banning of Mattresses and Box Springs from the St. Marys Landfill.

## Landfill Optimization

How a landfill is managed on a daily basis can have a significant impact on the long term utilization of the Site. Optimization activities could be implemented at the St. Marys Landfill Site which would benefit the current Site, as well as any future approved filling capacity.

Along with daily cover material, the Landfill Site is currently operated with compaction equipment utilized to position and place refuse (garbage). In 2013, the Town, in partnership with the Sites Engineering Consultant completed mandatory landfill operator training for all personnel within the Public Works Department. This provided all staff with renewed knowledge of landfill operations, compaction techniques, etc. Over the last several years, in-situ density at the landfill site has ranged from a low of 343 Kg/m<sup>3</sup> to as high as 519 Kg/m<sup>3</sup>, for an average in-situ density over the last three (3) years of 425 Kg/m<sup>3</sup>. Although this can be seen as a positive increase over historical operations, the in-situ density is still less than that which would be anticipated with the use of compaction equipment.

While improvements have been made, additional work can be completed to further improve Site operations. The in-situ densities referenced above are still less than what would be expected for a landfill that utilizes compaction equipment. Part of this may be related to various IC&I material that does not compact well within the Site. Town staff has been working with local industry on potentially diverting specific waste from the landfill site to assist with in-situ densities. However compaction techniques and filling practices will allow for the most significant optimization at the Site.

Another optimization at the Site would be additional earth moving equipment. Currently all operations are completed by utilizing compaction equipment which includes the placement of daily cover. Compaction equipment is not intended to move earth on and off of material and as such creates operational challenges in both placing cover material, and removing at the start of each working day. Significant volume utilization savings could be realized with the consideration of the purchase or utilization of appropriate earth moving equipment going forward.

## Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
<p>Continue to provide refresher training for operators on landfill operations and compaction techniques.</p> <p>Provide front line staff with enhanced direction, guidance and training to maximize operational techniques and waste densities through waste placement strategies and filling plans.</p>	<p>Pending approval for landfill expansion, systematically plan placement of refuse to maximize infrastructure and in-situ density. Consideration should be given to purchase GPS system and software to maximize operations.</p> <p>Consideration should be given to the purchase of a suitable earth moving equipment for daily cover operations.</p>	<p>Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario related to IC&amp;I diversion initiatives.</p> <p>Investigate the use of alternative cover systems such as tarps to reduce and limit the volume of earth material used at the Site.</p>

# APPENDIX B-6

## Backyard Composting Initiatives

Backyard composting is a cost-effective tool for waste diversion, but typically results in a smaller percentage of overall diversion. This is attributed to difficulty in getting public involvement and portions of the organics stream which cannot be composted in such a manner for instance, dairy, meats, fish, etc. According to Ontario Regulation 101/94, a local municipality that has a population of at least 5, 000 shall establish, operate and maintain a leaf and yard waste system. That system must include:

- a) The provision of home composters to residents by the municipality at cost or less;
- b) The provision of information to residents;
  - Publicizing the availability of home composters;
  - Explaining the proper installation and use of home composters and the use of compost; and,
  - Encouraging home composting.

In circa 2008, the Town in association with BRA, distributed backyard digesters to residents. This partnership turned out to be largely successful, so much so that the original 100 composters were sold out within 30 minutes. The Town funded approximately 50% of the cost of the digester.

The Green Cone is an at-home composting system which offers an alternative means of disposing of organic kitchen waste to Anaerobic Digestion (AD) and In-Vessel Composting (IVC). The advantage to the Green Cone over traditional techniques is that it takes all types of food waste (meat, dairy, bones, vegetables and even animal feces). Essentially, it allows residents to take everything from the kitchen table and dump it directly in. Advantages to this system are that it does not need to be turned or emptied more than once every few years. In addition, as an enclosed system, it does not attract vermin or other animals.

## Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Continue to publicize and encourage at home diversion via composting and digestion. Develop educational material to promote such programs.	Consideration should be given to developing a long term, sustainable incentive program for composters and/ or digesters. Seek assistance in funding for at home programs such as grants, sponsors and or donations.	Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario as well as consideration to “Ontario’s Food and Organic Waste Framework”.  Consideration should be given to a Food and Organics Collection program through municipal partnerships or as local third party facilities materialize.

# APPENDIX B-7

## Textile Recycling

According to Value Village, approximately 85% of textiles are disposed into the landfill. Most of these textiles that are disposed of could avoid the landfill entirely by being recycled or reused by industries and consumers.

There are already multiple locations within the Town of St. Marys where one can donate their clothing for reuse. Places include the downtown Thrift Store in association with the Salvation Army as well as red bins which are provided by the Canadian Diabetes Association. In addition, the Canadian Diabetes Association periodically contacts the residents of the Town to ask for any unwanted or used clothing. Donating clothing is at no cost to residents and textiles will be picked up at their doorstep within a few days.

Through these donation programs, various textiles, such as but not limited to the following can be donated:

Accessories and bags, clothing, curtains, blankets, towels, sheets, shoes, sleeping bags, etc.

However, donating material is only addressing one stream of textile waste, and the question becomes what to do with material that is not in a condition to be donated. A recently launched program in the neighbouring City of Stratford aims to tackle the textile material that is not in a condition for donation. The Town should consider such a program for its own waste management programs for increased diversion.

## Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
Education and Outreach programs should be developed and implemented to ensure residents are aware of reduction and diversion programs for enhanced utilization.	Consideration should be given to developing a textile diversion program to collect and divert material that is not suitable for donation.  The Town should seek municipal partnerships and or Public Private Partnerships for an economically sustainable program delivery.	Consideration should be given to banning the disposal of textiles at the landfill.  Look for and implement more programs to recycle textiles.

## Increase Industrial, Commercial & Institutional (IC&I) Diversion

In order to strive for a zero-waste economy, the industrial, commercial and institutional (IC&I) sector must increase its diversion rates. According to the Ontario’s Food and Organic Waste Framework Action Plan, the IC&I sector is accounted for approximately 45% of all food and organic waste in Ontario, which opens a large potential for improvement. Additionally, only 25% of the food and organic waste created by the IC&I sector is diverted.

Based on the Provincial goal of establishing a circular economy, the IC&I sector will be required to focus on the following procedures to drive higher resource productivity, innovation and economic growth;

1. **Fewer Materials** - Using fewer raw materials in the beginning will decrease the amount of extra wastage.
2. **Design** - Products and packaging should be designed to be more durable which will make it last longer. They should also be able to be recycled once its lifecycle terminates. New materials should be designated to ensure that the producers are entirely responsible for recovering more materials from products and packaging.
3. **Produce** - Businesses should collaborate and coordinate across sectors to reduce greenhouse gas production and fossil fuel use.
4. **Reuse, Repair and Recycle** - Implement programs for the collection of products in order to reuse repair or recycle them.

The above targets for developing a circular economy, and a zero waste footprint in Ontario will be largely driven by regulations and requirements from the Provincial Government, which will in turn have beneficial impacts on the waste reduction and diversion efforts of the Town. In addition to provincial goals and objectives, the Town can also work with local industrial partners at reducing or redirecting waste from the landfill site by sourcing alternative disposal or recovery options.

### Opportunities for Improved Waste Reduction & Diversion:

Initiatives (Near Term)	Initiatives (Mid Term)	Initiatives (Long Term)
<p>Consideration should be given to working with the local IC&amp;I section to reducing or diverting low weight, high volume material which may have alternative uses, or recovery options.</p> <p>Develop Education and Outreach material to promote IC&amp;I diversion initiatives.</p>	<p>Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario as well as consideration to “Ontario’s Food and Organic Waste Framework”.</p> <p>Assess Town needs and requirements along with regulatory requirements for potential enhancements to IC&amp;I waste diversion.</p>	<p>Follow the “Strategy for a Waste Free Ontario” developed by the Province of Ontario as well as consideration to “Ontario’s Food and Organic Waste Framework”.</p>



**ENVIRONMENTALLY SUSTAINABLE SOLUTIONS FOR WASTE REDUCTION & DIVERSION FOR TODAY, TOMORROW AND FUTURE GENERATIONS**

**AUGUST 2018**



The Corporation of the Town of St. Marys  
*Public Works Department*

August 2018





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## Appendix B

### Survey of Landfill Operators



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## **Attachment B - Waste Export Alternatives Surveys**

### **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

**R.J. Burnside & Associates Limited  
292 Speedvale Avenue West Unit 20  
Guelph ON N1H 1C4 CANADA**

**December 2019  
300032339.0000**

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## Appendices

Appendix A Municipal Survey

Appendix B Private Waste Service Providers Survey

Attachment B - Waste Export Alternatives Surveys  
December 2019

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## 1.0 Waste Export Alternatives Surveys

Per the Terms of Reference (TOR), some data for evaluation of the export Methods was collected through a survey of municipal and private waste service providers. Private waste service providers were asked a series of questions focussed on their operations, equipment, costs, and contract terms. A separate letter was sent to municipalities that operate landfill sites to determine if they would consider providing disposal capacity to the Town of St. Marys. These surveys, discussed in more detail below, were distributed in March 2015 with responses mostly received during April 2015.

### 1.1 Municipal Survey

Local (Municipal) Landfills within approximately 100 km of St. Marys are generally operated for the use of the municipality or county in which they are located. The only exception at the time of our surveys that the Study Team was aware is the Green Lane Landfill. The Green Lane Landfill was privately owned until 2007 when it was purchased by the City of Toronto for their waste disposal needs, making it a municipal landfill. A figure showing the location of these landfills is included in Appendix A.

No municipalities (sites) have previously expressed an interest in receiving waste from the Town of St. Marys. However, newspaper reports from early 2015 indicated that at least two municipalities were considering accepting waste from outside their communities as a revenue generating measure. With this in mind, the Town of St. Marys sent a letter asking if the municipality was (or was not) interested, subject to negotiations, in providing disposal capacity.

The survey was sent to 14 municipalities. Ten of these municipalities provided a response, written or by telephone, indicating that they were not interested in accepting St. Marys waste. The mailing list, an example letter/survey and the response summary table is provided as Appendix A.

Despite the apparent lack of interest in accepting the Town's waste, the Study Team decided to proceed with evaluating Local (Municipal) Landfills as a potential export Method.

### 1.2 Private Waste Service Providers Survey

The private waste service providers (operators) survey was developed and sent to various disposal sites, transfer facility and waste hauling (trucking) companies. This

<sup>1</sup> <http://www.lfpress.com/2015/04/16/having-taken-a-big-revenue-hit-when-it-lost-two-major-customers-at-its-landfill-the-city-is-courting-new-clients-a-move-that-could-recoup-500000-of-the-lost-cash>, and <http://www.mitchelladvocate.com/2015/03/30/taking-others-garbage-discussed-as-revenue-option-for-west-perth>. Both accessed May 4, 2015.

Attachment B - Waste Export Alternatives Surveys  
December 2019

survey was intended to collect realistic, locally focused information on a variety of subjects including typical costs, contract length, site capacities, and haulage information. Burnside had identified a number of haulage firms and transfer station owners as well as disposal sites to assist in the preparation and population of the evaluation matrix. The survey and the list of private operators invited to respond are included in Appendix B.

Information collected by this survey was reviewed by the EA Team. The responses were used in evaluating the various export Methods. Numerical responses relating to costs and fuel economies helped determine overall implementation costs and emissions rates as described below.



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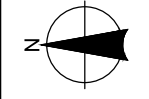
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## Appendix A

### Municipal Survey





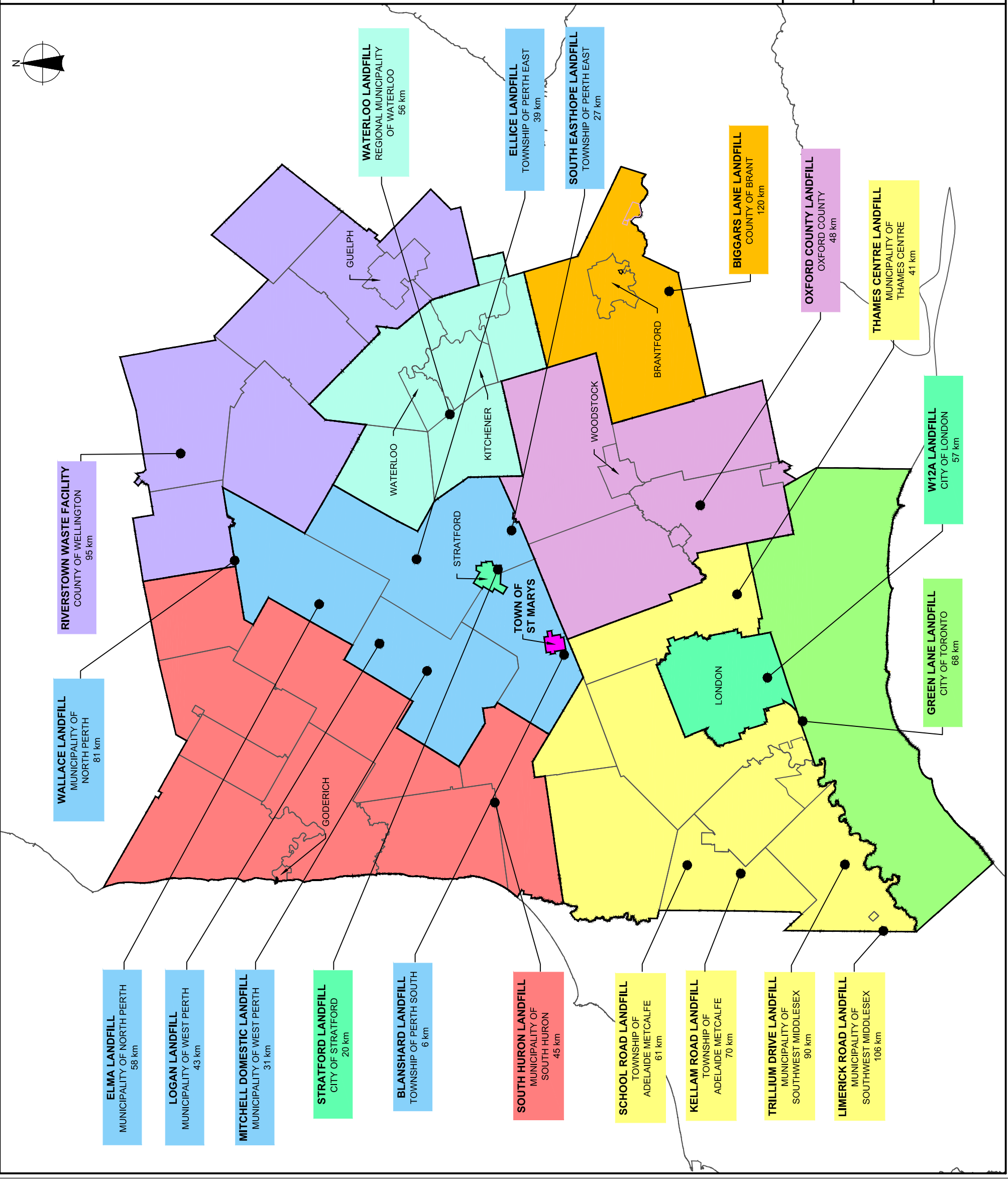
- LEGEND**
- HURON COUNTY
  - MUNICIPALITY OF MIDDLESEX CENTRE
  - ELGIN COUNTY
  - OXFORD COUNTY
  - BRANT COUNTY
  - PERTH COUNTY
  - WELLINGTON COUNTY
  - REGIONAL MUNICIPALITY OF WATERLOO

**LANDFILL NAME**  
OWNER  
DRIVING DISTANCE TO  
ST. MARYS LANDFILL



Client / Report  
**TOWN OF ST MARYS**  
FUTURE SOLID WASTE DISPOSAL NEEDS  
ENVIRONMENTAL ASSESSMENT

Figure Title  
**MUNICIPAL EXPORT OPPORTUNITIES  
AREA MAP**





March 24, 2015

Lyndon Kowch  
Manager of Public Works  
City of Stratford  
303 King St.  
Stratford ON N5A 4S5

**Subject: Town of St. Marys Solid Waste Disposal Needs Environmental Assessment Export Alternatives Assessment**

The Town of St. Marys is undertaking an Environmental Assessment (EA) for solid waste disposal. The EA Terms of Reference (TOR) has recently been approved by the Minister of Environment and Climate Change. The TOR's problem statement reads:

*The Town of St. Marys must identify a solution that addresses the Town's post-diversion municipal solid waste disposal needs over a 40 year planning period in a technically and economically feasible manner while minimizing impacts to the environment*

The TOR requires St. Marys to review the possibility of using approved waste disposal capacity owned by others, including municipalities such as your own. To this end, St. Marys would appreciate if you could complete the brief survey form attached to this letter. A written response is requested to facilitate our EA documentation.

As background, during 2014 the St. Marys Landfill accepted a total of 7,325 tonnes of waste; 1,978 tonnes from residents and 5,347 tonnes from industrial, commercial and institutional sources. It is expected that disposal requirements will grow approximately 1% annually. St. Marys is looking for disposal of this entire waste stream for a 40 year period, though shorter periods will be considered. Any disposal arrangement would be subject to further discussion, negotiation, environmental approvals, and so on. With this survey St. Marys is merely looking to see if your municipality is interested in such further efforts. It in no way commits you to accepting our waste.

Should you have any questions please feel free to contact either one of the study team representatives indicated on the form.

Respectfully,  
  
Bruce Grant, CAO  
Town of St. Marys

032336 Mun-Disposal Survey  
18/03/2015 5:33 PM

**St. Marys Survey of Municipal Disposal Opportunities**

The information collected by this survey will be made available to the public as part of the Town of St. Marys Environmental Assessment process. Please send the completed survey via mail, fax or email to Burnside. Should you have any questions while preparing your response, please contact one of the study team representatives.

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Email: St.Marys.Waste.EA@jburnside.com  
Tel: 289-545-1051 Fax: 905-420-5247

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
Email: dtblake@town.stmarys.on.ca  
Tel: 519-284-2340

Municipal contact for any related correspondence: (please indicate corrections or updates)

Name	Lyndon Kowch		
Title:	Manager of Public Works		
Name of Municipality:	City of Stratford		
Address 1:	303 King St.		
Address 2:			
City, Prov. & Postal Code:	Stratford ON N5A 4S5		
Phone:	(519) 271-0250, Ext 255	Fax:	(519) 273-2720
Email:	lkowch@stratfordcanada.ca		
Preference (check one):	<input type="checkbox"/> mail, <input type="checkbox"/> phone, <input type="checkbox"/> fax, <input type="checkbox"/> email		

Please complete the following statement (place check marks as appropriate):

- Subject to further discussion, negotiations, environmental approvals, etcetera, we are
  - interested  not interested
 in providing solid waste disposal capacity to the Town of St. Marys.
- This has been confirmed/decided by:
  - Municipal Council, Committee of the Whole or similar decision.
  - Discussion with the Courty Warden, Mayor, Reeve or similar.
  - Discussion with the Chief Administrative Officer, Clerk, or similar.
  - Other means (please describe)

3. I am authorized to make these statements on behalf of the municipality.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
(print name) \_\_\_\_\_  
mm / dd / yyyy

A response to Burnside by April 17, 2015 would be appreciated.

**Town of St. Marys Solid Waste Disposal Needs Environmental Assessment  
Export Alternatives Assessment  
Potential Municipal Hosts - Mail Merge Listing & Response Table**

First	Last	Title	Municipality	Address1	Address2	City	PCode	Response						
								From	Title	Date	Method	Yes/No		
Das	Soligo	Operations Superintendent	County of Wellington	74 Woolwich Street		Guelph	N1H 3T9							
Pamela	Antonio	Waste Management Coordinator	Oxford County	384060 Salford Road		Salford	N0J 1W0	Peter M. Crockett, P.Eng.	Chief Administrative Officer	21-Apr-15	Email w/ attachment	No		
Deanna	Dakin	Waste Management Coordinator	Regional Municipality of Waterloo	925 Erb Street West		Waterloo	N2J 3Z4							
Don	Giberson	Environmental Services Director	Municipality of South Huron	322 Main Street South	P.O. Box 759	Exeter	N0M 1S6	Don Giberson	Environmental Services Director	13-Apr-15	Email w/ attachment	No		
Ken	Bettles	Director of Pulic Works	Township of Perth South	3191 Road 122		St. Pauls	N0K 1V0	Ken Bettles	Director of Pulic Works	8-Apr-15	Email w/ attachment	No		
Annette	Synowiec	Manager	City of Toronto	25th F.I.E. 100 Queen St.		Toronto	M5H 2N2	Annette Synowiec	Director of Policy, Planning & Support	21-Apr-15	Telephone	No		
Mike	Kraemer	Operations Manager	Municipality of West Perth	169 St. David Street,	P.O. Box 609	Mitchell	N0K 1N0							
Lyndon	Cowch	Works	City of Stratford,	82 Erie Street		Stratford	M5A 2M4							
Mark	Hackett	Manager of Environmental Services	Municipality of North Perth	330 Wallace Ave. N		Listowel	N4W 1L3	Patricia Berfelz	Clerk	21-Apr-15	Mail	No		
Wes	Kuepfer	Public Works Manager	Township of Perth East	25 Mill St East	P.O Box 455	Milverton	N0K1M0	Theresa Campbell	Municipal Clerk	9-Apr-15	Email & Mail	No		
Matthew	D'Hondt	Solid Waste/ Wastewater Operations Manager	County of Brant	26 Park Avenue	P.O. Box 160	Burford	N0E 1A0	Matthew D'Hondt	Solid Waste/ Wastewater Operations Manager	13-Apr-15	Email (attachment) sent to St. Marys	No		
Paddy	Thomson	Director of Environmental Services	Municipality of Thames Centre	4305 Hamilton Rd.		Dorchester	N0L 1G3	Jarrold Craven	Director of Environmental Services (Acting)	7-Apr-15	Email w/ attachment	No		
Fran	Urbshott	Administrator/Clerk	Township of Adelaide Metcalfe	2340 Egremont Drive	RR #5	Strathroy	N7G 3H6	Fran Urbshott	Administrator/Clerk	21-Apr-15	Email w/ attachment	No		
Jaime	Farnscisco	Public Works Manager	Municipality of Southwest Middlesex	153 McKellar Street	Box 218	Glencoe	N0L 1M0	Jaime Francisco	Public Works Manager	8-Apr-15	Email w/ attachment	No		



BURNSIDE

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## Appendix B

### Private Waste Service Providers Survey



March 12, 2015

**Via: Mail**

«First\_Name» «Last\_Name»  
«Title»  
«Organization»  
«Address\_1»  
«Address\_2»  
«City» «Province» «PC\_»

**Re: Future Solid Waste Disposal Needs Environmental Assessment Study  
Waste Disposal Survey  
Project No.: 300032339.1000**

The Town of St. Marys has identified waste export as a potential solution to meet the Town's future solid waste disposal requirements. R.J. Burnside & Associates Limited, on behalf of the Town, has identified your company as a potential service provider for disposal.

In order to evaluate the suitability of exporting the Town's waste, Burnside is requesting information regarding the services offered by your company. It would be appreciated if you would complete the relevant sections of the attached survey and return it to Burnside. The information will be incorporated into the Environmental Assessment study for evaluation against other alternative methods of solid waste disposal. The study, including information provided by your company, will be made available for public review.

Please complete the attached survey and return it to Burnside by April 3, 2015. Should you have any questions please contact the undersigned at 289.470.1310 or [andrew.evans@rjburnside.com](mailto:andrew.evans@rjburnside.com).

Yours truly,

**R.J. Burnside & Associates Limited**

Andrew Evans  
EIT, B. Eng biosci  
AE:cv

James R. Hollingsworth, P.Eng.  
Technical Manager, Solid Waste

Enclosure(s) Waste Disposal Survey

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12/03/2015 5:01 PM



**Section A – Waste Haulage**

- A1. Please provide a typical haulage rate and disposal location? (\$/tonne, assuming 2000 – 5000 tonnes/year) \_\_\_\_\_
- A2. Please provide a brief list of disposal sites you currently haul to:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- A3. What is the service area provided by your company? Does it include St. Marys?  
\_\_\_\_\_
- A4. What is your Environmental Compliance Approval (ECA), Certificate of Approval (CofA) or Environmental Activity and Sector Registry (EASR) number? \_\_\_\_\_
- A5. Please provide an estimate of your waste haulage fleet average fuel economy (preferably in Litres per Tonne Kilometer or US gallons per Ton Mile). \_\_\_\_\_
- A6. Do you offer haulage services to the U.S. ( Y / N )  
If yes which States (circle) New York Michigan Ohio Other \_\_\_\_\_
- A7. If yes can you provide an approximate frequency of loads rejected at border? How are these handled/avoided? \_\_\_\_\_  
\_\_\_\_\_
- A8. Frequency of load fires (#/year) \_\_\_\_\_
- A9. What is your current fleet size? Trucks: \_\_\_\_\_ Trailers: \_\_\_\_\_
- A10. What is the typical duration of a contract? \_\_\_\_\_ years
- A11. What is the maximum contract duration you are willing to negotiate? \_\_\_\_\_ years
- A12. How have the tipping fees changed over the past 5 years (list of fees or percentage increases)?  
\_\_\_\_\_
- A13. What methods are commonly used to adjust contract rates?  
 CPI  Fuel price surcharges  Other: \_\_\_\_\_
- A14. Is there any other information you think should be considered regarding waste haulage?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Section B – Transfer Stations**

B1. Is your site licensed/permitted to receive waste from St. Marys, Ontario (ECA Service Area)? (Y/N)

B2. Do you have capacity to receive 2000-5000 tonnes/year from St. Marys? ( Y / N )

B3. What is your Environmental Compliance Approval (ECA) (or Certificate of Approval (CofA)) number? \_\_\_\_\_

B4. Is waste from your site permitted to be hauled to the U.S.? ( Y / N ) If yes which States (circle) New York Michigan Ohio Other \_\_\_\_\_

B5. If yes can you provide an approximate frequency of loads rejected at border? How are these handled/avoided? \_\_\_\_\_  
\_\_\_\_\_

B6. Please provide a brief list of disposal sites you currently haul to:  
\_\_\_\_\_  
\_\_\_\_\_

B7. What is the average throughput of your facility? \_\_\_\_\_ tonnes/day

B8. What is the maximum ECA permitted throughput? \_\_\_\_\_ tonnes/day

B9. What is the current tipping fee at your facility? (assume 2000-5000 tonnes per year) \_\_\_\_\_ \$/tonne

B10. What is the typical duration of a disposal contract? \_\_\_\_\_ years

B11. What is the maximum contract duration you are willing to negotiate? \_\_\_\_\_ years

B12. How have the tipping fees changed over the past 5 years (list of fees or percentage increases)?  
\_\_\_\_\_  
\_\_\_\_\_

B13. What methods are commonly used to adjust contract rates?

CPI  Fuel price surcharges  Other: \_\_\_\_\_



B14. Are you aware of any significant environmental features, rare species, Aboriginal Treaties, rights or interests or other factors that currently, or may in the future, affect your operations? ( Y / N )

If yes, please explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B15. Is there any other information you think should be considered regarding waste transfer stations or your site specifically? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Section C – Landfill Sites**

C1. Is your site licensed/permitted to receive waste from St. Marys, Ontario (ECA Service Area)? (Y/N)

C2. What is your Environmental Compliance Approval (ECA) (or Certificate of Approval (CofA)) number? \_\_\_\_\_

C3. Do you have capacity to receive 2000-5000 tonnes/year from St. Marys? ( Y / N )

C4. What is the current gate tipping rate? \_\_\_\_\_ \$/tonne

C5. What is the estimated remaining capacity/operating life at your site? (in terms of volume and years) \_\_\_\_\_ m<sup>3</sup> \_\_\_\_\_ years

C6. Please provide an estimate on the contract price/ discount rates for larger contracts (2000-5000 tonnes per year)? \_\_\_\_\_ \$/tonne

C7. What is the typical duration of a disposal contract? \_\_\_\_\_ years

C8. What is the maximum contract duration you are willing to negotiate? \_\_\_\_\_ years

C9. How have the tipping rates changed over the past 5 years (list of rates or percentage increases)  
\_\_\_\_\_

C10. What methods are commonly used to adjust contract rates?

CPI    Fuel price surcharges    Other: \_\_\_\_\_

C11. Do you have any LFG collection? If yes please provide the approximate collection efficiency

\_\_\_\_\_

C12. What kind of LFG system do you use? (i.e., flaring, gen-set, etc.)

\_\_\_\_\_

C13. How does the site handle leachate?

\_\_\_\_\_

C14. Are you aware of any significant environmental features, rare species, Aboriginal Treaties, rights or interests or other factors that currently, or may in the future, affect your operations? ( Y / N )

If yes, please explain

\_\_\_\_\_

\_\_\_\_\_

C15. Is there any other information you think should be considered regarding landfills or your site?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Section D – Thermal Disposal Sites**

D1. What is your Environmental Compliance Approval (ECA) (or Certificate of Approval (CofA)) number? \_\_\_\_\_

D2. Can your site accept waste from St. Marys, Ontario (ECA Service Area? ( Y / N )

D3. Do you have capacity to receive 2000-5000 tonnes/year from St. Marys? ( Y / N )

D4. What is the current gate fee? \_\_\_\_\_

\$/tonne

D5. What is the average throughput of your facility? \_\_\_\_\_ tonnes/day

D6. What is the maximum ECA permitted throughput? \_\_\_\_\_ tonnes/day

D7. Please provide an estimate on the contract price/ discount rates for larger contracts (2000-5000 tonnes per year)? \_\_\_\_\_

D8. What is the typical duration of a disposal contract? \_\_\_\_\_ years

D9. What is the maximum contract duration you are willing to negotiate? \_\_\_\_\_ years

D10. How have the tipping rates changed over the past 5 years (list of rates or percentage increases)

---

D11. What thermal technology is used at your facility (incineration, gasification, etc.)?

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D12. What is the treatment and disposal process (or site) for bottom ash and fly ash?

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D13. Is energy recovery a part of your system, if so what form(s) are used? (Boiler & steam turbine, gas turbine, piston engines, secondary heat recovery, etc.)

---

D14. What is the approximate level of efficiency achieved at your facility (explain)?

---

D15. Are there picking lines / material recovery equipment operating at your facility? If so please describe their operations. \_\_\_\_\_

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D16. Are you aware of any significant environmental features, rare species, Aboriginal Treaties, rights or interests or other factors that currently, or may in the future, affect your operations? ( Y / N )

If yes, please explain \_\_\_\_\_

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D17. Is there any other information you think should be considered regarding thermal disposal or your site? \_\_\_\_\_

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Challenger Motor Freight  
300 Maple Grove Road  
Cambridge ON N3E 1B7

Amanda Tucker  
WasteCo  
235 Curtis Drive  
Guelph ON N1K 1Y3

GFL  
16 Centennial Road  
Kitchener ON N2B 3G1

Doug Tilford  
Bluewater Recycling  
415 Canada Avenue  
Huron Park ON N0M 1Y0

Progressive Waste Solutions  
1209 North Service Road East  
Oakville ON L6H 1A7

Kevin Still  
Miller Waste  
8050 Woodbine Ave.  
Markham ON L6G 1B2

Peter Brand  
TRY Recycling  
21463 Clarke Road  
Arva ON N0M 1C0

Chris Elliott  
Green Valley Recycling  
1200 Green Valley Road  
London ON N6N 1E3

Clean Harbors  
2258 River Road  
London ON N5W 6C2

ECL Carriers  
7236 Colonel Talbot Road  
London ON N6L 1H8

Walkers Environmental Group  
Southwestern Landfill  
PO Box 100  
Thorold ON L2V 3B8

Southwestern Landfill  
Walker Environmental Group  
PO Box 100  
Thorold ON L2V 3Y8

Waste Management Inc.  
Twin Creeks Landfill  
8039 Zion Line  
Watford ON N0M 2S0

Republic Services Inc.  
Carleton Farms Landfill  
28800 Clark Road  
New Boston Michigan 43164

BFI Canada Inc.  
Ridge Landfill  
20262 Erieau Road  
Blenheim ON N0P 1A0

Emerald Energy from Waste Inc.  
7656 Bramalea Road  
Brampton ON L5S 1C4

Brooks Road Environmental  
160 Brooks Road  
Cayuga ON N0A 1E0

**Town of St. Marys**  
**St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report**  
**Private Waste Service Providers Survey**

Survey Responses

**Table 1 - Area Waste Hauler Information**

First Name	Last Name	Title	Organization	Final Responses
Greg	Hale	Operations Manager	Challenger Motor Freight	Survey completed & emailed to R. J. Burnside & Associates
Amanda	Tucker	General Manager	WasteCo	Contact was made, however, the completed survey has not been provided.
Tony	Lopez	MRC and Centennial Operations Manager	GFL Environmental Inc	Survey completed & emailed to R. J. Burnside & Associates
Francis	Veilleux	President	Bluewater Recycling	No information provided - described as "commercially sensitive" and unavailable for public distribution
			Progressive Waste Solutions	No response to mailed letter or telephone calls regarding the survey
Rick	Vandersluis	Vice President	TRY Recycling	Survey completed & emailed to R. J. Burnside & Associates
Rick	Declercq	President	Green Valley Recycling	Survey completed & emailed to R. J. Burnside & Associates
Chris	Havens	Field Service Coordinator	Clean Harbors	Informed via email that Clean Harbors London is no longer active.
Ray	Fillion	Director, Business Development	ECL Carriers	Survey completed & faxed to R. J. Burnside & Associates

**Table 2 - Waste Disposal Site Information**

First Name	Last Name	Title	Organization	Final Responses
Shawn	Jordan	Sales Manager	Walker Environmental Group	Survey completed & emailed to R. J. Burnside & Associates
Luiza	Furtado	Communications Manager	Waste Management Inc., Twin Creeks Landfill	Survey completed & emailed to R. J. Burnside & Associates
Robert	Web	Vice President	Republic Services Inc., Carleton Farms Landfill	Survey completed & emailed to R. J. Burnside & Associates
Wes	Belanger	Operations Manager	BFI Canada Inc., Ridge Landfill	Survey completed & emailed to R. J. Burnside & Associates
Joseph	Lyng	General Manager	Emerald Energy from Waste Inc.	Survey completed & emailed to R. J. Burnside & Associates
Richard	Weldon	General Manager	Brooks Road Environmental	Contact was made, however, the completed survey has not been provided.

**Town of St. Marys  
St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report  
Private Waste Service Providers Survey**

Survey Section A - Waste Haulage

Organization: Question:	Challenger Motor Freight	TRY Recycling	ECL Carriers	Walker Environmental Group	Waste Management of Canada Corporation, Twin Creeks Landfill	Emerald Energy from Waste Inc.
A1. Please provide a typical haulage rate and disposal location? (\$/tonne, assuming 2000 – 5000 tonnes/year)	\$35 - \$42 per metric tonne		\$26/ mt in the Detroit, MI area	\$ 24.50 PMT from St. Marys to WEG Niagra Landfill, assumes 33MT per load	\$60 - \$80 per MT depending on location and waste type	Disposal at Emerald Energy from Waste in Brampton: \$16.50 per tonne (for haulage)
A2. Please provide a brief list of disposal sites you currently haul to:	Green Lane (St Thomas, ON); Carlton Farms (New Boston, MI); Pinetree (Lenox, MI); Walker Bros (Niagra Falls, ON)		Republic Waste (New Boston, MI) and Waste Management (Lenox, MI)	WEG, Niagra Landfill (Ontario) and Covanta WTE (Niagra Falls, N.Y.)	We haul to hundreds of sites but internalize the majority of our volume in Southwest Ontario to our Twin Creeks Landfill (Lambton, Ontario) or Petrolia Landfill (Lambton, Ontario)	Niagra Waste Landfill (Niagra Falls ON); York-Durham Energy Center (Oshawa ON); Emerald Energy from Waste (Brampton ON)
A3. What is the service area provided by your company? Does it include St. Marys?	Any and all	Ontario and yes	Yes	Southern Ontario. Yes, it would include St. Marys	The service is all Ontario which includes St. Marys	Yes
A4. What is your Environmental Compliance Approval (ECA), Certificate of Approval (CofA) or Environmental Activity and Sector Registry (EASR) number?	A841577	A040146		A8248	Hauling: A840311	A8597
A5. Please provide an estimate of your waste haulage fleet average fuel economy (preferably in Litres per Tonne Kilometer or US gallons per Ton Mile).	4.5 miles per gallon	Service provided by Republic Waste	4.2/MPG	1.8 kilometres per liter		
A6. Do you offer haulage services to the U.S. ( Y / N ) If yes which States (circle) New York; Michigan; Ohio; Other	Y: New York, Michigan		Y: All	Y: New York, Ohio, Pennsylvania	Y: Haulage availability in each State	N
A7. Please provide an estimate on the contract price/ discount rates for larger contracts (2000-5000 tonnes per year)?	1 load in 100. Loads are redirected to Canadian Landfills		D15. Are there picking lines / material recovery equipment operating at your facility? If so please describe their operations	> 5 per year. Loads would be redirected to our Niagra Landfill	Negligable load rejections. Numerous contingency sites are available in Ontario if loads are rejected. If rejected in Michigan, alternate sites are Petrolia or Twin Creeks Landfill	

**Town of St. Marys  
St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report  
Private Waste Service Providers Survey**

Survey Section A - Waste Haulage

Organization: Question:	Challenger Motor Freight	TRY Recycling	ECL Carriers	Walker Environmental Group	Waste Management of Canada Corporation, Twin Creeks Landfill	Emerald Energy from Waste Inc.
A8. Frequency of load fires (#/year)	1 fire in 20 years		D16. Are you aware of any significant environmental features, rare species, Aboriginal Treaties, rights or interests or other factors that currently, or may in the future, affect your operations? ( Y / N ) If yes, please explain	0	Negligable	None
A9. What is your current fleet size? (Trucks and Trailers)	Trucks: 68; Trailers:90		Trucks: 134; Trailers: 178	Trucks: 17, Trailers: 14, Walking Floors: 11,	In Ontario: Trucks: 10, Trailers: 20	Trucks > 100
A10. What is the typical duration of a contract? (years)	3 - 5 years with extensions		3 - 7	1 - 5	Municipal disposal contracts range from 5 - 25 years	1 - 5
A11. What is the maximum contract duration you are willing to negotiate? (years)	5	10 - 20	10	10	25	10+
A12. How have the tipping fees changed over the past 5 years (list of fees or percentage increases)?	We only do hauling; customer looks after tipping fees		Unaware of this	+/- 5% continual decline with par dollar & cheap fuel, stabilizing now with lower Canadian dollar	Municipal disposal contracts typically include CPI or change of law/tax clauses	Fee changes are dependant on customer and materials; some have risen, some have fallen
A13. What methods are commonly used to adjust contract rates? (CPI, Fuel price surcharges, Other)	CPI, Fuel price surcharges	CPI	CPI, Fuel price surcharges	CPI, Fuel price surcharges	CPI, Fuel price surcharges	CPI, Fuel price surcharges

**Town of St. Marys  
 St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report  
 Private Waste Service Providers Survey**

Survey Section A - Waste Haulage

<b>Organization:</b> <b>Question:</b>	<b>Challenger Motor Freight</b>	<b>TRY Recycling</b>	<b>ECL Carriers</b>	<b>Walker Environmental Group</b>	<b>Waste Management of Canada Corporation, Twin Creeks Landfill</b>	<b>Emerald Energy from Waste Inc.</b>
A14. Is there any other information you think should be considered regarding waste haulage?			Transfer station equipment, ie: compactors to maximize trailer payloads	Haulage is generally offered as an extension of disposal and recycling services. This offers an integrated system for waste management and one point of contact for our customers. Our transfer station in Burlington is 1.5 hours away from St. Marys, making it an unlikely candidate for Waste Transfer Service	St. Marys waste volume is small. Therefore, roll-off and curbside collection vehicles should haul direct to a disposal site. A depot should be set up for local volume service in front-load bins	Dumurrage or Wait times may apply if there are delays at either end of the trip in excess of 1 hour. Minimum weight load will apply.



**Town of St. Marys**  
**St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report**  
**Private Waste Service Providers Survey**

Survey Section B - Transfer Stations

<b>Organization:</b>	<b>GFL Environmental Inc</b>	<b>TRY Recycling</b>	<b>Green Valley Recycling</b>	<b>Waste Management of Canada Corporation, Twin Creeks Landfill</b>
<b>Question:</b>				
B1. Is your site licensed/permitted to receive waste from St. Marys, Ontario (ECA Service Area)? (Y/N)	Y	Y	Y	Y
B2. Do you have capacity to receive 2000-5000 tonnes/year from St. Marys? ( Y / N )	Y	Y	Y	Y
B3. What is your Environmental Compliance Approval (ECA) (or Certificate of Approval (CofA) number?	ECA: # A140219	A040146	6751-6DFQ4A	Nearest to St. Marys is our London, Waterloo, Cambridge, Mount Forest or Petrolia transfers
B4. Is waste from your site permitted to be hauled to the U.S.? ( Y / N ) If yes which States (New York; Michigan; Ohio; Other)	Y. Michigan	Y. Michigan	Y. Michigan	Y. Haulage availability in each state
B5. If yes can you provide an approximate frequency of loads rejected at border? How are these handled/avoided?	No rejection, provided there is no hazardous or radioactive materials present	None to date	None that we are aware of	Negligible load rejections. Numerous contingency sites are available in Ontario
B6. Please provide a brief list of disposal sites you currently haul to:	Ridge Landfill, ON: Pinetree Landfill, MI	Carleton Farms, Republic Waste	W12A Landfill, City of London; Ridge Landfill, Blenheim; Greenlane Landfill, Toronto	We haul to hundreds of sites but internalize the majority of our waste volume in Southwest Ontario to our Twin Creeks Landfill (Lambton, Ontario) or Pine Tree Landfill (Michigan)
B7. Please provide an estimate on the contract price/ discount rates for larger contracts (2000-5000 tonnes per year)?	290 - 340		D15. Are there picking lines / material recovery equipment operating at your facility? If so please describe their operations	Twin Creeks Landfill accepts 3000
B8. What is the maximum ECA permitted throughput? (tonnes/day)	350		D16. Are you aware of any significant environmental features, rare species, Aboriginal Treaties, rights or interests or other factors that currently, or may in the future, affect your operations? ( Y / N ) If yes, please explain	Twin Creeks Landfill has no daily limit, just 750,000/year limit

**Town of St. Marys**  
**St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report**  
**Private Waste Service Providers Survey**

Survey Section B - Transfer Stations

<b>Organization:</b>	<b>GFL Environmental Inc</b>	<b>TRY Recycling</b>	<b>Green Valley Recycling</b>	<b>Waste Management of Canada Corporation, Twin Creeks Landfill</b>
<b>Question:</b>				
B9. What is the current tipping fee at your facility? (assume 2000-5000 tonnes per year) \$/tonne	waste (ICI) \$24.50/ tonne		MSW: \$94/ tonne; Mixed C&D: \$74/ tonne, see website for others	\$70 - \$80 for a transfer station
B10. What is the typical duration of a disposal contract? (years)	Negotiable		We review rates yearly	Municipal disposal contracts range from 5 - 25 years
B11. What is the maximum contract duration you are willing to negotiate? (years)	3 - 5	10 - 20	2	25
B12. How have the tipping fees changed over the past 5 years (list of fees or percentage increases)?	First increase of \$3 in past 5 years I'm aware of due to Landfill increases	Typically CPI increases	Mixed C&D rates increased from \$68 in 2008 to \$74 in 2015	Transfer station increases have been minimal, less than 5% over the last 5 years
B13. What methods are commonly used to adjust contract rates? (CPI, Fuel price surcharges, Other)	CPI, Fuel price surcharges	CPI	Fuel price surcharges, labour rates, tipping & landfills	CPI, Fuel price surcharges
B14. Are you aware of any significant environmental features, rare species, Aboriginal Treaties, rights or interests or other factors that currently, or may in the future, affect your operations? ( Y / N ) If yes, please explain		N		None known
B15. Is there any other information you think should be considered regarding waste transfer stations or your site specifically?				Consideration for transfer offering recyclable mining and CNG offerings

**Town of St. Marys**  
**St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report**  
**Private Waste Service Providers Survey**

Survey Section C - Landfill Sites

Organization:	TRY Recycling	Walker Environmental Group	Waste Management of Canada Corporation, Twin Creeks Landfill	Republic Services Inc., Carleton Farms Landfill
Question:				
C1. Is your site licensed/permitted to receive waste from St. Marys, Ontario (ECA Service Area)? (Y/N)		Y	Y	Y
C2. What is your Environmental Compliance Approval (ECA) (or Certificate of Approval (CofA) number?		0084-78RKAM	Twin Creeks: A032203	
C3. Do you have capacity to receive 2000-5000 tonnes/year from St. Marys? ( Y / N )	Y	Y	Y	Y
C4. What is the current gate tipping rate? (\$/ tonne)	Retail rate is \$124.65/ tonne	Gate rate is \$55 to \$70 but able to provide contract rate of \$45 to \$55/ tonne	\$40 - \$50 per MT depending on contract	18 CDN
C5. What is the estimated remaining capacity/ operating life at your site? (in terms of volume m <sup>3</sup> and years)		14.5 million & 13	20,000,000 & >25	60,000,000 & 75
C6. Please provide an estimate on the contract price/ discount rates for larger contracts (2000-5000 tonnes per year)?	To be negotiated	50	Negligible	Subject to negotiation
C7. Please provide an estimate on the contract price/ discount rates for larger contracts (2000-5000 tonnes per year)?		3 - 5	D15. Are there picking lines / material recovery equipment operating at your facility? If so please describe their operations	5 - 20
C8. What is the maximum contract duration you are willing to negotiate?	10 - 20	10	D16. Are you aware of any significant environmental features, rare species, Aboriginal Treaties, rights or interests or other factors that currently, or may in the future, affect your operations? ( Y / N ) If yes, please explain	10
C9. How have the tipping rates changed over the past 5 years (list of rates or percentage increases)		Same as in A12.	Landfill disposal rates have decreased over the last 5 years in order to compete with the Michigan	Have not increased in 5 years

**Town of St. Marys**  
**St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report**  
**Private Waste Service Providers Survey**

Survey Section C - Landfill Sites

<b>Organization:</b> <b>Question:</b>	<b>TRY Recycling</b>	<b>Walker Environmental Group</b>	<b>Waste Management of Canada Corporation, Twin Creeks Landfill</b>	<b>Republic Services Inc., Carleton Farms Landfill</b>
C10. What methods are commonly used to adjust contract rates? <input type="checkbox"/> CPI <input type="checkbox"/> Fuel price surcharges <input type="checkbox"/> Other	CPI	CPI, Fuel price surcharges	CPI, Fuel price surcharges	CPI. US\$ exchange rate subject to negotiation
C11. Do you have any LFG collection? If yes please provide the approximate collection efficiency		Yes, approximately 85%	Full LFG collection including permanent and temporary vertical and horizontal wells. Collection efficiency estimated at 85%	Yes, 14 generators
C12. What kind of LFG system do you use? (i.e., flaring, gen-set, etc.)		- 1 megawatt electrical generation; - 4,500 scfm direct use project (send 1 fg to nearby papermill); - 7,500 scfm of flaring capacity	Current LFG destruction system is flare with LFGTE in planning stage	gen-set
C13. How does the site handle leachate?		Collection system, on-site primary treatment, discharge to sanitary sewer	Leachate collection and bulking with disposal to willing municipal licensed receivers and seasonal disposal to onsite poplar plantation	Leachate is collected and trucked off site for treatment
C14. Are you aware of any significant environmental features, rare species, Aboriginal Treaties, rights or interests or other factors that currently, or may in the future, affect your operations? ( Y / N ) If yes, please explain		N	Our Twin Creeks Landfill has a willing host (Township of Warwick), Community Host agreement with Warwick, Impact Benefits Agreement with Walpole First Nation, Impact Benefits agreement with Landfill Neighbours, Property Value Protection, Liaison Comment, etc. Agreements are in place with all stakeholders.	N

**Town of St. Marys**  
**St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report**  
**Private Waste Service Providers Survey**

Survey Section C - Landfill Sites

<b>Organization:</b> <b>Question:</b>	<b>TRY Recycling</b>	<b>Walker Environmental Group</b>	<b>Waste Management of Canada Corporation, Twin Creeks Landfill</b>	<b>Republic Services Inc., Carleton Farms Landfill</b>
<p>C15. Is there any other information you think should be considered regarding landfills or your site?</p>		<p>Company is currently undertaking a project to site a new landfill in Beachville, ON. If approved, this site could provide a secure &amp; long term waste disposal option for St. Marys at significantly reduced haulage costs.</p>	<p>Twin Creeks is 301 hectares &amp; 101.8 hectares are licensed for landfilling with over 25 years available capacity, leachate collection system, Best management practices for odour, dust, litter, Energy from waste planning. Landfill has a site specific liner including primary (leachate) and secondary (groundwater) collection systems. Between the two layers is a recompacted clay liner, 0.75m thick. Poplar tree plantations are also used by phytoremediation</p>	<p>Carleton Farms has received waste from the City of Toronto, regions of Peel and York. Carleton Farms continues to receive waste from numerous customers in Ontario</p>

**Town of St. Marys**

**St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report**

**Private Waste Service Providers Survey**

Survey Section D - Thermal Treatment Sites

Organization:	Emerald Energy from Waste Inc.
<b>Question:</b>	
D1. What is your Environmental Compliance Approval (ECA) (or Certificate of Approval (CofA))	CofA 4591-56VSTN
D2. Can your site accept waste from St. Marys, Ontario (ECA Service Area? ( Y / N )	Y
D3. Do you have capacity to receive 2000-5000 tonnes/year from St. Marys?( Y/ N )	Y
D4. What is the current gate fee? \$/tonne	85 to 95
D7. What is the average throughput of your facility?	365
D6. What is the maximum ECA permitted throughput?	455
D7. Please provide an estimate on the contract price/ discount rates for larger contracts (2000-5000 tonnes per year)?	90
D8. What is the typical duration of a disposal contract? (years)	10 - 20
D9. What is the maximum contract duration you are willing to negotiate? (years)	20
D10. How have the tipping rates changed over the past 5 years (list of rates or percentage increases)	

Organization:	Emerald Energy from Waste Inc.
<b>Question:</b>	
D11. What thermal technology is used at your facility (incineration, gasification, etc.)?	Two stage gasification
D12. What is the treatment and disposal process (or site) for bottom ash and fly ash?	Bottom Ash: Quench cooling, gravity draining, magnetic separation (ferrous recovery). Fly Ash: Shipped off site for disposal
D13. Is energy recovery a part of your system, if so what form(s) are used? (Boiler & steam turbine, gas	The steam produced is used to generate electricity and for direct use by local recycled paper mill
D14. What is the approximate level of efficiency achieved at your facility (explain)?	Difficult to calculate; in addition to our turbine, we have a direct user for our steam
D15. Are there picking lines / material recovery equipment operating at your facility? If so please describe their operations	No picking is done at our site
D16. Are you aware of any significant environmental features, rare species, Aboriginal Treaties, rights or interests or other factors that currently, or may in the future, affect your operations? ( Y / N )	N
D17. Is there any other information you think should be considered regarding thermal disposal or your site?	



BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]

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## Appendix C

### CKD Stockpile Report

**Golder Associates Ltd.**

2390 Argentia Road  
Mississauga, Ontario, Canada L5N 5Z7  
Telephone: (905) 567-4444  
Fax: (905) 567-6561



March 3, 2005

04-1112-047

St. Marys Cement Company  
410 Waverley Road, R.R. #2  
Bowmanville, Ontario  
L1C 3K3

Attention: Austin MacMurdo, Lands Manager

**RE: CKD STOCKPILE, ST MARYS PLANTSITE**

Dear Sir,

Further to your request, Golder Associates Ltd. (Golder) has prepared the following summary of the results of the investigation of the Cement Kiln Dust (CKD) stockpile located within the potential landfill donation area at the St.Marys plant site. The area is located immediately adjacent to (east of) the existing Town of St Marys municipal landfill as shown on Figure 1.

The purpose of the investigation was to establish the stratigraphy and environmental quality of the material comprising the CKS stockpile and the physical nature of the native soil and bedrock that underlies the area.

▪ **BOREHOLE DRILLING**

The investigation included drilling five boreholes (MW04-01 through MW04-05) between July 30 and August 12, 2004 at the locations shown on Figure 2. Detailed Records of Boreholes are provided in Appendix A. Borehole MW04-01 to MW04-03 were drilled through the CDK stockpile terminating approximately 1.5 m within the underlying native soil. Monitoring wells were installed in each of these boreholes.

Boreholes MW04-04 and MW04-05 were drilled through the base of the former clay pit area directly south of the CKD stockpile and completed 12 to 13 m into the underlying bedrock. A bottom monitoring well was installed in MW04-04 at the existing landfill boundary while MW04-05 was cement grouted from the bottom of the hole to ground surface. The boreholes were surveyed in location and elevation to the geodetic datum.





## ▪ **GEOTECHNICAL SAMPLING**

The soil core samples obtained from boreholes MW04-04 and MW 04-05 were analyzed by sieve-hydrometer methods to determine the soil granularity (see Figure A-1 through A-7 in Appendix A). Selected samples of the Upper and Lower Glacial Till horizons were also tested for Attenburg limits and the results are presented on plasticity charts on Figures A-8 and A-9 respectively.

## ▪ **ENVIRONMENTAL SAMPLING**

The samples from the three boreholes drilled through the CKD stockpile (MW04-01 to MW04-03) were split into upper and lower halves forming six composite samples for chemical analysis. This included total metals by aquarega digestion (Table 1A), total petroleum hydrocarbons by solvent organic extraction (Table 1B), polychlorinated biphenyls (Table 1C) and polyaromatic hydrocarbons (Table 1D).

Groundwater samples were obtained from monitoring wells MW04-01 and MW04-03 in the CKD stockpile and the bedrock monitoring well MW04-04. The samples were analysed for a suite of chemical parameters including major ions and heavy metals as summarized on Table 2A. The water samples were also analyzed for polychlorinated biphenyls (Table 2B) and polyaromatic hydrocarbons (Table 2C).

One soil sample of CKD (MW04-01 Upper) was collected for TCLP leach analyses (Table 3) considering that the sample was the only sample with aquarega leach Table B exceedences for metals.

All soil and water samples were compared to Ministry of Environment Table B guidelines as indicated on the various tables noted.

## ▪ **SUMMARY OF CKD STOCKPILE RESULTS**

The CKD material was found to be in the range of 10 to 16 m thick at the location drilled. The material encountered included CKD and some native fill soil. The only refuse material noted was a few paper cement bags. The base of the CKD was encountered between elevations of 313 and 319 m while the crest of the pile is approximately 332 m. The surface of the stockpile has been contoured and a thin 0.2 to 0.3 m layer of topsoil has been placed and vegetated.

The total volume of CKD estimated from the surface continuous and the base was approximately 350,000 to 400,000 m<sup>3</sup>.

Saturated conditions were encountered in the CKD stockpile at various depths associated with perched conditions where CDK overlay silt till material. The monitoring walls indicated watertable conditions below depths of 10 to 12 m corresponding to elevations of approximately 317 to 322 m, being at or up to 4 m above the base of the pile.

From an environmental quality perspective, one composite sample of CKD (MW04-01 Upper) encountered minor metal exceedences for cadmium (13.2 and 14.1 µg/g compared to a Table B guidelines of 12 µg/g) and lead (1160 and 1210 µg/g compared to a Table B guideline of 1000 µg/g) as outlined on Table 1A. There were no Table B exceedences for total petroleum hydrocarbons (Table 1B) and no detections (less than 0.05 µg/g) for polychlorinated biphenyls. The test results for polyaromatic hydrocarbons did not encounter any Table B criteria exceedences (Table 1D). There were no TCLP leach test exceedences (Table 3).

The chemistry obtained from the CDK groundwater samples is summarized on Table 2A. The groundwater was characterized by an alkaline pH of 10, high TDS (29,000 to 42,000 µg/L), high sulphate (13,000 to 19,000 µg/L), elevated chloride (2,000 µg/L to 4,000 µg/L) and the primary cations being potassium (12,000 to 19,000 µg/L) and sodium (1,000 to 2,000 µg/L). There were no Table B criteria exceedences except for two apparent exceedences related to detection limits for selenium (<0.2 µg/L compared to 0.05 µg/L criteria) and silver (<0.01 µg/L compared to 0.0012 µg/L criteria) as indicated on Table 2A. It is extremely unlikely that silver is present given the presence of elevated chloride. No polychlorinated biphenyls were detected in the CKD groundwater samples (Table 2B) while only trace levels of the PAH's 2-methylnaphthalene and phenanthrene were detected but well below Table B guideline criteria (Table 2C).

## ▪ SOIL AND BEDROCK CONDITIONS

The general soil and bedrock conditions beneath the potential donation area are shown on Section A-A<sup>1</sup> on Figure 4. The soils consist of an Upper and Lower Glacial Till horizons that may correspond to the St Mary's Till and the Catfish Creek Till respectively. As indicated by the grain size distribution curves on Figure A-1 to A-7 in Appendix A, the tills are well graded and clayey. The clay size formation of the Upper Till is in the range of 15 to 40 percent while in the Lower Till it varies between approximately 8 to 15 percent. The tills are both massive textured and given the granularity, they are also considered to be of quite low permeability.

The inferred overburden thickness within the potential donation area is shown on Figure 5. As indicated, the CKD stockpile sits on approximately 14 to 20 m of overburden comprised of the glacial tills. The donation area to the south of the stockpile is underlain by approximately 14 to 18 m of glacial till with some areas of thin surficial granular fill material.

The underlying bedrock is comprised by fractured dolomitic limestone and dolostone of the Lucas Formation. Detailed descriptions are provided on the Record of Borehole sheets in Appendix A.

Both the glacial till and the bedrock have been truncated by the quarry excavation directly north of the site as shown on Figure 4. The groundwater level in the bedrock approximately coincides with the pond level maintained in the quarry. The direction of bedrock groundwater flow northward is toward the quarry pond or northeastward toward the quarry industrial well No. 5 (Figure 2). Groundwater flow in the overlying till is vertically downward in response to the one to one vertical hydraulic gradient.

The groundwater quality in the bedrock, were sampled from MW04-04, is typical of fresh but hard mineralized water from dolostones formations (Table 2A). There is no apparent groundwater quality impact from the existing landfill.

We trust this summary of investigation results meets your requirements and if there are any questions, please contact us.

Yours very truly,

**GOLDER ASSOCIATES LTD.**

***Original signed by:***

Robert D. Blair, P.Geo., P.Eng.  
Senior Hydrogeologist, Principal

Attachments: Tables 1A -3  
Figures 1-5  
Appendix A – Borehole Records and Grainsize Testing

RDB/lh

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**TABLE 1A**  
**SOIL ANALYTICAL RESULTS - INORGANICS**

Parameter	Units	Table 3 Criteria	Sample						
			MW04-01 UPPER	MW04-01 UPPER DUP.	MW04-01 LOWER	MW04-02 UPPER	MW04-02 LOWER	MW04-03 UPPER	MW04-03 LOWER
Aluminum	ug/g	NV	8,080	8,370	5,450	5,700	2,220	8,450	4,330
Barium	ug/g	2,000	64	66	33	44	13	60	26
Beryllium	ug/g	1.2	0.4	0.4	0.2	0.2	<0.2	0.4	<0.2
Cadmium	ug/g	12	13.2	14.1	6.7	0.5	<0.5	2.3	<0.5
Calcium	ug/g	NV	220,000	227,000	155,000	141,000	130,000	137,000	116,000
Chromium	ug/g	1,000	19	19	113	14	6	34	8
Cobalt	ug/g	100	4	3	2	4	<2	5	3
Copper	ug/g	300	15	16	8	11	4	14	7
Iron	ug/g	NV	17,300	17,800	8,260	14,800	5,180	17,600	7,720
Lead	ug/g	1,000	1,160	1,210	627	21	<5	138	<5
Magnesium	ug/g	NV	20,100	20,700	30,400	33,900	32,100	21,600	28,600
Manganese	ug/g	NV	359	372	259	361	207	396	286
Molybdenum	ug/g	40	<3	<3	<3	<3	<3	<3	<3
Nickel	ug/g	200	13	14	7	9	4	12	6
Phosphorus	ug/g	NV	318	323	314	371	275	415	348
Potassium	ug/g	NV	3,960	4,030	9,170	1,410	786	4,840	2,090
Silver	ug/g	50	2	2	<1	<1	<1	<1	<1
Sodium	ug/g	NV	558	586	1,040	174	140	611	287
Strontium	ug/g	NV	135	140	99.0	125	79.4	115	79.9
Titanium	ug/g	NV	309	320	231.0	252.0	176	285	216
Vanadium	ug/g	250	18	19	14	15	9	20	12
Zinc	ug/g	800	371	386	168	129	10	100	18
pH	pH	5.0 to 11.0	10.9	10.9	10.4	7.96	8.11	8.67	7.90
<b>No. of Exceedances</b>			<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Notes:** Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004,  
Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition

< = Below the Estimated quantitation limit

**13.2/14.1** = Exceedance of Table "B" Guideline

NV = No value established

prepared by: ACU

checked by: CAB

**TABLE 1B**  
**SOIL ANALYTICAL RESULTS - TOTAL PETROLEUM HYDROCARBONS**

Parameter	Units	Table B Criteria	Sample					
			MW04-01 UPPER	MW04-01 LOWER	MW04-02 UPPER	MW04-02 LOWER	MW04-03 UPPER	MW04-03 LOWER
TPH-Heavy Oils	ug/g	<b>5,000</b>	470	<100	110	<100	380	<100
TPH-Gas+Diesel	ug/g	<b>2,000</b>	<10	<10	<10	<10	<10	<10
TPH-Gas	ug/g	<i>NV</i>	<10	<10	<10	<10	<10	<10
TPH-Diesel	ug/g	<i>NV</i>	<10	<10	<10	<10	<10	<10
<b>No. of Exceedances</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Notes:**

Table B = Ministry of Environment (MOE) "Guideline for Use at Contaminated Sites in Ontario", revised September 1998, Table "B" industrial/commercial criteria, non-potable situation for medium/fine textured soil.

< = Below the Estimated quantitation limit

NV = No value established

prepared by: ACU  
checked by: CAB

**TABLE 1C**  
**SOIL ANALYTICAL RESULTS - POLYCHLORINATED BIPHENYLS**

			Sample					
Parameter	Units	Table 3 Criteria	MW04-01 UPPER	MW04-01 LOWER	MW04-02 UPPER	MW04-02 LOWER	MW04-03 UPPER	MW04-03 LOWER
PCBs	ug/g	25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
<b>No. of Exceedances</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Notes:**

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004,

Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition

PCBs = Polychlorinated Biphenyls

< = Below the Estimated quantitation limit

prepared by: ACU  
checked by: CAB

**TABLE 1D**  
**SOIL ANALYTICAL RESULTS - PAHS**

Parameter	Units	EQL	Table 3 Criteria	Sample						
				MW04-01 UPPER**	MW04-01 UPPER DUP.**	MW04-01 LOWER	MW04-02 UPPER	MW04-02 LOWER	MW04-03 UPPER	MW04-03 LOWER
Naphthalene	ug/g	0.05	40	ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	ug/g	0.05	1,600	ND	ND	ND	ND	ND	ND	ND
1-Methylnapthalene	ug/g	0.05	1,600	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	ug/g	0.05	840	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	ug/g	0.05	1,300	ND	ND	ND	ND	ND	ND	ND
Fluorene	ug/g	0.05	350	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	ug/g	0.05	40	0.24*	0.21*	ND	ND	ND	ND	ND
Anthracene	ug/g	0.05	28	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ug/g	0.05	40	0.29	0.23	ND	ND	ND	ND	ND
Pyrene	ug/g	0.05	250	0.35	0.31	ND	ND	ND	ND	ND
Benzo(a)anthracene	ug/g	0.05	40	0.22*	0.23*	ND	ND	ND	ND	ND
Chrysene	ug/g	0.05	19	0.27	0.28	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	ug/g	0.05	19	0.26	0.22*	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	ug/g	0.05	19	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	ug/g	0.05	1.9	0.23*	0.24*	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ug/g	0.05	19	0.19*	0.16*	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	ug/g	0.05	1.9	ND	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	ug/g	0.05	40	0.24*	0.22*	ND	ND	ND	ND	ND
<b>No. of Exceedances</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Notes:**

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004,  
Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition

EQL = Estimated Quantitation Limit

ND = Not detected (below EQL)

\* = Detected below EQL of 0.25 for MW04-01 AND MW04-01 DUP. but passed compound identification criteria

\*\* = Sample diluted. Refer to Certificates of Analysis, Appendix D

prepared by: ACU  
checked by: CAB

**TABLE 2A**  
**GROUNDWATER ANALYTICAL RESULTS - INORGANICS**

Parameter	Units	Table 3 Criteria	Sample			
			MW04-01	MW04-01 DUP	MW04-03	MW04-04
Aluminum	mg/L	NV	<500	<0.5	0.714	0.007
Antimony	mg/L	16	<50	<0.05	<0.05	0.0007
Arsenic	mg/L	0.48	<200	<0.2	<0.2	<0.002
Barium	mg/L	23	<500	<0.5	<0.5	0.078
Beryllium	mg/L	0.053	<100	<0.1	<0.1	<0.1
Bismuth	mg/L	NV	<0.1	<0.1	<0.1	<0.1
Boron	mg/L	50	0.528	0.573	1.240	0.121
Cadmium	mg/L	0.011	<0.01	<0.01	<0.01	<0.0001
Calcium	mg/L	NV	<50	<50	425	102
Chromium	mg/L	2	<0.5	<0.5	<0.5	<0.005
Cobalt	mg/L	0.1	<0.01	<0.01	<0.01	0.0043
Copper	mg/L	0.023	<0.05	<0.05	<0.05	0.0012
Iron	mg/L	NV	<3	<3	42.5	<0.03
Lead	mg/L	0.032	<0.05	<0.05	<0.05	<0.0005
Magnesium	mg/L	NV	15.5	15.4	162	59.6
Manganese	mg/L	NV	<0.5	<0.5	3.5	0.015
Mercury	mg/L	0.00012	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/L	7.3	0.553	0.541	<0.1	0.016
Nickel	mg/L	1.6	<0.1	<0.1	<0.1	0.003
Phosphorus	mg/L	NV	<5	<5	<5	<0.05
Potassium	mg/L	NV	19,200	19,200	11,700	41.9
Selenium	mg/L	0.05	<0.2	<0.2	<0.2	<0.002
Silicon	mg/L	NV	5.87	5.79	<5	1.27
Silver	mg/L	0.0012	<0.01	<0.01	<0.01	<0.0001
Sodium	mg/L	NV	1,780	1,780	978	50.8
Strontium	mg/L	NV	<0.1	<0.1	1.75	14.2
Thallium	mg/L	0.4	<0.005	<0.005	<0.005	0.00075
Tin	mg/L	NV	<0.1	<0.1	<0.1	<0.001
Titanium	mg/L	NV	<0.5	<0.5	<0.5	<0.005
Uranium	mg/L	NV	0.0285	0.0278	<0.01	0.0029
Vanadium	mg/L	0.2	0.0921	0.0957	<0.05	0.0011
Zinc	mg/L	1.1	<0.5	<0.5	<0.5	0.011
pH	pH	NV	10.1	10.1	7.18	8.10
Specific Conductivity	umhos/cm	NV	66,000	65,500	42,200	1,180
Alkalinity	mg CaCO3/L	NV	716	696	1,350	165
C-Hardness	mg CaCO3/L	NV	188,800	188,600	1,733,000	500,600
Bromide (Br-)	mg/L	NV	46	46	30	<0.5
Chloride (Cl-)	mg/L	NV	3,830	3,800	2,270	73.6
Fluoride (F-)	mg/L	NV	21.2	32.4	0.7	1.4
Nitrate (NO <sub>3</sub> )	mg/L	NV	<2	<2	<2	<0.2
Nitrite (NO <sub>2</sub> )	mg/L	2	<2	<2	<2	<0.2
Phosphate (PO <sub>4</sub> <sup>-3</sup> )	mg/L	NV	<10	<10	<10	<1
Sulphate (SO <sub>4</sub> <sup>-2</sup> )	mg/L	NV	18,700	18,600	13,300	377
Phenols	mg/L	NV	0	0.015	0.003	0.001
TDS	mg/L	NV	41960	45436	29,396	860
<b>No. of Exceedances</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Notes:**

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004,

Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition

< = Below the Estimated quantitation limit (EQL)

NV = No value established

<200 = EQL exceeds Table B Criteria

prepared by: ACU

checked by: CAB



**TABLE 2B**  
**GROUNDWATER ANALYTICAL RESULTS - POLYCHLORINATED BIPHENYLS**

Parameter	Units	Table 3 Criteria	Sample			
			MW04-01	MW04-03	MW04-04	MW04-04 DUP
PCBs	ug/L	0.2	<0.05	<0.05	<0.05	<0.05
<b>No. of Exceedances</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Notes:**

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004,  
 Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition  
 PCBs = Polychlorinated Biphenyls  
 < = Below the Estimated quantitation limit

prepared by: ACU  
 checked by: CAB

**TABLE 2C  
GROUNDWATER ANALYTICAL RESULTS - PAHS**

Parameter	Units	EQL	Table 3 Criteria	Sample			
				MW04-01	MW04-01 DUP.	MW04-03	MW04-04
Naphthalene	ug/L	0.2	6,200	ND	ND	ND	ND
2-Methylnaphthalene	ug/L	0.2	13,000	0.2	0.2	ND	ND
1-Methylnaphthalene	ug/L	0.2	13,000	ND	ND	ND	ND
Acenaphthylene	ug/L	0.2	2,000	ND	ND	ND	ND
Acenaphthene	ug/L	0.2	1,700	ND	ND	ND	ND
Fluorene	ug/L	0.2	290	ND	ND	ND	ND
Phenanthrene	ug/L	0.2	63	0.8	0.8	0.3	ND
Anthracene	ug/L	0.2	12	ND	ND	ND	ND
Fluoranthene	ug/L	0.2	130	ND	ND	ND	ND
Pyrene	ug/L	0.2	40	ND	ND	ND	ND
Benzo(a)anthracene	ug/L	0.2	5	ND	ND	ND	ND
Chrysene	ug/L	0.2	3	ND	ND	ND	ND
Benzo(b)fluoranthene	ug/L	0.2	7	ND	ND	ND	ND
Benzo(k)fluoranthene	ug/L	0.2	0.4	ND	ND	ND	ND
Benzo(a)pyrene	ug/L	0.2	1.9	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	ug/L	0.2	0.27	ND	ND	ND	ND
Dibenzo(a,h)anthracene	ug/L	0.2	0.25	ND	ND	ND	ND
Benzo(ghi)perylene	ug/L	0.2	0.2	ND	ND	ND	ND
<b>No. of Exceedances</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Notes:**

Table 3 = Ministry of Environment (MOE) "Soil, Ground Water and Sediments Standards for Use Under Part XV.1 of the Environmental Protection Act", revised March 9, 2004,

Table 3: Full Depth Site Condition Standards In a Non-Potable Ground Water Condition

EQL = Estimated Quantitation Limit

mbgs = Meters below ground surface

ND = Not detected (above EQL)

NV = No value established

NA = Not analyzed

prepared by: ACU

checked by: CAB

**TABLE 3  
TCLP LEACH ANALYTICAL RESULTS**

Sample Date	Units	Schedule 4 (mg/L)	Sample	
			MW04-01-UPPER	MW04-01-UPPER REPEAT
Arsenic	mg/L	2.5	<0.2	<0.2
Barium	mg/L	100	0.6	0.6
Boron	mg/L	500	0.1	0.2
Cadmium	mg/L	0.5	0.08	0.08
Chromium	mg/L	5	<0.1	<0.1
Lead	mg/L	5	1.0	0.5
Mercury	mg/L	0.1	<0.01	<0.01
Selenium	mg/L	1.0	<0.1	<0.1
Silver	mg/L	5	<0.01	<0.01
Uranium	mg/L	10	<0.01	<0.01
Floride (F-)	mg/L	150	1.9	2.4
Nitrate & Nitrite (as Nitrogen)	mg/L	1000	<0.2	<0.2
Cyanide (Free)	mg/L	20	<0.01	<0.01
PCBs	mg/L	0.3	<0.0002	<0.0002
<b>No. of Exceedances</b>			<b>0</b>	<b>0</b>

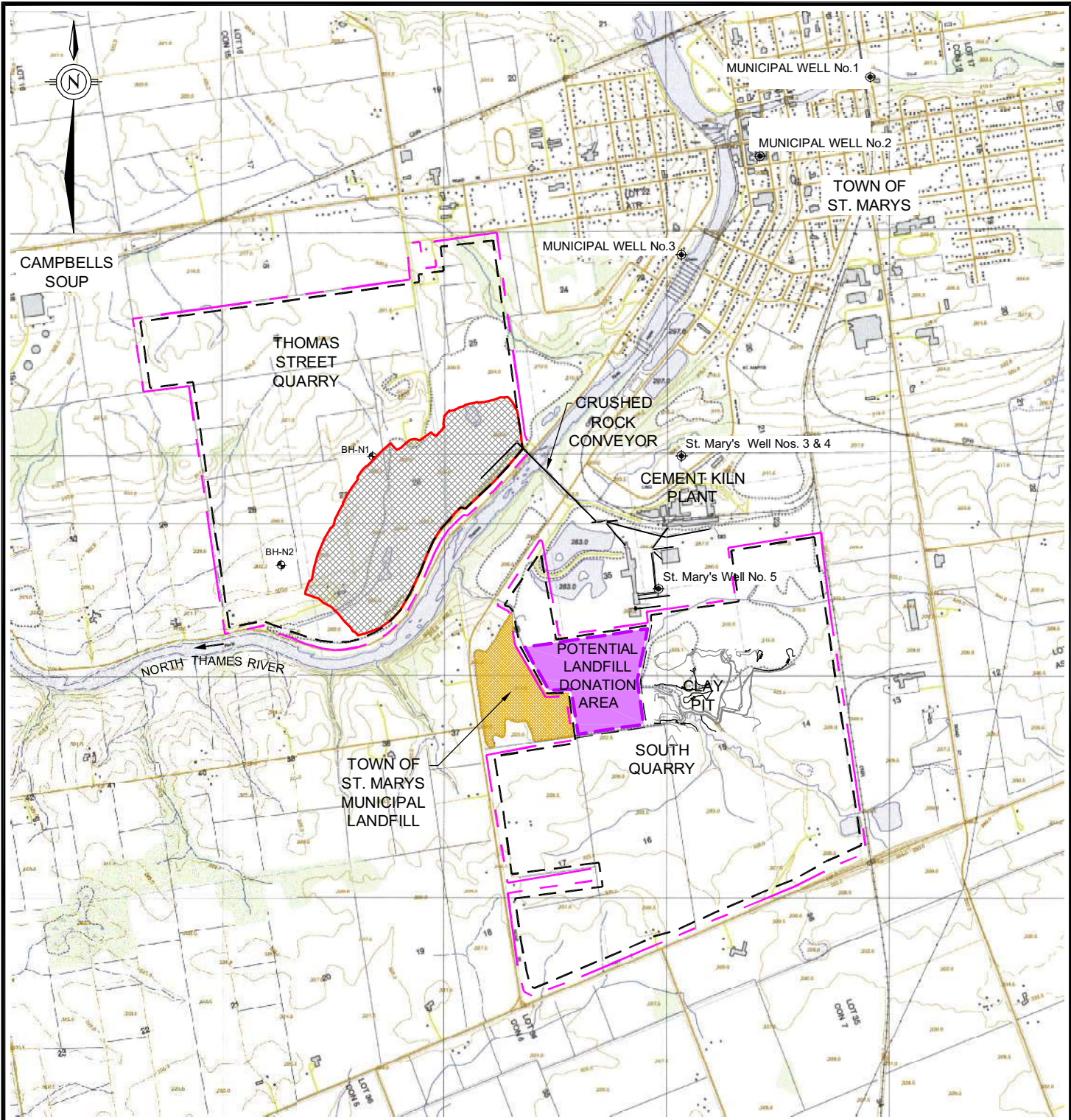
**Notes:**

Schedule 4 = Environmental Protection Act, Revised Regulations of Ontario, Regulation 374, amended to O.Reg. 501/01 leach quality criteria in Schedule 4

**75** = Exceedance of Schedule 4 Criteria

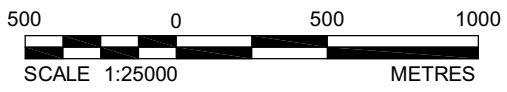
NV = No value established

prepared by: CB  
checked by: EK



**REFERENCES:**


OBM SHEET 10 17 4850 47850,  
MINISTRY OF NATURAL RESOURCES, 1995



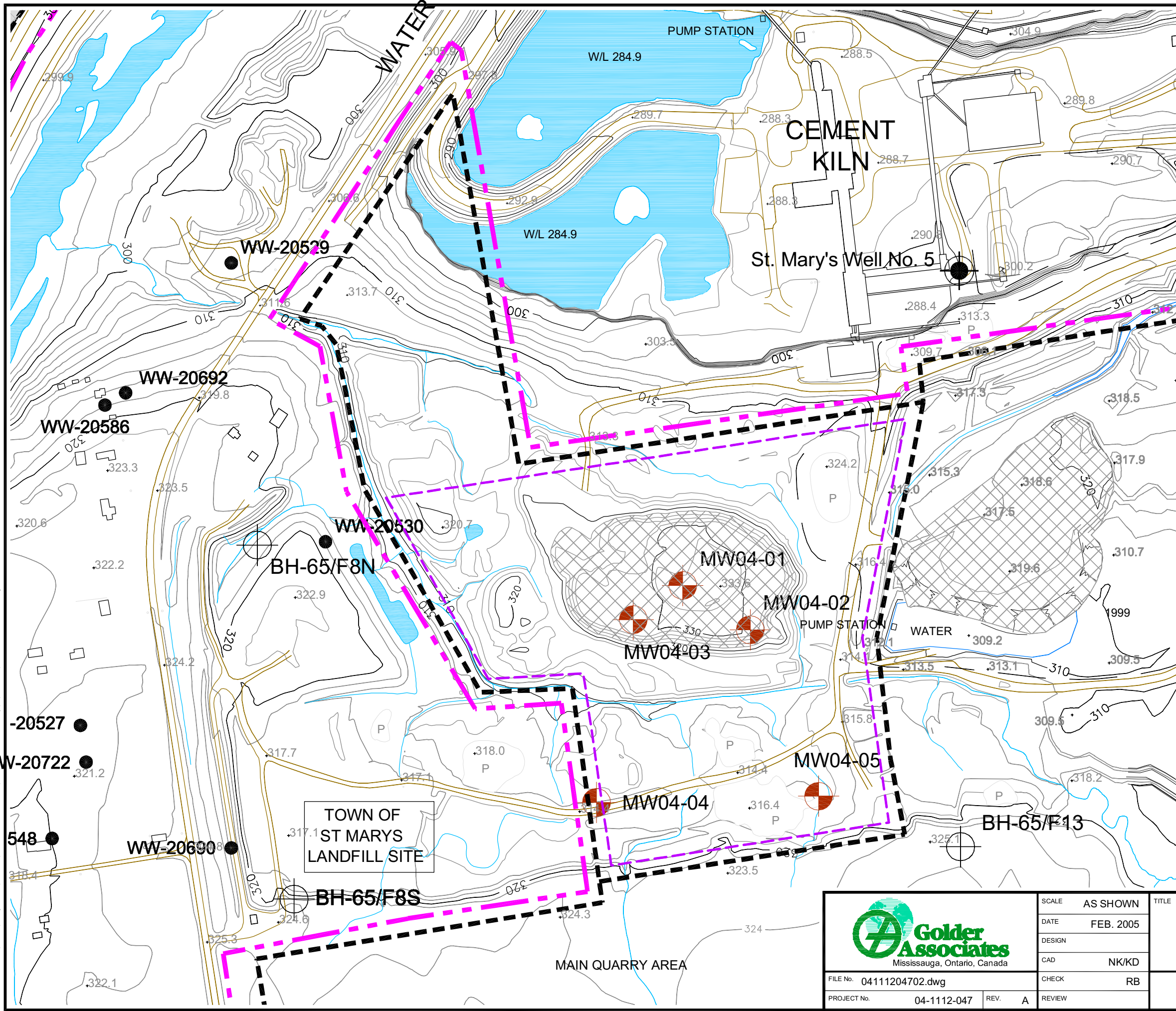
**LEGEND**

- - - - - QUARRY LICENCE BOUNDARY
- - - - - QUARRY EXCAVATION SETBACK
- MUNICIPAL WELL No.3
- MUNICIPAL AND INDUSTRIAL WATER SUPPLY WELLS

PLOT DATE: March 03, 2005  
FILENAME: M:\CAD\Projects\2004\04-1112-047 (St. Marys)\AA-04111204701.dwg

	SCALE	AS SHOWN	<h2 style="margin: 0;">SITE LOCATION PLAN</h2>	
	DATE	FEB. 22, 2005		
	DESIGN			
	CAD	KD		
FILE No.	04111204701.dwg	CHECK	R.B.	<h3 style="margin: 0;">ST. MARYS CEMENT Co.</h3>
PROJECT No.	04-1112-047	REV.	A	

PLOT DATE: March 03, 2005  
 FILENAME: M:\CAD\Projects\2004\04-1112-047 (St. Marys, Ont.)\AA-0411204702.dwg



**LEGEND**

- QUARRY LICENCE BOUNDARY
- QUARRY EXCAVATION SETBACK
- BOREHOLE LOCATION FROM CURRENT INVESTIGATION FOR LANDFILL AREA, REPORT GOLDER NO. 04-1112-047
- TEST PITS LOCATION FROM CURRENT INVESTIGATION, 2004
- BOREHOLE LOCATION DRILLED BY GOLDER, 2000
- WATER WELL SUPPLY LOCATION - MINISTRY OF ENVIRONMENT (MOE) WWIS DATABASE
- BOREHOLE LOCATION - DRILLED BY ST. MARYS CEMENT, 1965
- MUNICIPAL / INDUSTRIAL WATER SUPPLY WELLS
- CKD STOCKPILE
- POTENTIAL LANDFILL DONATION AREA

**NOTES**

1. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ATTACHED REPORT.
2. THE CURRENT EXCAVATION FACE AT THE QUARRY WAS SURVEYED BY AGM SURVEYING AND ENGINEERING, DRAWING No. SM 0412T1.dwg (OCTOBER, 2004).
3. THE TEST PITS WERE SURVEYED BY AGM SURVEYING AND ENGINEERING BY REPORT No. SM-CEM-34 (SEPTEMBER, 2004).
5. LOCATIONS OF 1958, 1965 AND 1974 BOREHOLES AND MOE WELLS ARE APPROXIMATE ONLY.

**REFERENCE**

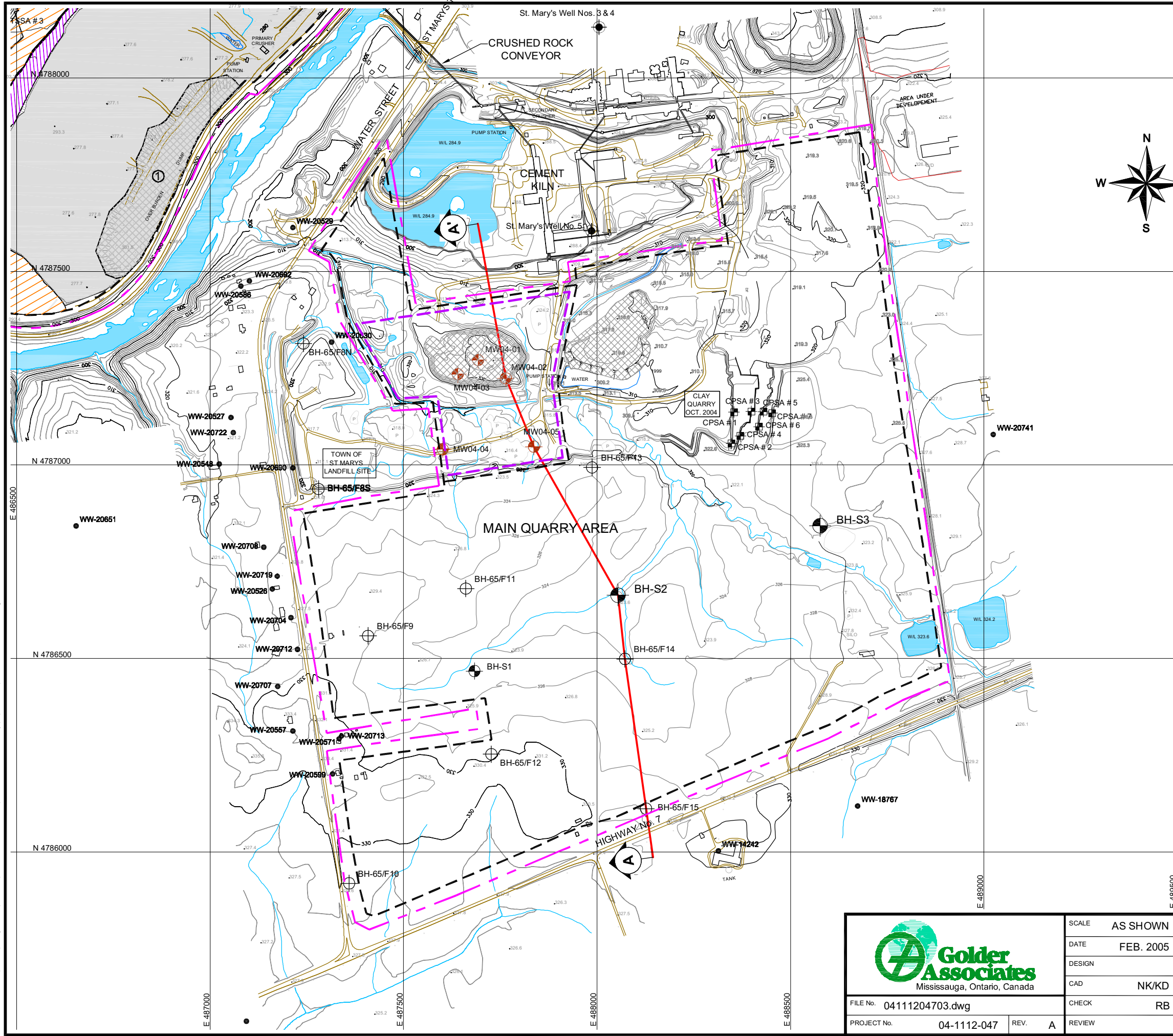
BASE MAP FROM ST. MARYS CEMENT INC. TOPOGRAPHIC SURVEY UPDATED SEPTEMBER 2004, DRAWING No. MP 001 V.01 (3D CONTOURS), UTM NAD83.

OCTOBER 2004 SURVEY OF THOMAS ST. QUARRY FACE AND OVERBURDEN STRIPPING FACE AND SOUTH QUARRY CLAY PIT OBTAINED FROM AGM, FILE NAME SM0412T1.DWG, DATED OCT. 7, 2004, SCALE 1:2000.

 Golder Associates Mississauga, Ontario, Canada	SCALE	AS SHOWN
	DATE	FEB. 2005
FILE No.	0411204702.dwg	
PROJECT No.	04-1112-047	REV. A
CAD	NK/KD	
CHECK	RB	
REVIEW		

TITLE		<h2 style="text-align: center;">DONATION AREA SITE PLAN</h2>
ST. MARYS CEMENT Co.		
FIGURE		<h1 style="font-size: 2em;">2</h1>

PLOT DATE: March 03, 2005  
 FILENAME: M:\CAD\Projects\2004\04-1112-047 (St. Marys Cement)\AA-0411204703.dwg



**LEGEND**

- QUARRY LICENCE BOUNDARY
- QUARRY EXCAVATION SETBACK
- MW04-04 BOREHOLE LOCATION FROM CURRENT INVESTIGATION FOR LANDFILL AREA, REPORT GOLDR NO. 04-1112-047
- CPSA # 3 TEST PITS LOCATION FROM CURRENT INVESTIGATION, 2004
- BH-S1 BOREHOLE LOCATION DRILLED BY GOLDR, 2000
- WW-20618 WATER WELL SUPPLY LOCATION - MINISTRY OF ENVIRONMENT (MOE) WWIS DATABASE
- BH-65/F8 BOREHOLE LOCATION - DRILLED BY ST. MARYS CEMENT, 1965
- MUNICIPAL / INDUSTRIAL WATER SUPPLY WELLS
- LOCATION OF CROSS-SECTIONS
- CKD STOCKPILE
- POTENTIAL LANDFILL DONATION AREA

- NOTES**
1. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ATTACHED REPORT.
  2. THE CURRENT EXCAVATION FACE AT THE QUARRY WAS SURVEYED BY AGM SURVEYING AND ENGINEERING, DRAWING No. SM 0412T1.dwg (OCTOBER, 2004).
  3. THE TEST PITS WERE SURVEYED BY AGM SURVEYING AND ENGINEERING BY REPORT No. SM-CEM-34 (SEPTEMBER, 2004).
  4. FOR CROSS-SECTIONS A-A' SEE FIGURE 4.
  5. LOCATIONS OF 1958, 1965 AND 1974 BOREHOLES AND MOE WELLS ARE APPROXIMATE ONLY.

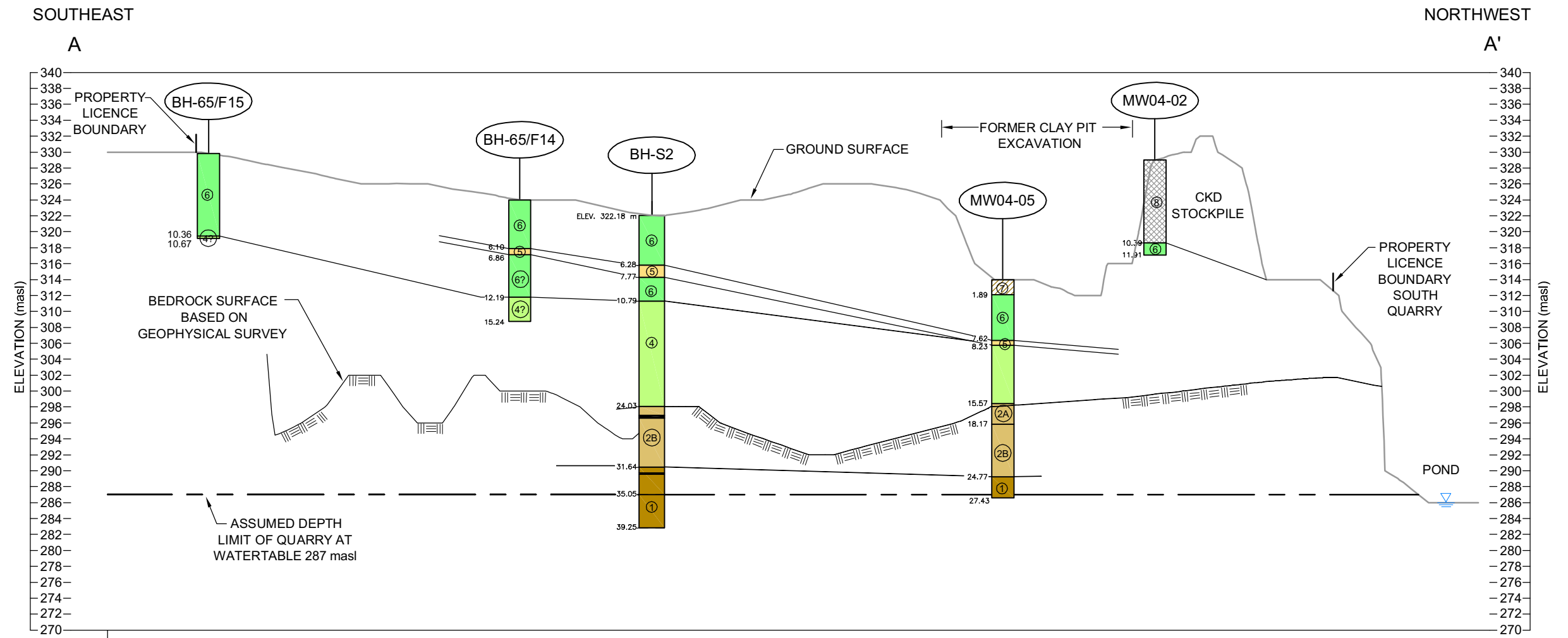
**REFERENCE**

BASE MAP FROM ST. MARYS CEMENT INC. TOPOGRAPHIC SURVEY UPDATED SEPTEMBER 2004, DRAWING No. MP 001 V.01 (3D CONTOURS), UTM NAD83.

OCTOBER 2004 SURVEY OF THOMAS ST. QUARRY FACE AND OVERBURDEN STRIPPING FACE AND SOUTH QUARRY CLAY PIT OBTAINED FROM AGM, FILE NAME SM0412T1.DWG, DATED OCT. 7, 2004, SCALE 1:2000.

200 0 200 400  
 SCALE 1:10000 METRES

 <b>Golder Associates</b> Mississauga, Ontario, Canada	SCALE	AS SHOWN	TITLE	<h2>SITE PLAN SOUTH QUARRY</h2>
	DATE	FEB. 2005		
FILE No.	0411204703.dwg	CAD	NK/KD	<b>ST. MARYS CEMENT Co.</b>
PROJECT No.	04-1112-047	CHECK	RB	
REV.	A	REVIEW		3



**STRATIGRAPHY**

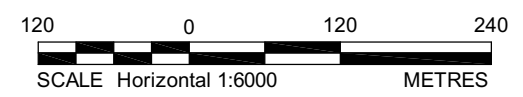
**SURFICIAL DEPOSITS**

- FILL, loose to compact, grey, silt to sand, cement kiln dust
- FILL, loose to compact, brown, silty sand to sand and gravel
- UPPER GLACIAL TILL Very stiff to hard, medium dark grey, moist, massive textured, well graded SILTY CLAY with sand and trace to some matrix support gravel and occasional cobbles of limestone, dolostone, igneous composition.
- MIDDLE GLACIOLACUSTRINE SILT Firm to compact, light grey, moist to wet, dialatent, massive textured, well graded to thinly bedded SILT and CLAYEY SILT.
- LOWER GLACIAL TILL Hard, medium brownish grey, moist to dry appearing, massive textured SILTY CLAY to CLAYEY SILT with sand and trace to some matrix supported gravel, occasional cobbles and boulders of limestone, dolostone and igneous composition. Cobbles and boulders increase to 10 to 20 percent near base of sequence.

**BEDROCK DEPOSITS**

- DUNDEE FORMATION LIMESTONE Fresh, weathered on open bedding partings, light creamy grey to light tan grey, very fine to fine grained, non-porous, thin to medium bedded, partly fossiliferous (rugose corals) LIMESTONE (3A) and Dolomitic Limestone (3B) Limestone tends to separate on open bedding partings.
- UPPER LUCAS FORMATION DOLOMITIC LIMESTONE Fresh, weathered on open bedding partings, light to medium tan to brownish grey, interbedded very fine to fine grained, non-porous to faintly porous, locally pitted to vuggy, thin to medium bedded, laminar textured (stromatolitic) in part and locally oolitic, weakly stylolitic, partly fossiliferous LIMESTONE (2A) and Dolomitic Limestone (2B) with dark tan sections of porous, faintly petroliferous limestone.
- LOWER LUCAS FORMATION DOLOSTONE Fresh, faintly weathered in some beds, moderately weathered on open bedding partings, light to medium tan to brownish grey, very fine to fine grained, faintly to moderately porous, thin to medium bedded, laminar textured DOLOMITIC LIMESTONE to DOLOSTONE with faintly petroliferous beds.

**NOTE**  
FOR LOCATION OF SECTION A - A' REFER TO FIGURE 3

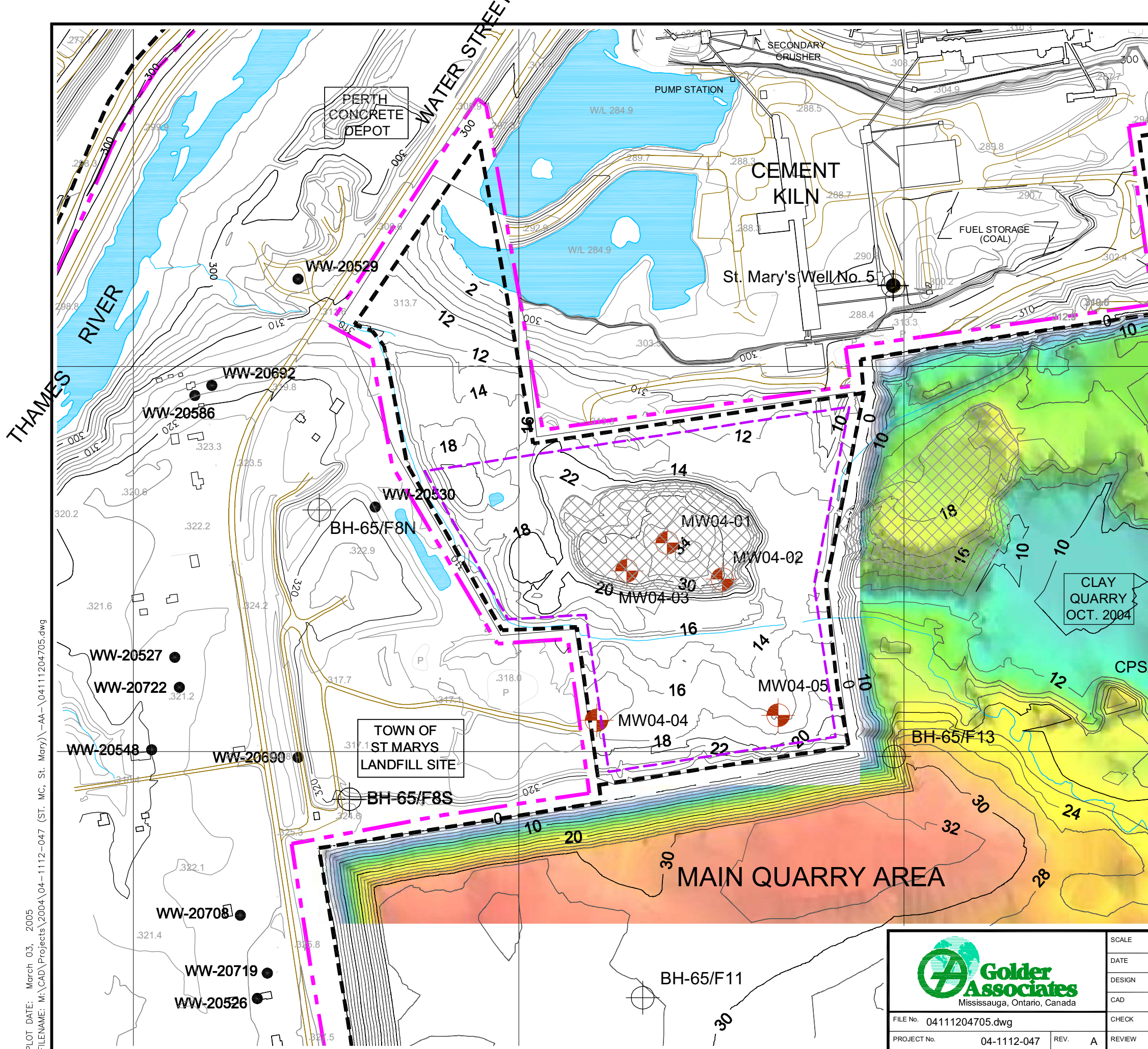


**LEGEND**

- STATIC GROUNDWATER LEVEL
- BH-S1 MEASURED AUGUST 22, 2003
- BH-S3 MEASURED AUGUST 18, 2003

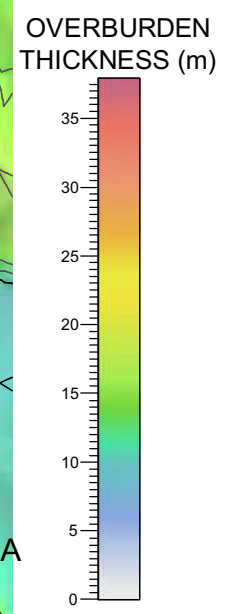
<p><b>Golder Associates</b> Mississauga, Ontario, Canada</p>	SCALE	AS SHOWN	<p><b>SUB-SURFACE CONDITIONS SECTION A-A'</b></p>	
	DATE	FEB. 2005		
	DESIGN			
	CAD	KD		
FILE No.	Q4111204704.dwg	CHECK	RB	<p>ST. MARYS CEMENT Co.</p>
PROJECT No.	04-1112-047	REV.	A	

PLOT DATE: March 03, 2005  
 FILENAME: M:\CAD\Projects\2004\04-1112-047 (ST. MC, St. Mary)\-AA-0411204704.dwg

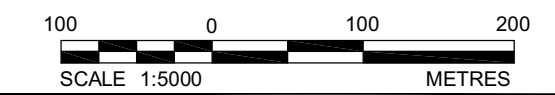


**LEGEND**

- QUARRY LICENCE BOUNDARY
- QUARRY EXCAVATION SETBACK
- BOREHOLE LOCATION FROM CURRENT INVESTIGATION FOR LANDFILL AREA, REPORT GOLDR NO. 04-1112-047
- CPSA # 3 TEST PITS LOCATION FROM CURRENT INVESTIGATION, 2004
- BOREHOLE LOCATION DRILLED BY GOLDR, 2000
- WATER WELL SUPPLY LOCATION - MINISTRY OF ENVIRONMENT (MOE) WWIS DATABASE
- BOREHOLE LOCATION - DRILLED BY ST. MARYS CEMENT, 1965
- MUNICIPAL / INDUSTRIAL WATER SUPPLY WELLS
- OVERBURDEN THICKNESS CONTOUR IN METRES
- CKD STOCKPILE
- POTENTIAL LANDFILL DONATION AREA



- NOTES**
1. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ATTACHED REPORT.
  2. THE CURRENT EXCAVATION FACE AT THE QUARRY WAS SURVEYED BY AGM SURVEYING AND ENGINEERING, DRAWING No. SM 0412T1.dwg (OCTOBER, 2004).
  3. THE TEST PITS WERE SURVEYED BY AGM SURVEYING AND ENGINEERING BY REPORT No. SM-CEM-34 (SEPTEMBER, 2004).
  4. LOCATIONS OF 1958, 1965 AND 1974 BOREHOLES AND MOE WELLS ARE APPROXIMATE ONLY.
  5. TONNAGE ESTIMATES BASED ON VOLUMES WITH BULK DENSITY OF 2.3 T/m<sup>3</sup> FOR SOIL.
- REFERENCE**
- BASE MAP FROM ST. MARYS CEMENT INC. TOPOGRAPHIC SURVEY UPDATED SEPTEMBER 2004, DRAWING No. MP 001 V.01 (3D CONTOURS), UTM NAD83.
- OCTOBER 2004 SURVEY OF THOMAS ST. QUARRY FACE AND OVERBURDEN STRIPPING FACE AND SOUTH QUARRY CLAY PIT OBTAINED FROM AGM, FILE NAME SM0412T1.DWG, DATED OCT. 7, 2004, SCALE 1:2000.



PLOT DATE: March 03, 2005  
 FILENAME: M:\CAD\Projects\2004\04-1112-047 (ST. MC, St. Marys)\AA-0411204705.dwg

<p><b>Golder Associates</b> Mississauga, Ontario, Canada</p>	SCALE	AS SHOWN	<p><b>INFERRED TOTAL OVERBURDEN THICKNESS POTENTIAL LANDFILL DONATION AREA</b></p>
	DATE	FEB. 2005	
DESIGN			<p>ST. MARYS CEMENT Co.</p>
CAD	KD		
FILE No.	0411204705.dwg	CHECK	RB
PROJECT No.	04-1112-047	REV.	A
		REVIEW	
			FIGURE
			<b>5</b>



**APPENDIX A  
RECORD OF BOREHOLES &  
GRAINSIZE TESTING**



PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-01

SHEET 2 OF 2

LOCATION: N 4787271.1 ;E 487692.7

DRILLING DATE: July 30, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	RECOVERY		R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA				HYDRAULIC CONDUCTIVITY		Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION	
								TOTAL CORE %	SOLID CORE %			B Angle	DIP w/ ZL CORE AXIS	K, cm/sec	10						
								JOINT	FAULT			BEDDING	PLANAR	PO	BR						
-- CONTINUED FROM PREVIOUS PAGE --																					
10		Loose, wet, grey brown silty SAND to sandy SILT, trace gravel CKD		322.57 10.26	7																
11					8																Sand
12	12" Hollow Stem Augers with 6 1/4" CME Sampler				9																
13		Loose, wet, black grey silty SAND to SAND, trace gravel, mottled CKD UPPER GLACIAL TILL		319.49 13.34 319.29 13.54																	Screen
14		Hard, brown to grey, moist, well graded SILTY CLAY, sandy, trace to some gravel			10																
15		End of Borehole		317.77 15.06																	Note: Well Stickup 0.73m above ground surface  Water level at 10.69m below ground surface
16		Note: CKD - Cement Kiln Dust																			
17																					
18																					
19																					
20																					

MISS-ROCK-2\_041112047AARCK.GPJ\_GAL-CANADA.GDT\_3/3/05\_DD

DEPTH SCALE

1 : 50



LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-02

SHEET 1 OF 2

LOCATION: N 4787224.0 ;E 487764.2

DRILLING DATE: August 3, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	COLOUR	% RETURN	RECOVERY		R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA			HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
										TOTAL CORE %	SOLID CORE %			B Angle	DIP w/ ZL CORE AXIS	TYPE AND SURFACE DESCRIPTION				
										JN - Joint FLT - Fault SHR - Shear VN - Vein CJ - Conjugate	BD - Bedding FO - Foliation CO - Contact OR - Orthogonal CL - Cleavage			PL - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular	PO - Polished K - Slickensided SM - Smooth Ro - Rough MB - Mechanical Break	BR - Broken Rock				
0	GROUND SURFACE			329.41																
	TOPSOIL			0.00																
	Firm, dry, brown silty SAND to coarse SAND, some gravel, CKD			0.15																
1																				
		Firm, moist, grey silty SAND to sandy SILT, trace coarse sand CKD		328.11															Backfill	
2				1.30																
		Stiff, moist, grey and brown mottled clayey SILT to sandy SILT, trace gravel, CKD		326.67															Hole plug	
3				2.74																
		Stiff, moist, light brown SAND, trace organics, trace coarse sand and silt, CKD		324.84															Benseal	
4				4.57																
																			Hole plug	
5																				
																			Sand	
6																				
7																				
8																				
9																				
10																			Screen	

CONTINUED NEXT PAGE

MISS-ROCK-2\_041112047AARCK.GPJ\_GAL-CANADA.GDT\_3/3/05\_DD

DEPTH SCALE

1 : 50



LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-02

SHEET 2 OF 2

LOCATION: N 4787224.0 ; E 487764.2

DRILLING DATE: August 3, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	RECOVERY	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA				HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION	
											TOTAL CORE %	SOLID CORE %	B Angle	DIP w/ ZL AXIS					TYPE AND SURFACE DESCRIPTION
10	12" Hollow Stem Augers with 6 1/4" CME Sapler	-- CONTINUED FROM PREVIOUS PAGE --																	
		Stiff, moist, light brown SAND, trace organics, trace coarse sand and silt, CKD		319.02	7														
		UPPER GLACIAL TILL		10.39															
11		Hard, brown to grey, moist, well graded SILTY CLAY, sandy, trace to some gravel			8												Screen		
12		End of Borehole		317.50														Note:	
		Note: CKD - Cement Kiln Dust		11.91														Well Stickup 0.71m above ground surface	
13																		Water level at 11.73m below ground surface	
14																			
15																			
16																			
17																			
18																			
19																			
20																			

MISS-ROCK-2\_041112047AARCK.GPJ\_GAL-CANADA.GDT\_3/3/05\_DD

DEPTH SCALE

1 : 50



LOGGED: RDB

CHECKED: RDB





PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-04

SHEET 1 OF 4

LOCATION: N 4787040.7 ; E 487600.1

DRILLING DATE: August 7-8, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	RECOVERY	R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA				HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION		
											TOTAL CORE %	SOLID CORE %	B Angle	DIP w/ ZL AXIS					TYPE AND SURFACE DESCRIPTION	
																			UN	ST
0		GROUND SURFACE		314.19																
0		Brown sand and gravel (FILL)		0.00																
0		UPPER GLACIAL TILL		0.10																
1		Very stiff to hard, medium to dark grey, moist, massive textured, well graded, SILTY CLAY TILL some sand, trace to some gravel, occasional cobbles and boulders of limestone, dolostone and igneous composition (coarse gravel, cobbles and boulders estimated to comprise 5 to 10% of sample).																		
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9		LOWER GLACIAL TILL		305.33 8.86																
10																				

CONTINUED NEXT PAGE

DEPTH SCALE  
1 : 50



LOGGED: RDB  
CHECKED: RDB

MISS-ROCK-2\_041112047AARCK.GPJ\_GAL-CANADA.GDT\_3/3/05\_DD



PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-04

SHEET 2 OF 4

LOCATION: N 4787040.7 ; E 487600.1

DRILLING DATE: August 7-8, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	RECOVERY			R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA			HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
								TOTAL CORE %	SOLID CORE %				B Angle	DIP w/ ZL CORE AXIS	TYPE AND SURFACE DESCRIPTION				
								FLUSH	FLUSH	FLUSH									
10		--- CONTINUED FROM PREVIOUS PAGE ---																	
11		LOWER GLACIAL TILL Hard, medium brownish grey, moist to dry appearance, massive textured, well graded, CLAYEY SILT TILL with sand, some gravel, occasional cobbles and boulders of limestone, dolostone and igneous composition. Limestone cobble at upper contact. Coarse gravel, cobble and boulder content estimated to comprise 10 to 20% below 10.5 m depth. Poor sample recovery below 12 m depth due to cobbles and boulders.		8															
12				9															
13				10															
14				11														Bentonite grout	
15	PQ Soil Coring			12															
16		At 15.85 m to 16.46 m depth, bedded silty sand to sandy silt.		12														Sample 6., 15.85m-16.00m., Sieve and Hydrometer.,	
17		At 16.46 to 16.76 m depth, brown, moist, layered clayey silt and brownish grey silty clay. At 16.76 m to 18.75 m depth, no sample recovery, probably clayey silt till with numerous cobbles and boulders.		17														Sample 7., 16.61 m-16.76m., Sieve and Hydrometer.,	
18				13															
19		Bedrock Surface UPPER LUCAS FORMATION LIMESTONE		14														FR,PL,Ro	
20	HC Coring			15														FR,PL,Ro	
				16														FR,UE,Ro	
		CONTINUED NEXT PAGE																	

MISS-ROCK-2\_041112047AARCK.GPJ\_GAL-CANADA.GDT\_3/3/05\_DD

DEPTH SCALE

1 : 50



LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-04

SHEET 3 OF 4

LOCATION: N 4787040.7 ; E 487600.1

DRILLING DATE: August 7-8, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	RECOVERY		R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA			HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
								TOTAL CORE %	SOLID CORE %			DIP w/CL	CORE AXIS	TYPE AND SURFACE DESCRIPTION				
								FLUSH	FLUSH			FLUSH	FLUSH	FLUSH				
20		-- CONTINUED FROM PREVIOUS PAGE --																
21		Fresh, faintly weathered on open bedding partings, light to medium tan to brownish grey, interbedded very fine to fine grained, non-porous to faintly porous, thin to medium bedded, laminar textured with oolitic beds LIMESTONE with occasional dark tan brown beds of faintly porous petroliferous dolomitic limestone.																
22		At 18.75 to 19.72 m depth, prominent 30° to 40° bedding slump structures.																
23		At 19.30 to 19.72 m depth - medium dark grey, mottled textured dolostone UPPER LUCAS marker bed.																
24																		
25		UPPER LUCAS FORMATION DOLOMITIC LIMESTONE		289.62 24.57														
26		Fresh, faintly to moderately weathered on open bedding partings, tan to grey, fine grained, non-porous to faintly porous, thin to medium bedded DOLOMITIC LIMESTONE with thin crystalline gypsum horizons between 27.46 and 28.07 m depth.																
27																		
28				286.73 27.46														
29				286.12 28.07														
30		CONTINUED NEXT PAGE																

MISS-ROCK-2\_041112047AARCK.GPJ\_GAL-CANADA.GDT\_3/3/05\_DD

DEPTH SCALE

1 : 50



LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-04

SHEET 4 OF 4

LOCATION: N 4787040.7 ;E 487600.1

DRILLING DATE: August 7-8, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	RECOVERY		R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA			HYDRAULIC CONDUCTIVITY		Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
								TOTAL CORE %	SOLID CORE %			B Angle	DIP w/ZL CORE AXIS	K, cm/sec	10				
								JOINTS	FAULTS			UN- UNDULATING	ST - STEPPED	IR - IRREGULAR	PO - POLISHED	K - SLICKENSIDED			
30		-- CONTINUED FROM PREVIOUS PAGE --																	
		LOWER LUCAS FORMATION DOLOSTONE		283.92 30.27	22														
	HQ Coring	Fresh, light tan to grey, fine grained, non-porous to faintly porous thin to medium bedded DOLOSTONE. Top of unit marked by thin, grey mottled porous dolostone bed between 30.27 and 30.39 m.																	
31					23														
32		End of Borehole		282.19 32.00															
33																			
34																			
35																			
36																			
37																			
38																			
39																			
40																			

Note:  
Monitoring well riser n pipe stickup 0.95 m above ground surface water level at 27.41 m below ground surface on August 8, 2004

MISS-ROCK-2 041112047AARCK.GPJ GAL-CANADA.GDT 3/3/05 DD

DEPTH SCALE

1 : 50



LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-05

SHEET 1 OF 3

LOCATION: N 4787047.3 ; E 487836.7

DRILLING DATE: August 12, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	COLOUR	% RETURN	RECOVERY		R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA			HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
										TOTAL CORE %	SOLID CORE %			B Angle	DIP w/ZL CORE AXIS	TYPE AND SURFACE DESCRIPTION				
										JN - Joint FLT - Fault SHR - Shear VN - Vein CJ - Conjugate	BD - Bedding FO - Foliation CO - Contact OR - Orthogonal CL - Cleavage			PL - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular	PO - Polished K - Slickensided SM - Smooth Ro - Rough MB - Mechanical Break	BR - Broken Rock				
0		GROUND SURFACE		314.13																
0		Loose, brown, moist, intermixed SILTY SAND AND GRAVEL, SILT AND SAND, and SILTY CLAY (FILL)		0.00																
1																				
2		UPPER GLACIAL TILL		312.24																
2		Very stiff to hard, medium to dark grey, moist, massive textured, well graded, SILTY CLAY (TILL), some sand, trace gravel grading to CLAYEY SILT (TILL) some sand trace gravel below 5.5 m depth. Coarse gravel, cobbles and boulders of limestone, dolostone and igneous composition comprise approximately 5 to 10% of sample.		1.89																
3																				
3																				
4																				
4																				
5																				
5																				
6																				
6																				
7																				
7																				
8		MIDDLE LACUSTRINE SILT		306.51																
8		Stiff, brownish grey, moist to wet, thinly bedded SILT some sand to CLAYEY SILT.		7.62																
9		LOWER GLACIAL TILL		305.90																
9		Hard, medium brownish grey, moist to dry appearance, massive textured, well graded, CLAYEY SILT TILL with sand, trace to some gravel. Coarse gravel, cobbles and boulders of limestone, dolostone and igneous composition estimated to comprise 10 to 20% of sample below depth of 12 m resulting in poor sample recovery.		8.23																
9																				
10																				
10																				

CONTINUED NEXT PAGE

MISS-ROCK-2\_041112047AARCK.GPJ\_GAL-CANADA.GDT\_3/3/05\_DD

DEPTH SCALE

1 : 50



LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-05

SHEET 2 OF 3

LOCATION: N 4787047.3 ; E 487836.7

DRILLING DATE: August 12, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	PEN. RATE (m/min)	FLUSH	RECOVERY		R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA				HYDRAULIC CONDUCTIVITY			Diametral Point Load Index (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION
							TOTAL CORE %	SOLID CORE %			TYPE AND SURFACE DESCRIPTION		K, cm/sec							
							FLUSH	FLUSH			B Angle	DIP w/ZL CORE AXIS	10	20	30					
10		--- CONTINUED FROM PREVIOUS PAGE --- LOWER GLACIAL TILL																		
9		Hard, medium brownish grey, moist to dry appearance, massive textured, well graded, CLAYEY SILT TILL with sand, trace to some gravel. Coarse gravel, cobbles and boulders of limestone, dolostone and igneous composition estimated to comprise 10 to 20% of sample below depth of 12 m resulting in poor sample recovery.	[Symbolic Log Pattern]																	
11																				
12																				
13																				
14	PQ Soil Coring																			
15																				
16		Bedrock Surface UPPER LUCAS FORMATION LIMESTONE		298.56 15.57																
17		Faintly to moderately weathered on open bedding partings, grey to brownish grey, fine grained, faintly porous, thin bedded LIMESTONE.																		
18																				
19	FIQ Coring	UPPER LUCAS FORMATION DOLOMITIC LIMESTONE		295.96 18.17																
20		Fresh, faintly to moderately weathered on open bedding partings, tan to grey, fine grained, non-porous to faintly porous, thin to medium bedded DOLOMITIC LIMESTONE with thin crystalline gypsum horizons.																		
		CONTINUED NEXT PAGE																		

MISS-ROCK-2\_041112047AARCK.GPJ\_GAL-CANADA.GDT\_3/3/05\_DD

DEPTH SCALE

1 : 50



LOGGED: RDB

CHECKED: RDB

PROJECT: 04-1112-047

# RECORD OF DRILLHOLE: MW 04-05

SHEET 3 OF 3

LOCATION: N 4787047.3 ; E 487836.7

DRILLING DATE: August 12, 2004

DATUM: NAD 83

INCLINATION: -90° AZIMUTH: ---

DRILL RIG: CME 75 TRUCK MOUNT

DRILLING CONTRACTOR: All Terrain

DEPTH SCALE METRES	DRILLING RECORD	DESCRIPTION	SYMBOLIC LOG	ELEV. DEPTH (m)	RUN No.	PENETRATION RATE (m/min)	FLUSH	RECOVERY		R.Q.D. %	FRACT. INDEX PER 1m	DISCONTINUITY DATA			HYDRAULIC CONDUCTIVITY K, cm/sec	Diametral Point Load (MPa)	RMC -Q' AVG.	NOTES WATER LEVELS INSTRUMENTATION	
								TOTAL CORE %	SOLID CORE %			B Angle	DIP w/ZL CORE AXIS	TYPE AND SURFACE DESCRIPTION					
								FLUSH	FLUSH			FLUSH	FLUSH	FLUSH					
20		<p>--- CONTINUED FROM PREVIOUS PAGE ---</p> <p>UPPER LUCAS FORMATION DOLOMITIC LIMESTONE</p> <p>Fresh, faintly to moderately weathered on open bedding partings, tan to grey, fine grained, non-porous to faintly porous, thin to medium bedded DOLOMITIC LIMESTONE with thin crystalline gypsum horizons.</p>																	
21																			
22																			
23																			
24	HQ Coring																		
25		<p>LOWER LUCAS FORMATION DOLOSTONE</p> <p>Fresh, light tan to grey, fine grained, non-porous to faintly porous, thin to medium bedded DOLOSTONE. Top of unit marked by thin, grey mottled porous dolostone bed between 27.17 and 27.38 m depth.</p>		289.36 24.77															
26																			
27																			
28		END OF BOREHOLE		286.70 27.43															
29																			
30																			

MISS-ROCK-2\_041112047AARCK.GPJ\_GAL-CANADA.GDT\_3/3/05\_DD

DEPTH SCALE

1 : 50



LOGGED: RDB

CHECKED: RDB

Note: Borehole bentonite grouted to surface on completion of drilling



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

---

**Appendix D**

**Supplementary Information in Support of**

**Alternative 3A**

November 2022

## **1.0 Introduction**

Government Review Team (GRT) comments on the August 2021 EA raised several concerns regarding preferred Alternative 3 particularly the proximity to, and the potential impacts of the Cement Kiln Dust (CKD) Pile on the relocated watercourse. To address these concerns, the Town re-engaged with St. Marys Cement (SMC) to discuss the watercourse relocation and how far onto SMC lands it might extend. SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their Aggregate Resources Act license. Reflecting on both the comments on the August 2021 EA and the limitations with respect to SMC lands, the study team revisited the preferred Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to relocate the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a refinement to the preferred alternative, Alternative 3A. The new Alternative 3A was incorporated and assessed as part of the alternative methods evaluation and ultimately chosen as the preferred Alternative Method (see Vol. I, Section 7).

This appendix details the conceptual design of Alternative 3A.

## **2.0 Description of Alternative 3A**

The key characteristics of Alternative 3A are provided in Table 1, below.

**Table 1: Key Characteristics of Alternative 3A**

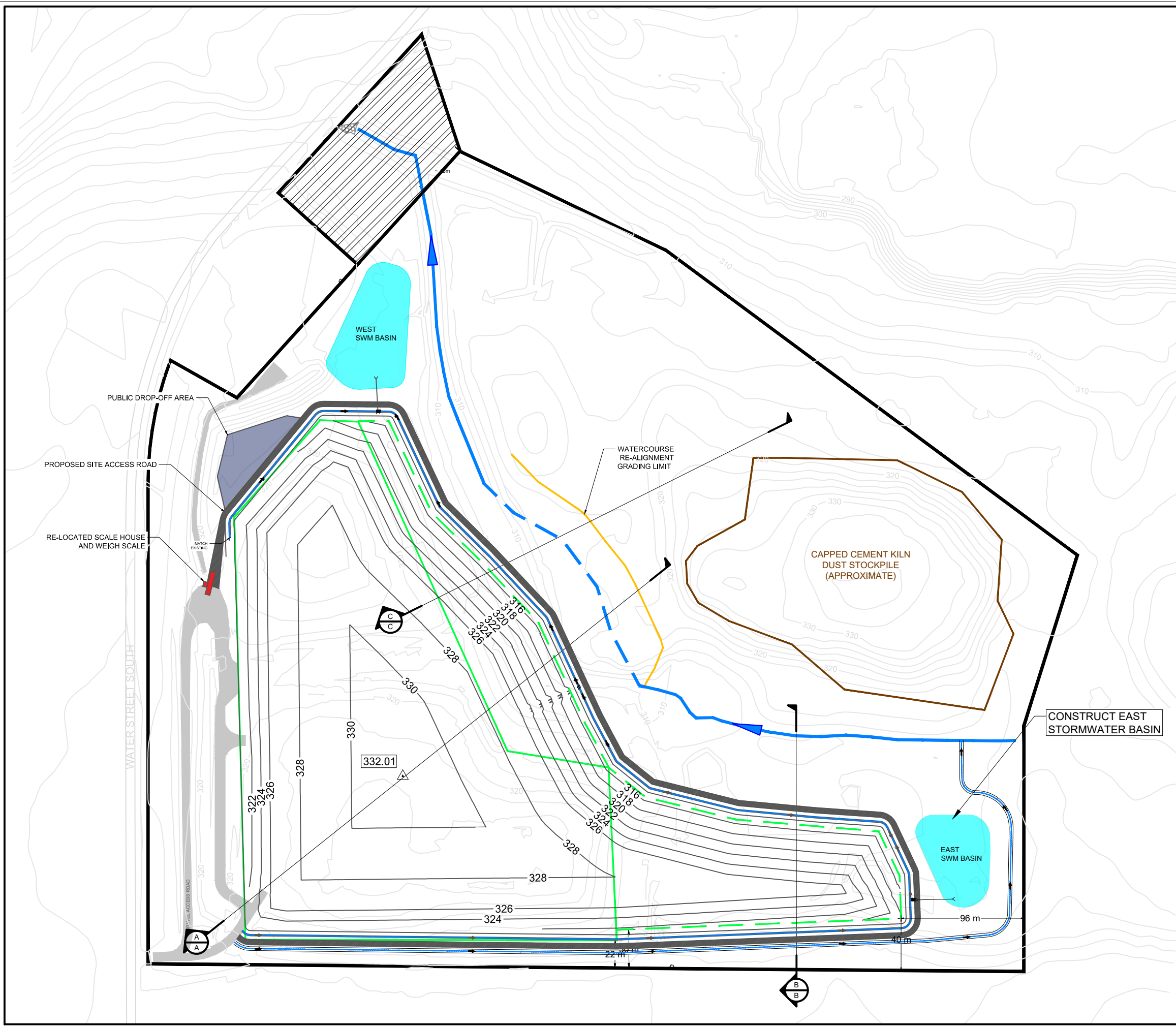
<b>Alternative 3A: A Combination of Vertical and Horizontal Expansion with Watercourse Re-Alignment</b>	
<b>Description</b>	Expand the landfill vertically, above the existing landfill footprint and horizontally to the north and east of the existing landfill footprint. Realign a small portion of the watercourse.
<b>Total Footprint</b>	117,000 m <sup>2</sup>
<b>Total New Disposal Volume</b>	709,000 m <sup>3</sup> (40 years)
<b>Highest Final Peak</b>	331 masl
<b>Changes to Watercourse</b>	The watercourse through the site needs a small (±230 metres) realignment.
<b>Changes to Ancillary Facilities</b>	<ul style="list-style-type: none"> <li>• Scale and scale house to be relocated. New public drop-off area required.</li> <li>• Existing stormwater ponds A and B to be replaced with larger ponds in a new location.</li> <li>• New internal and external ditching required around new waste footprint.</li> <li>• New access road and perimeter road required for waste trucks and site maintenance.</li> </ul>



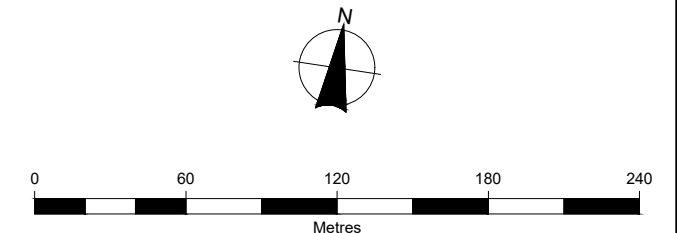
November 2022

The information in Table 1, above, has been incorporated into Vol. I Table 7.1 to allow the comparative evaluation of Alternative Methods. Vol. I, Section 8 describes the preferred Alternative 3A in greater detail to address many of the comments raised by the Government Review Team (GRT). It can be summarized as a combination of a vertical and horizontal expansion of the existing landfill site. Key points of the conceptual design, shown on Figure D-1, are:

- The expansion will operate in a similar fashion as the existing landfill site.
- The landfill property remains 37 hectares. The expansion adds 3.2 hectares to the site's existing 8.0 hectare waste footprint, resulting in a total waste footprint of 11.2 hectares.
- The expansion must provide 708,000 m<sup>3</sup> of additional capacity (Alternative 3A provides 709,000 m<sup>3</sup>). This includes 73,050 m<sup>3</sup> of volume approved through interim ECA's, resulting in 634,950 m<sup>3</sup> of new capacity to address the remaining 40-year Planning Period requirements through December 31, 2056 (see Vol I Section 3.1.3.8).
- Vertical expansion consists of Cells 1 and 2 above and between the existing Phase I and Phase II/III waste footprints.
- Horizontal expansion consists of Cells 3 and 4. These extend the existing waste footprints to the east.
  - To accommodate the horizontal expansion, an approximately 230 m portion in the middle section of the on-site watercourse will be realigned. This is discussed in more detail in Section 2.1.
- For the ultimate build out, a new access road, running from the scale clockwise around the perimeter of the waste footprint, will allow two-way traffic for the segment from the scale to the East Stormwater Management Basin (aka SWM Basin or Pond). It will continue as a single lane road from the pond joining with the existing site access road on the west limit of Phase II/III.
  - The two-lane road will allow waste vehicles to access the tipping face.
  - The one-lane road is meant for site inspections, maintenance and staff access. Waste vehicles will not normally travel on the one-lane road.
- Both existing stormwater management basins will be removed, replaced by two new stormwater management basins to be located at the perimeter of the existing and expanded waste footprint.
  - Runoff originating from within the waste footprint will be directed to an internal ditch system. These ditches convey surface water into the West and East basins for treatment. The basins will discharge to the existing watercourse
  - Runoff originating from lands external to the landfill site will be intercepted by a separate ditch, conveying runoff around and away from the waste footprint before discharging directly to the existing watercourse.



- LEGEND**
- PROPERTY LINE
  - APPROXIMATE CKD PILE COVER LIMIT
  - PROPOSED WATERCOURSE ALIGNMENT
  - EXISTING REFUSE LIMIT
  - EXPANSION REFUSE LIMIT
  - EXISTING CONDITIONS CONTOURS (1m)
  - PROPOSED WASTE CONTOURS (2m)
  - CROSS-SECTION LABEL
  - RIGHT-OF-WAY AND SEWER EASEMENT
  - PROPOSED STORMWATER BASIN (APPROXIMATE)
  - APPROXIMATE PEAK OF WASTE (masl)
  - STORMWATER FLOW DIRECTION



Client <b>TOWN OF ST. MARYS</b>			
Figure Title <b>ALTERNATIVE METHOD 3A PROPOSED FINAL REFUSE CONTOURS</b>			
Drawn ZM	Checked JH	Date JUNE 2022	Figure No. <b>D-1</b>
Scale 1:3000		Project No. 300032339	

November 2022

- The site's groundwater resources will be protected by:
  - Using the site's native clays as a landfill liner, limiting leachate<sup>1</sup> infiltration into the groundwater.
  - Installing a leachate collection system across the new waste footprint, like that of Phase II/III. The leachate collection system will use 'lateral' collection pipes surrounded by gravel like a French drain at regular intervals across the base of the footprint. These 'lateral' pipes will drain to a perimeter 'header' pipe.
- Leachate collected from Phase I, Phase II/III and the new waste footprint will be directed to the site's existing leachate sewer. This connects to the Town's sanitary sewer system at Water Street S., which ultimately takes the leachate to the St. Marys Waste Water Treatment Plant (WWTP) for treatment.
- The site buffer is at least 30 m wide. The buffer allows adequate space for vehicle usage, operations and activities which ensure there is no operation negatively impacting areas outside of this buffer zone.

## **2.1 Watercourse Realignment**

Preferred alternative 3A is premised on retaining most of the approximately 790 m long watercourse, between the east property line and Water Street North, which bisects the site in its present location. There will be a realignment of an approximate 230 m reach within the middle of the site. The proposed realignment is shown on Figure D-2.

The realigned watercourse is designed to provide a 20 m buffer from the toe of the CKD pile embankment to the edge of the realignment grading (top-of-bank). As a contingency, this buffer could include a CKD surface water interception swale and monitoring pond.

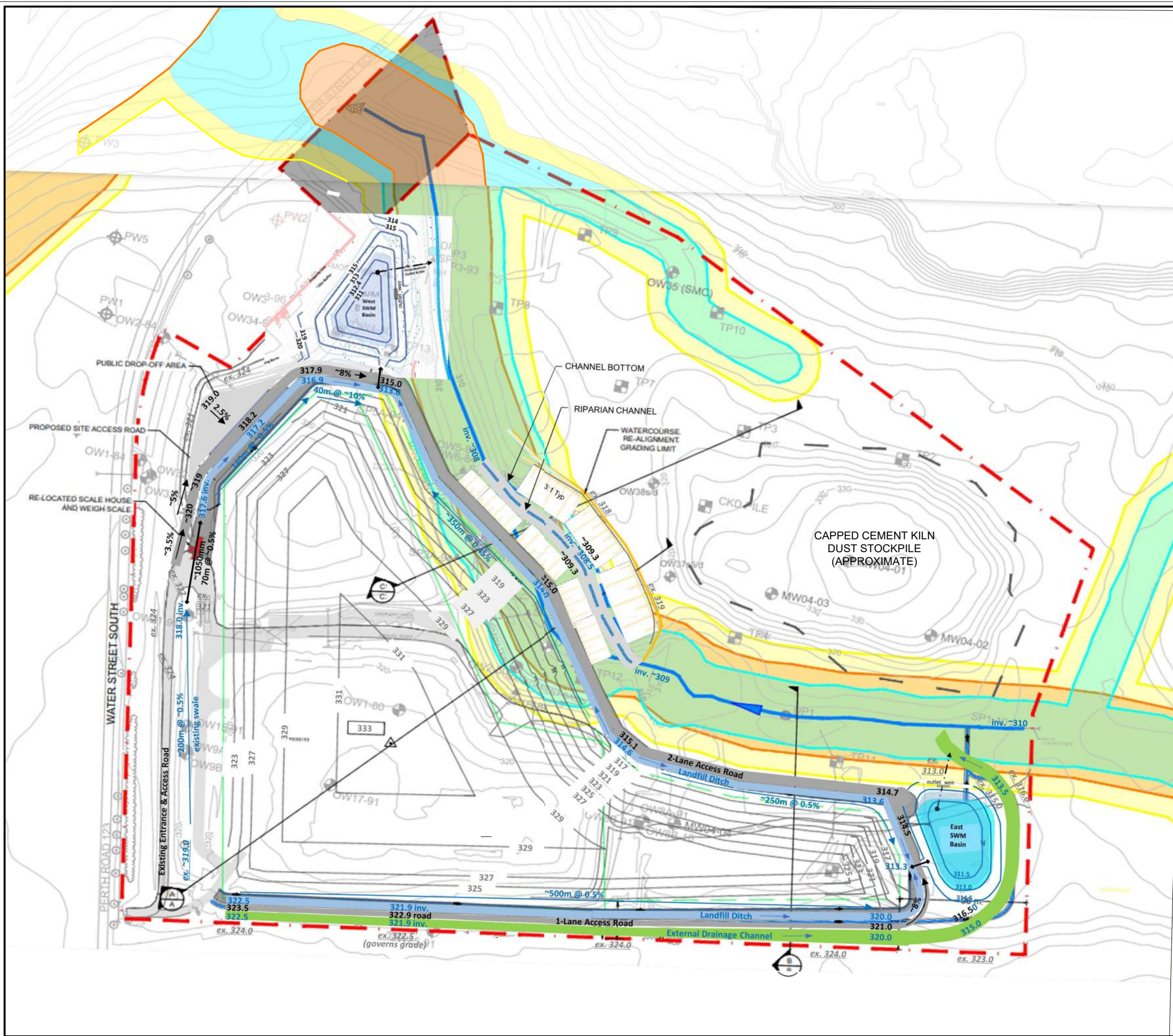
The realigned watercourse has been designed to match the existing watercourse, assuming:

- 20 m (approximate) buffer to CKD pile
- 50 m to 60 m wide corridor, including:
  - 3:1 embankments,
  - 15 m (approximate) wide watercourse bottom, and
  - 2.5 m to 3.0 m wide riparian channel.

Some minor adjustments to this design may be made to align with natural channel design principles. Additional improvements to the remaining sections of the watercourse through the landfill property will be made, including the addition of channel substrates, installation of habitat features and bank stabilization, where required. All new and remaining riparian areas will be naturalized with trees, shrub and grass plantings.

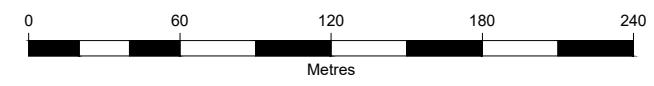
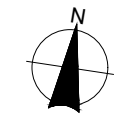
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<sup>1</sup> Leachate is contaminated groundwater generated from landfilled waste mixing with groundwater, rainwater and/or snow melt. Contaminants in the waste are extracted much like a coffee percolator. Water drips into coffee grinds (waste) creating the coffee (leachate).



**LEGEND**

- - - PROPERTY LINE
  - EXISTING WATERCOURSE
  - PROPOSED WATERCOURSE ALIGNMENT
  - EXISTING REFUSE LIMIT
  - EXPANSION REFUSE LIMIT
  - EXISTING CONDITIONS CONTOURS (1m)
  - ?? MONITORING/OBSERVATION WELL
  - ?? TESTPIT
  - CROSS-SECTION LABEL
  - EXTERNAL DRAINAGE CHANNEL
  - ACCESS ROAD
  - LANDFILL DITCH
- UPPER THAMES RIVER CONSERVATION AUTHORITY REGULATED AREAS**
- REGULATION LIMIT 2021
  - EROSION HAZARD LIMIT
  - FLOODING HAZARD LIMIT



Client

**TOWN OF ST. MARYS**

Figure Title

**ALTERNATIVE METHOD 3A  
PROPOSED GRADING AND SITE PLAN**

Drawn DB	Checked DB	Date JUNE 2022	Figure No. <b>D-2</b>
Scale 1:3,000	Project No. 300032339		

November 2022

The realigned section will be constructed in stages. Most of the realigned watercourse can be constructed in the dry by not making connections at the upstream and downstream ends. Once the banks are vegetated and stabilized, the downstream connection will be made. Any wildlife within the existing channel will be salvaged and relocated. The upstream connection will then be made and the existing channel closed off. No in-water work will occur during June and July.

It is expected that the realignment construction will begin during the operation of Cell 1 and be completed before excavation of Cell 3 begins.

## **2.1 Construction Activities**

Site construction activities would likely include one or more of each of the following equipment: excavator, wheel tractor scraper, bulldozer, construction truck, and a compactor, along with vehicles arriving for on-site delivery of materials. Construction will occur in relatively short bursts (likely two-three months at a time) and will occur while landfill operations are on-going.

Construction is required to prepare for each cell's operation (except Cell 1) and for site closure at the end of the planning period. Construction of Cell 2 features will precede in parallel with Cell 1 operation. Similarly, Cell 3 construction will occur during operation of Cell 2 and Cell 4 construction will occur when Cell 3 is in operation. Closure cover (aka, Final Cover) will be applied progressively to the site and completed following receipt of the last load of waste.

We are also anticipating some minor post-closure construction efforts will occur. These will be focused on small areas of the site to address settlement, cover erosion or desiccation, or repairing a leachate seep. These activities normally take less than a day to address.

## **3.0 Supplemental Data Collection and Effects Assessment**

### **3.1 Atmosphere**

#### **3.1.1 Air Quality**

##### **3.1.1.1 Baseline Data Collection & Evaluation**

No additional data collection was required to support the assessment of Alternative 3A with respect to air quality.

##### **3.1.1.2 Supplemental Information for Section 7.4.1 Evaluation of Alternatives**

Air emissions from Alternative 3A are expected to be similar or better than emissions produced by Alternative 3. The additional height of Alternative 3A would result in slightly better air quality (lower emissions from the landfill) due to dispersion. As a result, Alternative 3A was not specifically modeled. The model considers the effect at the property line and at sensitive receptors off property. As a result, the maximum ground level concentration can be at one location for one scenario and a different location for another scenario. The footprint of the landfill in Alternative 3A is the same distance to the western property line where sensitive

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receptors are located as Alternative 3. The model also considers the final landfill height. The maximum concentration of air contaminants occurs at ground level. With increasing height, there is greater dispersion and, therefore, lower concentrations of contaminants in the air. Alternative 3A will have a final landfill height that is higher than Alternative 3. Therefore, relative to Alternative 3, Alternative 3A can be expected to have slightly lower concentrations of air contaminants. For the purposes of the evaluation, the differences are expected to be minimal and are considered negligible.

### **3.1.1.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. I, Section 11.

## **3.1.2 Odour**

### **3.1.2.1 Baseline Data Collection & Evaluation**

No additional data collection was required to support the assessment of Alternative 3A with respect to odour.

### **3.1.2.2 Supplemental Information for Section 7.4.2 Evaluation of Alternatives**

Odours emissions are expected to be like Alternative 3 as the proximity of the landfill footprint to sensitive receptors is the same for both alternatives 3 and 3A. the additional height of Alternative 3A may result in slightly lower odour emissions due to dispersion. As a result, Alternative 3A was not modeled. As with the air quality evaluation, the differences between Alternative 3 and Alternative 3A are expected to be minimal and are considered negligible.

### **3.1.2.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. I, Section 11. A commitment has been made to re-model odour during detailed design.

## **3.1.3 Noise**

### **3.1.3.1 Baseline Data Collection & Evaluation**

No additional data collection was required to support the assessment of Alternative 3A with respect to noise.

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### **3.1.3.2 Supplemental Information for Section 7.4.3 Evaluation of Alternatives**

Noise emissions are expected to be like Alternative 3 as the proximity of the landfill footprint to sensitive receptors is the same for both alternatives and the noise sources are unchanged. As a result, Alternative 3A was not modelled.

### **3.1.3.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11.

## **3.2 Hydrogeology**

### **3.2.1 Baseline Data Collection & Evaluation**

GRT comments on the August 2021 EA identified concerns regarding preferred Alternative 3's proximity to, and the potential impacts of, the Cement Kiln Dust (CKD) Pile on the relocated watercourse. Alternative 3A was subsequently developed to realign a small portion (approximately 230 m) of the watercourse rather than relocating it entirely (as with Alternative 3). However, to address the GRT comments, additional baseline data collection was undertaken to better understand hydrogeologic conditions in the vicinity of the realigned watercourse and the potential risks associated with the proximity to the CKD pile.

In April 2022, field investigations were initiated to:

- Characterize subsurface soil and groundwater conditions both along the watercourse realignment and between the Cement Kiln Dust (CKD) pile and the watercourse realignment.
- Assess the likelihood of encountering CKD material along the proposed route for the realignment and identify if leachate from CKD pile may impact the watercourse.
- Assess the likelihood of encountering the "sand and silt" seam (i.e., meltwater deposits) either along the realignment or between the CKD pile and the realignment.
- Assess the potential for groundwater recharge/discharge conditions between the watercourse and the CKD pile.
- Assess whether the sand and silt seam (meltwater deposits) represent a groundwater migration pathway between the CKD pile and the watercourse realignment.
- Assess current soil characteristics, groundwater levels, groundwater quality between the CKD pile and the watercourse and historical surface water quality in the watercourse prior to construction to establish baseline conditions.

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- Incorporate the sentry wells into the updated Environmental Monitoring Program once the MECP approves the proposed expansion and an ECA is secured. The Sentry wells will assess changes in water quality between the CKD pile and the watercourse and provide a means of predicting future impacts of the CKD pile on the watercourse realignment.
- Identify triggers and develop a contingency plan and response actions.

### **3.2.1.1 Borehole and Monitoring Well Installations**

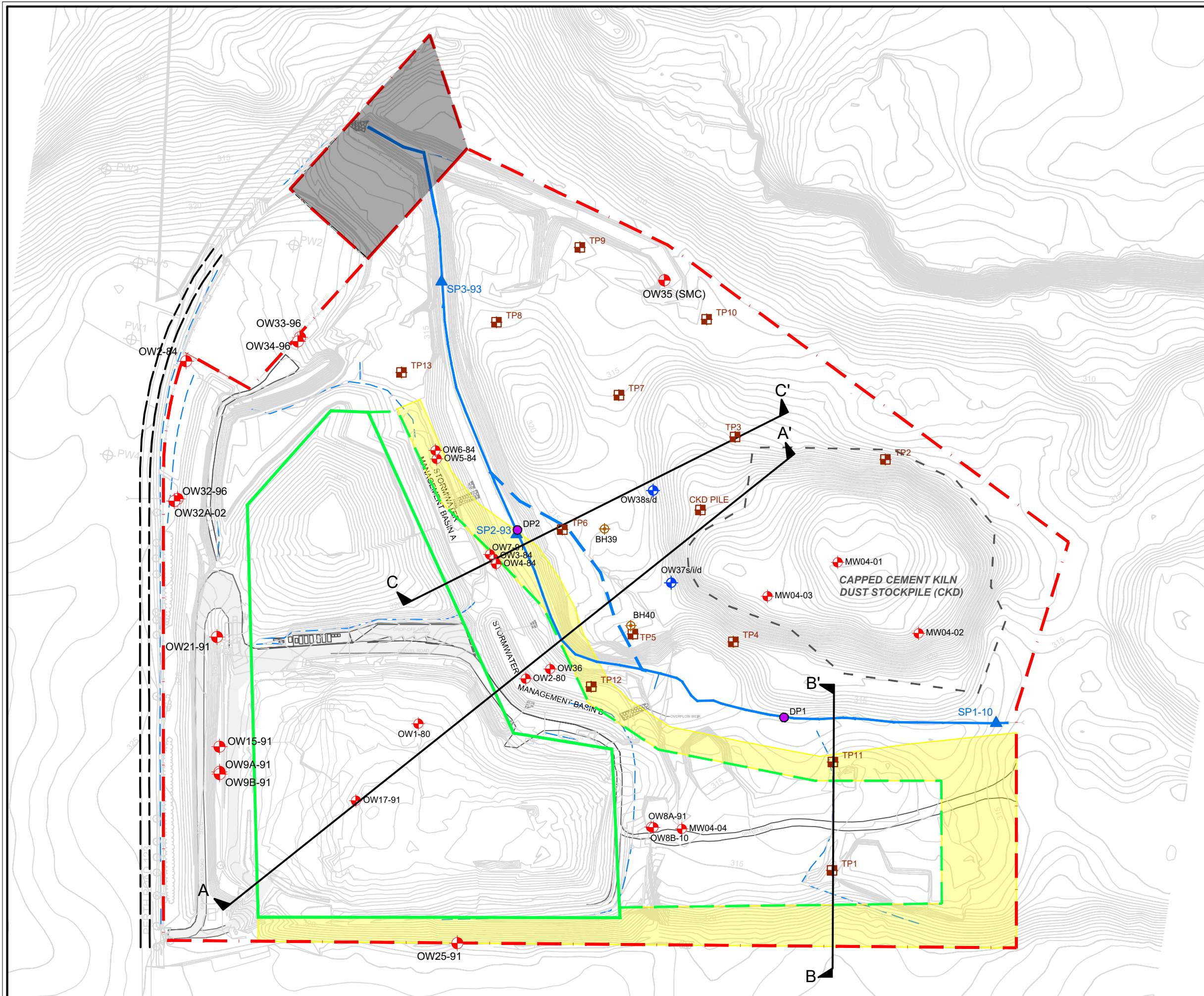
Five monitoring wells and two boreholes were installed between April 8 and 12, 2022. The locations are presented in Figure D-3 (Plan view) and the Cross Sections A-A' and C-C' (Figure D-4 and Figure D-5). Borehole logs are presented in Attachment A.

Soil (colour, texture, inferred origin [native versus fill/waste/CKD], depth, moisture, etc.) and groundwater conditions encountered at the time of drilling were documented and used to determine drilling depth and well installation details. Continuous split spoon soil samples were retrieved from each drilling location. Standard penetration tests (blow counts) were recorded for each split spoon. Representative soil samples were collected and submitted for laboratory analysis of grain size distribution, moisture content, and CKD related soil quality parameters (pH, sulphate, chloride, potassium, and sodium). The grain size distribution and moisture content results are presented in Attachment B. Laboratory Soil quality results are provided in Attachment C.

Monitoring wells were installed in separate holes at MW37 and MW38 using 52 mm (2 inch) diameter, Schedule 40, PVC slotted 1.5 metre (m) screen and riser pipe. Silica sand was placed around and at least 30 cm above the well screen, then the annulus was backfilled with bentonite grout/pellets and secured with a monument style above ground steel casing.

On April 22, 2022, the new well locations and elevations were surveyed. The location, ground surface elevation and top of pipe elevation were surveyed at each borehole/monitoring well location to tie in the wells and water level data to the existing well monitoring network. A summary is presented in Table 2, below.



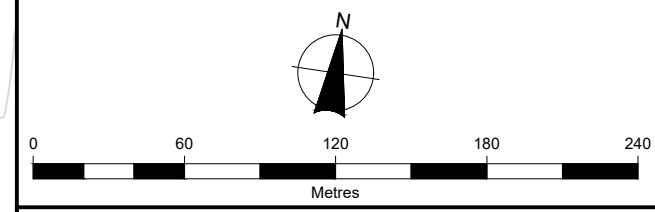


- LEGEND**
- - - PROPERTY LINE
  - - - APPROXIMATE CKD PILE COVER LIMIT
  - EXISTING WATERCOURSE
  - - - PROPOSED WATERCOURSE ALIGNMENT
  - EXISTING REFUSE LIMIT
  - - - EXPANSION REFUSE LIMIT
  - PERIMETER INFRASTRUCTURE
  - EXISTING CONDITIONS CONTOURS
  - PROPOSED WASTE CONTOURS
  - ⊕ MONITORING WELL (RJB, 2022)
  - ⊕ MONITORING/OBSERVATION WELL
  - ⊕ TESTPIT
  - ▲ SURFACE WATER SAMPLING LOCATION
  - ⊕ BOREHOLE (RJB, 2022)
  - DRIVE POINT PIEZOMETER
  - A A' CROSS-SECTION LABEL
  - RIGHT-OF-WAY AND SEWER EASEMENT

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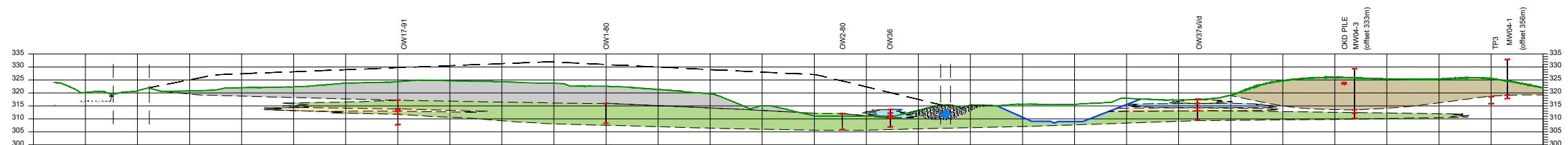
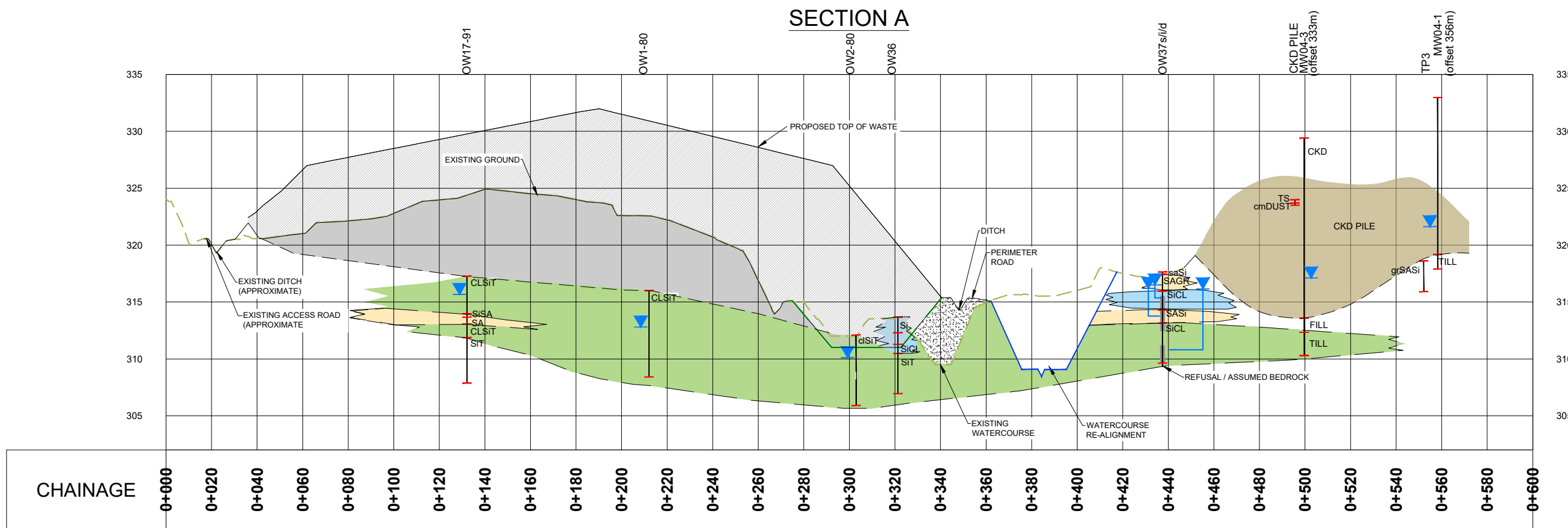


Client  
**TOWN OF ST. MARYS**

Figure Title  
**ALTERNATIVE METHOD 3A  
HYDROGEOLOGICAL CONSIDERATIONS  
PLAN VIEW**

Drawn SK	Checked KH	Date MAY 2022	Figure No. <b>D-3</b>
Scale 1:3000	Project No. 300032339		

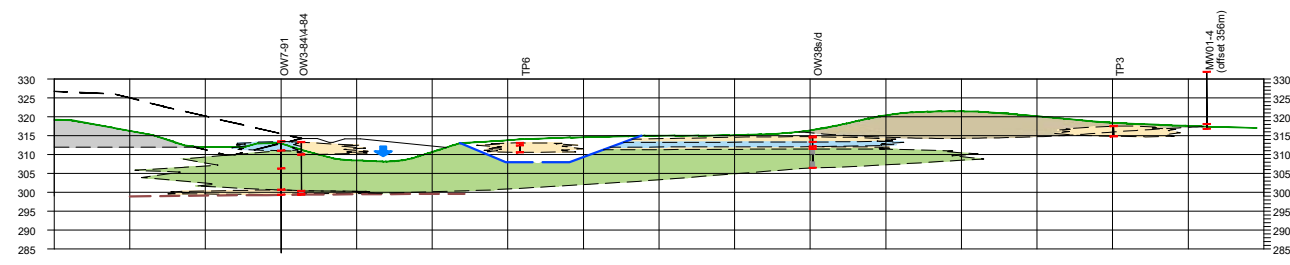
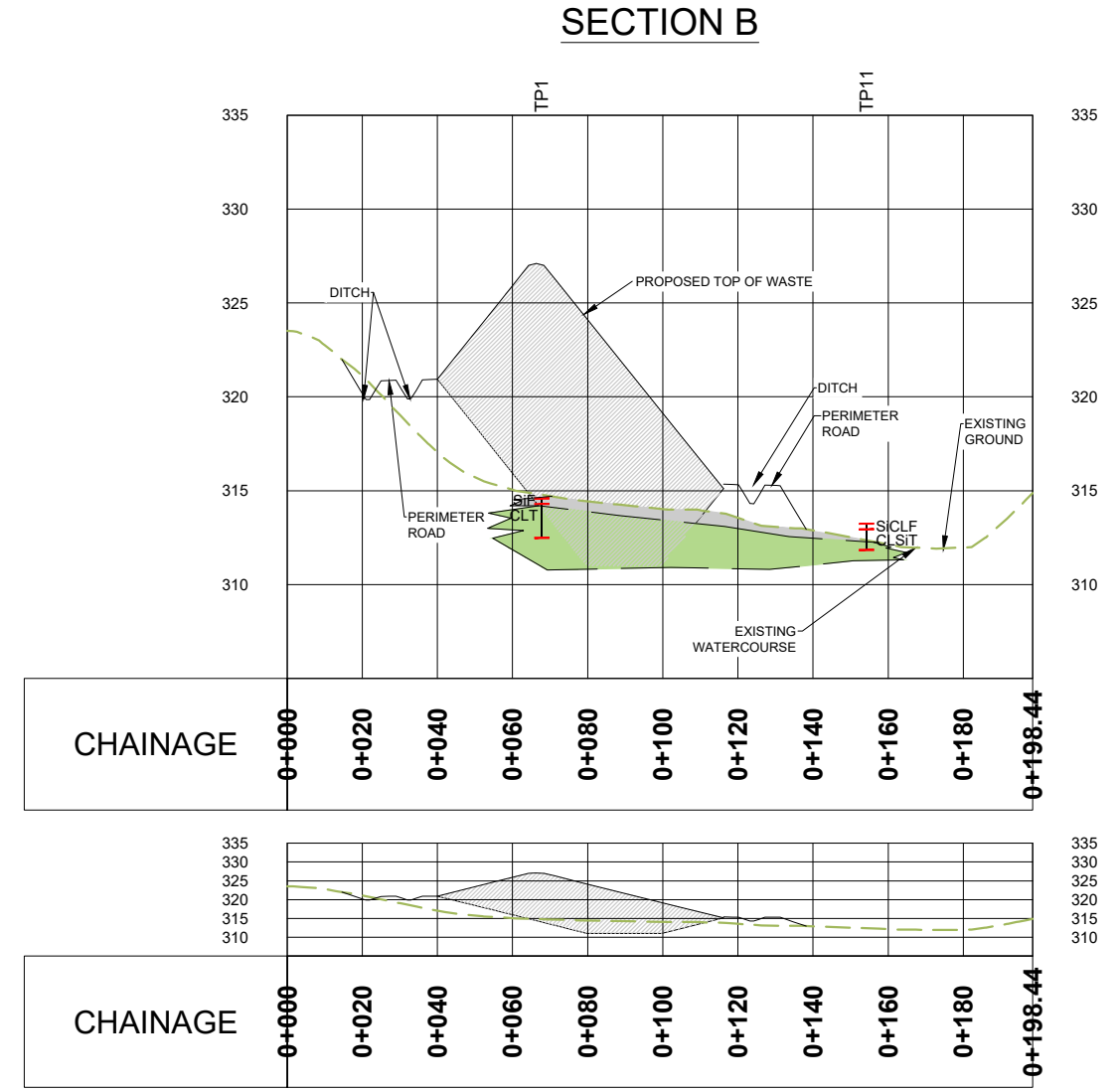
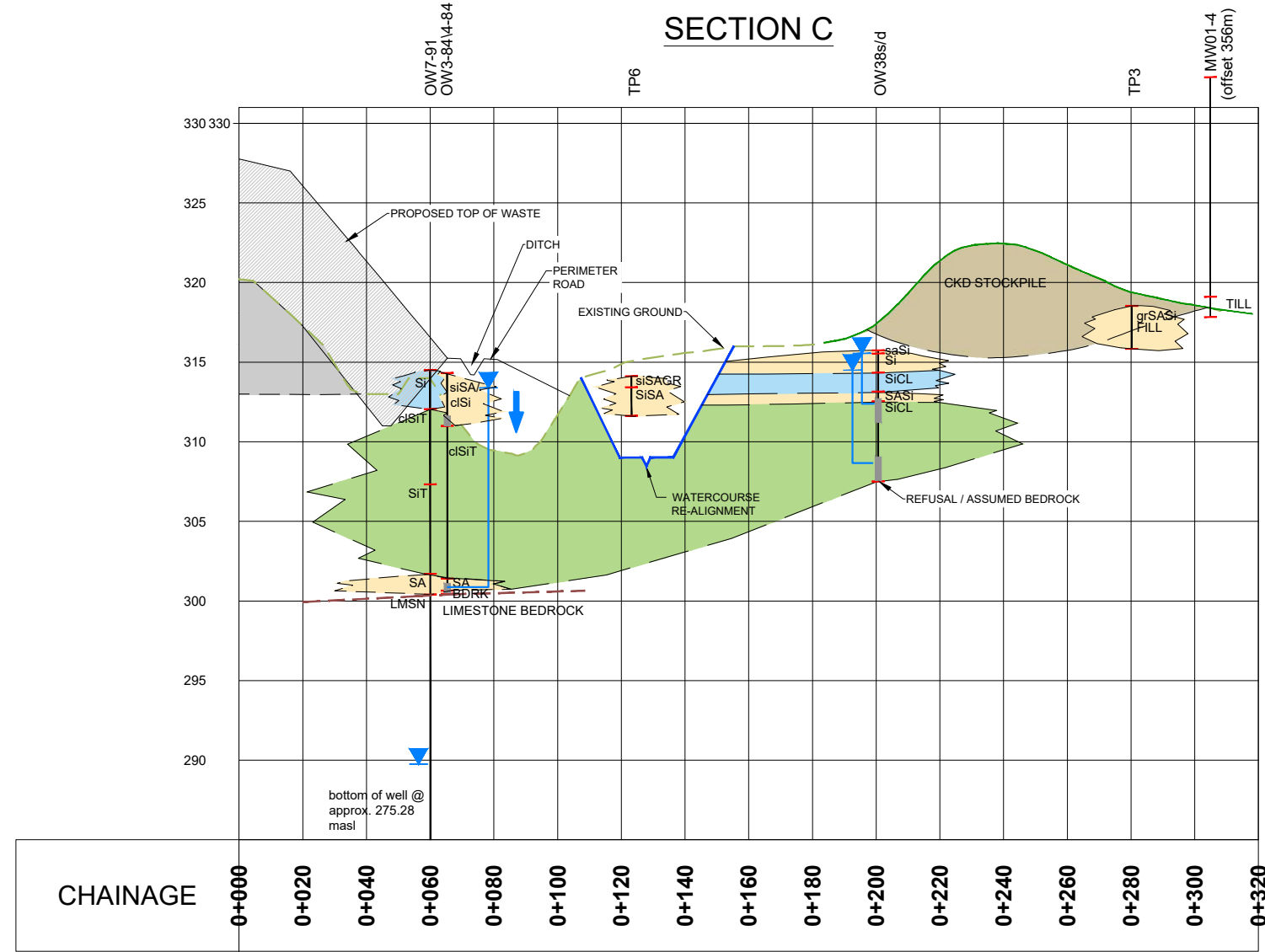
# SECTION A




Client  
**TOWN OF ST. MARYS**

Figure Title  
**ALTERNATIVE METHOD 3A**  
CROSS SECTION A-A

Drawn ZM	Checked JH	Date MAY 2022	Figure No. <b>D-4</b>
Scale 1:2,000	Project No. 300032339		





**BURNSIDE**

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Client

## TOWN OF ST. MARYS

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Figure Title

### ALTERNATIVE METHOD 3A CROSS SECTIONS B & C

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Drawn ZM	Checked JH	Date MAY 2022	<b>D-5</b>
Scale 1:3,000	Project No. 300032339		

November 2022

**Table 2: Monitoring Well and Borehole Details**

Elevations (masl)	MW37S-22	MW37I-22	MW37D-22	MW38S-22	MW38D-22	BH39-22	BH40-22
	(MW37S)	(MW37I)	(MW37D)	(MW38S)	(MW38-D)	(BH39)	(BH40)
Easting	-	-	487 561	-	487 537	487 501	487 536
Northing	-	-	4 787 234	-	4 787 307	4 787 258	4 787 155
Ground Surface	317.18	317.27	317.17	315.81	315.83	320.37	318.25
Top of Casing	318.26	318.30	318.24	316.95	316.95	--	--
Top of Screen	315.21	313.72	310.62	312.76	309.33	--	--
Bottom of Screen	313.69	312.20	309.10	311.24	307.81	--	--

Notes: masl – metres above sea level

- The wells were numbered in sequence with other site wells and given the postscript “-22” to indicate the year drilled to be consistent with other site wells. (NB: Well Name with and without the postscript are used interchangeably throughout this document (i.e., “MW38S-22” is the same as “MW38S”. Relative well depths: “S” – shallow, “I” – intermediate, “D” – deep.
- Elevations are in metres above sea level (m asl) and have been tied to site surveyed elevations.
- Well coordinates are in NAD83, Zone 17T.
- Monitoring wells were not installed at BH39 and BH40.
- Monitoring well details for all previously installed wells are presented in Attachment B.

### 3.2.1.2 Well Development

On April 11, 2022, water levels were recorded at the newly installed wells relative to the top of well casing. MW37S was observed to be dry, so on April 12, 2022, MW37I was installed to observe shallow groundwater at the MW37 well nest. The wells were developed by purging up to ten well volumes to remove sediment from the well screen and sand pack. If the well was pumped dry prior to reaching ten well volumes a second purge was attempted after three hours. Well development data is presented below in Table 3.

**Table 3: Well Purging Details**

Well ID	Date	Water Level (m btop)	Total Depth (m btop)	Calculated Purge (L)	1 <sup>st</sup> Purge (L)	2 <sup>nd</sup> Purge (L)
MW37S	11-Apr-22	Dry	4.57	-	-	-
MW37I	12-Apr-22	3.86	6.11	45	45	-
MW37D	11-Apr-22	2.04	9.11	140	28	28
MW38S	11-Apr-22	2.47	5.72	65	65	-
MW38D	11-Apr-22	2.11	9.11	140	25	8

m btop – metres below top of pipe; L – litres

<sup>1</sup> When the well went dry during the 1<sup>st</sup> purge a 2<sup>nd</sup> purge was attempted after 3 hours.

### 3.2.1.3 In-Situ Hydraulic Conductivity Testing

In-situ hydraulic conductivity testing (rising head/falling head slug testing) was also completed on the new wells. The hydraulic conductivity in the deep wells (MW37D and MW38D) was too low to conduct a rising and falling head test during the time on site. As such, only the falling

November 2022

head slug test was completed. The results are presented in Attachment D and summarized in Table 4 below.

**Table 4: Hydraulic Conductivity Summary**

Well ID	Soil Unit	Hydraulic Conductivity (K) (m/s)	Notes
MW37S	Silt and Clay (Till)	--	Not tested, well dry/insufficient water
MW37I	Sand and Silt	3.0x10 <sup>-6</sup> 6.3x10 <sup>-6</sup>	In Situ Falling Head In Situ Rising Head →Geometric Mean: 4.3x10 <sup>-6</sup>
MW37D	Silt and Clay (Till)	5.4x10 <sup>-7</sup>	In Situ Falling Head
MW37D	Silt and Clay (Till)	1x10 <sup>-10</sup>	Geometric mean from other on-site wells screened in the Till Recovery too slow to complete In Situ rising head test which is consistent with previous low K estimates
MW38S	Sand and Silt/Silt & Clay	7.1x10 <sup>-6</sup> 4.1x10 <sup>-6</sup>	In Situ Falling Head In Situ Rising Head →Geometric Mean: 5.4x10 <sup>-6</sup>
MW38D	Silt and Clay (Till)	1x10 <sup>-10</sup>	Geometric mean from other on-site wells screened in the Till Recovery too slow to complete In Situ testing which is consistent with previous low K estimates

Notes:

Previous test results were summarized in Table 4.6 of the EA Hydrogeological Study (Volume III, Appendix C).

### 3.2.1.4 Soil Quality

A series of soil samples were collected at each drilling location. The samples were typically collected at the screened interval to correlate the soil quality with the groundwater quality in the monitoring wells. Given that there was no evidence of CKD related materials or evidence of CKD impacts to the soil at any of the drilling locations, no other soil samples were collected or submitted for chemical analysis. The results are summarized below in Table 5.

**Table 5: Soil Quality Summary**

Location	Distance to CKD	Depth	Soil Description	pH	Sulphate	Chloride	Sodium	Potassium
	(m)	(m bgl)			µg/g	µg/g	µg/g	µg/g
BH37	20	3.35	Sand & Silt	7.75	70	5	185	1300
		7.62	Till	7.71	116	38	244	2590
BH38	50	2.74	Sand & Silt	7.65	127	48	228	2600
		8.23	Till	7.74	109	21	275	3880
BH39	70	3.35	Till	7.28	210	3	252	2900
		6.40	Till	7.35	68	3	238	2490

November 2022

Location	Distance to CKD	Depth	Soil Description	pH	Sulphate	Chloride	Sodium	Potassium
	(m)	(m bgl)			µg/g	µg/g	µg/g	µg/g
		7.92	Till	7.48	100	3	276	3120
BH40	62	3.35	Silt & Sand	7.39	23	<2	254	3760
		4.88	Silt	7.42	70	2	173	1200
		7.01	Till	7.42	330	166	411	4660

Notes:

Distance to CKD is based on inferred limit shown on Figure D-3  
m =metres; bgl = below ground level, µg/g microgram per gram

The primary mechanism for soil at the watercourse realignment to be impacted by CKD, would be if CKD waste had been placed within the watercourse realignment (i.e., beyond the limit of CKD waste presented in Figure D-3). The borehole logs, and soil quality results indicate there are no CKD materials in the soil or near the watercourse realignment.

The more permeable sand and silt seam (meltwater deposits) within the site stratigraphy is the most likely preferential pathway for CKD impacts to migrate via groundwater toward the watercourse realignment.

The pH of each soil sample was near neutral suggesting that CKD related impacts are not evident in the soil at the four borehole locations. There is no obvious correlation of soil chemistry between: the proximity of each borehole relative to the CKD pile; the position of the borehole relative to groundwater flow from the CKD pile (Figure D-6); the depth at which the sample was collected; or the relative permeability of the soil unit (as detailed in Section 3.2.1.3).

### 3.2.1.5 Groundwater Flow

Water levels were recorded on several occasions at monitoring wells located near the watercourse realignment. Water level data is presented below in Table 6.

**Table 6: Groundwater Elevations**

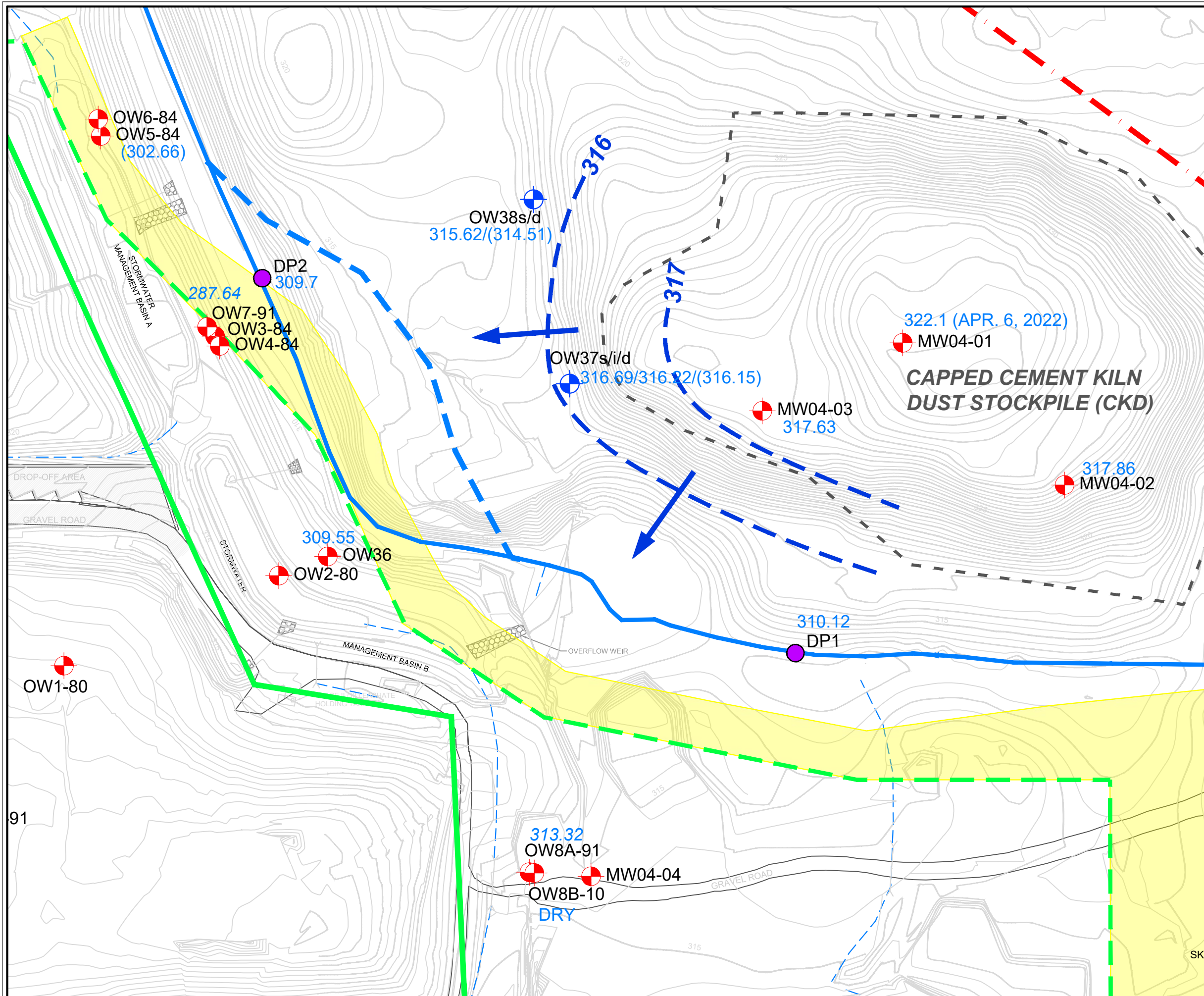
Dates (2022)	MW37 S	MW37I	MW37 D	MW38 S	MW38 D	MW04-01	MW04-02	MW04-03
	Groundwater Elevation (metres above sea level)							
April 11	Dry		316.20	314.48	314.84	-	-	-
April 12	Dry	314.44	315.46	315.15	308.10	322.10	317.72	317.45
April 22	316.04	316.06	316.11	315.46	310.03	-	-	-
May 6	316.69	316.22	316.15	315.62	314.51	-	317.86	317.63

Notes: The water levels at MW38S continue to rise. Non-static conditions possible.  
– Not Measured

The water levels collected on May 6, 2022, approximately two weeks after development, sampling, testing, and purging, are assumed to best reflect static water level conditions. On

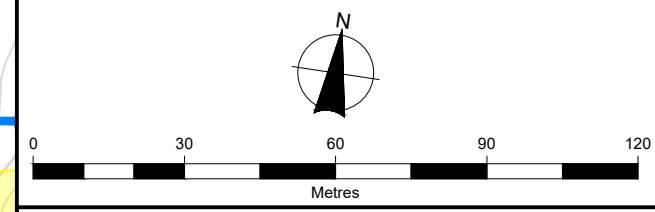
November 2022

May 6, 2022, the water levels in the deeper wells are lower than those in the shallower wells indicating downward flow in the subsurface.



- LEGEND**
- - - PROPERTY LINE
  - - - APPROXIMATE CKD PILE COVER LIMIT
  - EXISTING WATERCOURSE
  - - - PROPOSED WATERCOURSE ALIGNMENT
  - EXISTING REFUSE LIMIT
  - - - EXPANSION REFUSE LIMIT
  - PERIMETER INFRASTRUCTURE
  - EXISTING CONDITIONS CONTOURS
  - PROPOSED WASTE CONTOURS
  - ⊕ MONITORING WELL (RJB, 2022)
  - ⊕ MONITORING/OBSERVATION WELL
  - DRIVE POINT PIEZOMETER
  - 316.69 MEASURED WATER LEVEL - MAY 2022 (SHALLOW WELL)
  - (316.69) MEASURED WATER LEVEL - MAY 2022 (DEEP WELL)
  - 316.69 MEASURED WATER LEVEL - MAY 2022 (BEDROCK WELL)
  - - - INTERPRETED GROUNDWATER CONTOUR (masl)
  - ← INTERPRETED GROUNDWATER FLOW DIRECTION

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**TOWN OF ST. MARYS**

Figure Title  
**ALTERNATIVE METHOD 3A  
 HYDROGEOLOGICAL CONSIDERATIONS  
 GROUNDWATER LEVEL**

Drawn	Checked	Date	Figure No.
	KH	MAY 2022	<b>D-6</b>
Scale		Project No.	
1:1500		300032339	



November 2022

The shallow water levels in the vicinity of the watercourse realignment are presented in Figure D-6. The groundwater levels in all monitoring wells between the CKD pile and the watercourse realignment are higher than the base of the watercourse. It is therefore possible that a hydraulic connection exists between the CKD pile and watercourse realignment. As such groundwater could preferentially migrate through the more permeable soils (i.e., sand and silt meltwater deposits) towards the watercourse realignment.

No CKD impacts to the existing watercourse have been detected to date (2020 Monitoring Report by GM BluePlan Engineering, 2021).

The existing riparian channel within the watercourse is closest to the CKD pile near the site's east property limit, over a length of approximately 110 m. The area between the watercourse top-of-bank and the toe of the CKD pile embankment is less than approximately 20 m and the watercourse's riparian channel is another 10 m, or so, further away. West of testpit 4 (TP4 on Figure D-2), the narrowest overbank distance is approximately 10 m, whereas the riparian channel is approximately 60 m away from the toe of the CKD pile embankment.

The watercourse realignment will have an overbank distance to the CKD pile of no less than 20 m and the riparian channel another 30 m away (~50 m total).

Based on a lateral groundwater velocity of 20 m/year between the CKD Pile and the existing watercourse (assuming a lateral gradient of 0.04 m/m (from MW04-01 to OW37) and a typical hydraulic conductivity of a sand and silt seam of  $5 \times 10^{-6}$  m/s), it is estimated that groundwater borne impacts from the CKD pile could take less than 10 years to reach even the furthest portions of the existing watercourse.

The CKD pile was present sometime prior to 1978 therefore CKD waste has had the potential to impact the environment for more than 30 years. Based on a groundwater velocity of 20 m/year, any potential groundwater impacts derived from the CKD pile should have already reached the existing watercourse.

### **3.2.1.6 Groundwater Quality**

Groundwater quality samples were collected at OW37I-22, OW37D-22 and OW38S-22 and the existing wells drilled into the CKD pile (i.e., MW04-01 and MW04-03). Prior to sample collection MW37S, MW38D and MW04-02 were observed to have insufficient water to facilitate sample collection. Samples were not collected at these locations. The samples were analyzed for parameters consistent with the current monitoring program and 2019 sampling of the CKD pile wells to establish baseline conditions and compare the groundwater chemistry of the existing wells with the new wells. The data is presented below in Table 7 and Table 8. Laboratory Certificates of Analysis are presented in Attachment C.

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OW2-84 is the background well used to assess landfill site impacts on groundwater. The values presented for OW2-84 represent average concentrations<sup>2</sup>. The data presented in the Table 7 and Table 8 demonstrates a difference in water quality between the groundwater downgradient of the CKD pile and background groundwater conditions. The concentrations of various parameters including hardness, conductivity, alkalinity, chloride, sulphate, calcium, sodium, manganese, and magnesium are higher than background at OW38S, OW37I and OW337D downgradient of the CKD pile.

It is inferred that groundwater downgradient of the CKD pile been mildly impacted by CKD waste. Continued monitoring will assess whether groundwater chemistry is stable or changes over time. More groundwater quality data is required at these locations to determine long term trends.

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<sup>2</sup> Burnside has electronic water quality data up to 2018. Including more current data is not expected to significantly change the overall interpretation. The values shown in Tables 6 and 7 are for comparative purposes only.

November 2022

**Table 7: General Groundwater Quality**

Inorganics	PWQO	Location	OW2	MW04-01	MW04-03	OW37D-22	OW37I-22	OW38S-22
		Units	Background	CKD (Centre)	CKD (SW Corner)	Till	Sand & Silt	Sand & Silt / Silt & Clay
pH	6.5-8.5	mg/L	7.89	9.84	7.91	7.59	7.62	7.32
Conductivity		uS/cm	321	37800	5110	1740	1590	1900
Alkalinity		mg/L CaCO <sub>3</sub>	161	5500	648	426	414	643
C-Hardness		mg/L CaCO <sub>3</sub>	141	172.0	410	1030	893	1020
DOC		mg/L	2.2	86.3	20.9	2.7	2.4	9.7
Bromide		mg/L	-	<2.8	<0.28	2.19	1.83	3.09
Chloride		mg/L	3.71	3370	356	167	141	244
Fluoride		mg/L	-	<1.3	<0.13	<0.05	<0.05	<0.05
Nitrate		N mg/L	0.2	<3.6	<0.36	<0.07	<0.05	<0.07
Nitrite		N mg/L	<0.05	<2.7	<0.27	<0.05	<0.05	<0.05
TKN		N mg/L	0.2	31.0	3.2	0.31	0.17	0.53
Phosphate		mg/L	-	67.70	<0.65	<0.13	<0.10	<0.13
Sulphate		mg/L	20.6	11700	1380	476	374	171
Phenols	0.001	mg/L	<0.001	0.08	0.04	0.036	0.041	0.069
TDS		mg/L	-	39000	4250	1380	1150	1210
Bicarbonate (as CaCO <sub>3</sub> )		mg/L CaCO <sub>3</sub>	-	3350	648	426	414	643
Carbonate (as CaCO <sub>3</sub> )		mg/L CaCO <sub>3</sub>	-	2150	<5	<5	<5	<5
Cl:Na Ratio			0.2	2.6	4.9	3.6	5.4	5

Notes: PWQO – Provincial Water Quality Objectives.

PWQOs apply to surface water quality not groundwater quality. The values are shown for general comparison and assessment purposes only. Shaded values exceed the PWQO

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**Table 8: General Groundwater Chemistry**

Inorganics	PWQO	Units	OW2	MW04-01	MW04-03	OW37D-22	OW37I-22	OW38S-22
			Background	CKD Centre	CKD SW Corner	Till	Sand & Silt	Sand & Silt / Silt & Clay
<b>Metals</b>								
Aluminum	0.075	mg/L	-	1.15	0.028	0.052	0.044	0.075
Antimony	0.020	mg/L	-	<0.002	<0.001	<0.001	<0.001	<0.001
Arsenic	0.1	mg/L	-	0.0220	0.0010	0.003	0.004	<0.001
Barium		mg/L	-	0.0400	0.0470	0.109	0.05	0.067
Beryllium	1.1	mg/L	-	<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
Bismuth		mg/L	-	<0.004	<0.002	<0.002	<0.002	<0.002
Boron	0.2	mg/L		0.05	0.02	0.061	0.052	0.036
Cadmium	0.0002	mg/L		0.00370	0.00010	<0.0001	<0.0001	<0.0001
Calcium		mg/L		69.00	148	221	208	255
Chromium	0.00089	mg/L		0.0270	<0.002	<0.002	<0.002	<0.002
Cobalt	0.0009	mg/L		0.00250	0.0006	0.0007	0.0013	0.0023
Copper	0.005	mg/L		0.009	<0.001	0.001	<0.001	0.001
Iron	0.3	mg/L		1.860	7.9	0.142	0.783	0.045
Lead	0.025	mg/L		0.312	<0.0005	<0.0005	<0.0005	<0.0005
Magnesium		mg/L		<5	9.9	116	90.8	94
Manganese		mg/L		0.209	0.475	0.109	0.172	0.667
Mercury	0.0002	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	0.04	mg/L		0.550	0.365	0.006	0.003	<0.002
Nickel	0.025	mg/L		0.054	0.005	0.002	0.002	0.006
Phosphorus		mg/L		0.48	<0.02	<0.02	<0.02	<0.02
Potassium		mg/L		11400	1160	7.85	5.19	5.83
Selenium	0.1	mg/L		0.037	0.007	<0.001	0.003	0.006
Silicon		mg/L		23	3.79	10.6	10.1	7.88
Silver	0.0001	mg/L		<0.0002	0.0002	<0.0001	<0.0001	0.0002

November 2022

Inorganics	PWQO	Units	OW2	MW04-01	MW04-03	OW37D-22	OW37I-22	OW38S-22
			Background	CKD Centre	CKD SW Corner	Till	Sand & Silt	Sand & Silt / Silt & Clay
Sodium		mg/L		1280	73	46.5	26.3	48.4
Strontium		mg/L		0.1280	0.399	1.79	0.735	0.925
Thallium		mg/L		0.0018	<0.0003	<0.0003	<0.0003	<0.0003
Tin		mg/L		<0.004	<0.002	<0.002	<0.002	<0.002
Titanium		mg/L		0.05700	0.007	0.013	0.007	<0.002
Uranium	0.005	mg/L		0.01490	0.00080	0.0034	0.0028	0.0037
Vanadium	0.006	mg/L		0.018	0.002	<0.002	<0.002	<0.002
Zinc	0.03	mg/L		0.048	<0.005	<0.005	<0.005	<0.005
<b>PAHs</b>								
Phenanthrene	0.03	µg/L		0.11	<0.10	0.11	0.11	<0.10
Chrysene	0.0001	µg/L		0.11	<u>&lt;0.10</u>	<u>&lt;0.10</u>	<u>&lt;0.10</u>	<u>&lt;0.10</u>
Benzo(b)fluoranthene		µg/L		0.11	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene	0.0002	µg/L		0.11	<u>&lt;0.10</u>	<u>&lt;0.10</u>	<u>&lt;0.10</u>	<u>&lt;0.10</u>

Notes: Other PAHs and PCBs were not detected in the groundwater quality sample collected. Refer to Attachment C for details. PWQO – Provincial Water Quality Objectives. PWQOs apply to surface water quality not groundwater quality. The values are shown for general comparison and assessment purposes only. Laboratory detection limits that exceed PWQO are underlined. Shaded values exceed the PWQO; B/G = background wells used for landfill site monitoring

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**3.2.1.7 Bedrock Surface**

Auger refusal was noted during drilling at OW37, OW38 and OW40 which is inferred to represent the bedrock surface. Bedrock was encountered at the elevations summarized in Table 9 below.

**Table 9: Inferred Bedrock Surface Elevation**

<b>Location</b>	<b>Auger Refusal</b>
OW37-22	309.15
OW38-22	307.60
BH39-22	No refusal @ 312.14
BH40-22	310.23

The bedrock surface was contoured as part of a previous hydrogeological study as shown in Figure D-7. The subsurface information collected at OW37, OW38, BH39 and BH40 has been included for consideration as part of Watercourse Relocation design.

**3.2.1.8 Groundwater Impacts**

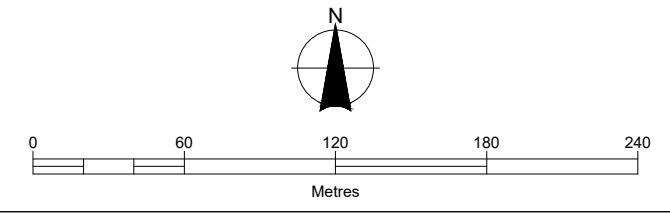
Building on the 2020 Hydrogeological Study (Volume III, Appendix C), the additional baseline data was evaluated. Based on the evaluation, it is unlikely that CKD pile impacts will be detected in the watercourse realignment despite a portion being relocated closer to the CKD pile, if current groundwater conditions persist. The data collected as part of this evaluation supports this interpretation, which is also consistent with the 2020 Burnside study, based on the following evidence:

- The sand and silt seam that was encountered at MW37, MW38 and BH40 was not detected at BH39 demonstrating that the unit thins near the watercourse as interpreted in 2020. As such, only a portion of the watercourse realignment is likely to encounter the sand and silt seam during excavation.
- The sand and silt seam ( $K = 5 \times 10^{-6}$  m/s) is orders of magnitude more permeable than the till ( $K$  ranges from  $1 \times 10^{-10}$  m/s up to  $5.4 \times 10^{-7}$  m/s) as detailed in Table 4. Groundwater from the CKD pile would preferentially migrate through the sand and silt seam toward the existing watercourse and watercourse realignment. Groundwater would migrate much more slowly through the lower permeable till.
- On the landfill side of the watercourse the meltwater deposits are typically dry based on conditions at OW3-84/OW4-84. It is interpreted that the leachate collection system is locally under draining the meltwater deposits. On the CKD pile side of the watercourse, the meltwater deposits are saturated with water levels at OW37 and OW38 above the bottom of the existing watercourse and watercourse realignment.
- If CKD related impacts on the existing watercourse were to occur then, they theoretically should have occurred already based on the age of the CKD pile, and the estimated groundwater flow rates between the CKD pile and the watercourse.



- LEGEND**
- PROPERTY BOUNDARY
  - LIMIT OF REFUSE DISPOSAL
  - WATERCOURSE
  - LEACHATE COLLECTION SYSTEM
  - STORM WATER MANAGEMENT BASIN
  - ⊕ LANDFILL OBSERVATION WELL
  - ⊕ EA MONITORING WELL
  - ⊕ PRIVATE DOMESTIC WELL (APPROXIMATE LOCATION)
  - ▲ SURFACE WATER MONITORING LOCATION
  - DRIVE POINT PIEZOMETER
  - RIGHT OF WAY AND SEWER EASEMENT
  - ALTERNATIVE 3A FOOTPRINT
  - INTERPRETED GROUNDWATER CONTOUR - masl (Based on April 2017 water levels in overburden wells)
  - ← INTERPRETED GROUNDWATER FLOW DIRECTION
  - EXISTING MONITORING WELLS TO BE DECOMMISSIONED
  - WELLS INSTALLED IN 2022 IN AREAS 2 AND 4 (NO ADDITIONAL WELL NEEDED AT THIS TIME)
  - PROPOSED AREA FOR FUTURE MONITORING WELLS (IF REQUIRED)
  - PROPOSED AREA FOR FUTURE WELL NESTS
  - PROPOSED AREA FOR FUTURE SHALLOW WATER TABLE WELLS

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Client / Report  
**TOWN OF ST. MARYS**  
 ENVIRONMENTAL ASSESSMENT  
 HYDROGEOLOGICAL STUDY

Figure Title  
**PROPOSED AREAS FOR NEW OVERBURDEN MONITORING WELLS**

Drawn SK	Checked KH	Date JULY 2022	Figure No.
Scale 1:3,000	Project No. 300032339.0000		<b>D-7</b>

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- CKD impacts to soil in the vicinity of the watercourse were not detected based on field observations and soil sampling data collected at the four borehole locations (i.e., soil samples had a near neutral pH and there was no physical evidence of CKD waste at BH39 or BH40).
- CKD impacts on the watercourse chemistry have not been detected to date indicating that the sand and silt seam does not currently represent a direct pathway between the CKD pile and the existing watercourse. It is also reasonable to assume, based on the information collected to date, that a direct hydraulic connection might not be present between the CKD waste and the watercourse realignment. Continued groundwater monitoring at OW37, OW38, MW04-01 and MOW04-03 in conjunction with routine landfill sampling will facilitate prediction of the potential for CKD impacted groundwater to reach the watercourse in the future.
- Groundwater quality at MW37I, MW37D, and MW38S suggest mild CKD impacts between the CKD pile and the watercourse realignment, however, there isn't a clear relationship between sample depth, soil unit screened, or proximity to the CKD waste.

#### **3.2.1.9 Reasonable Use Guideline (RUG)**

Calculations were completed to evaluate compliance with the Ministry's Reasonable Use Guideline (RUG) for an expanded site under Alternative 3. The calculations are expected to remain valid for Alternative 3A.

The primary direction of landfill leachate migration and groundwater movement is expected to be downward, through the till, to the bedrock aquifer. The existing landfill footprint has an established leachate collection system. This same leachate collection system design is expected for the expansion footprint. As with the existing system, it should capture most of the leachate generated at the site. However, to illustrate the worst-case scenario, the maximum leachate volume that could be transmitted through the till to the bedrock has been calculated based on site permeability and vertical gradients.

Chloride was the contaminant considered since it is a conservative parameter. It migrates at the rate of groundwater flow, is not altered by biological degradation or oxidation/reduction and is not adsorbed by the soil. The background and leachate chloride concentrations for the site were determined from historical monitoring data.

Based on historical monitoring data, the bedrock chloride RUG is approximately 130 mg/L. The bedrock chloride concentration calculated for Alternative 3 (and similar for 3A) is 31 mg/L; significantly below the RUG. Our calculations assume leachate dilution does not occur within the overburden, only within the bedrock aquifer. Furthermore, this is the concentration below the landfill footprint. Some additional dilution will occur between the landfill footprint and the site boundary. Therefore, the actual chloride concentration in the bedrock aquifer is expected to be less, meaning the proposed landfill expansion is expected to meet the RUG. The detailed calculations were included in Appendix J of the Hydrogeology Study.



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### **3.2.1.10 Impacts from Surface Drainage**

If surface drainage from the CKD pile were to contact CKD waste, it could theoretically carry contaminants toward the realigned watercourse. Based on the soil conditions encountered at MW37, MW38, BH39 and BH40, it is unlikely that CKD waste will be disturbed by construction of the realignment. It is also unlikely that surface water would contact the CKD waste as it is currently covered and vegetated. Though an MECP concern, monitoring of the existing watercourse indicates the CKD pile, and the landfill are not currently impacting surface water quality. This monitoring shows that surface water is not a significant pathway for the transportation of CKD impacts to the watercourse realignment.

A surface water interception swale and sampling pond could be added to the Alternative 3A design as a contingency to address the MECP's concern that CKD-impacted surface water runoff may be discharging contaminants into the watercourse.

### **3.2.1.11 Investigation Findings:**

The data collected as part of the April 2022 site investigations between the CKD Pile and the watercourse realignment suggests the following:

- A sand and silt seam (i.e., meltwater deposit) is present beneath portions of the watercourse realignment.
- A sand and silt seam (i.e., meltwater deposit) is present between the CKD pile and the watercourse realignment.
- Localized groundwater levels are above the bottom of the proposed watercourse realignment thus making it possible for groundwater beneath the CKD pile to enter the watercourse.
- CKD waste has impacted downgradient groundwater quality at OW37 and OW38 although the concentrations are significantly less downgradient of the CKD pile demonstrating that subsurface movement of impacted groundwater is limited and or localized.

The sentry wells will serve to predict the potential for CKD pile groundwater impacts to affect surface water quality in the future before they occur.

According to Section 4.1.2 of MECP's *"Guide on Aspects of Hydrogeological Assessment for New and Expanding Landfilling Sites (DRAFT V.9), March 2022"*, "A [Landfill] site can be considered suitable if:

- I. Possible impacts can be naturally attenuated or controlled with the support of engineering designs, to prevent off-site impacts;
- II. Groundwater movement and flow patterns are predictable to support the implementation of an effective monitoring program to facilitate early detection of potential impacts to the groundwater and or surface water; and

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- III. Implementing viable contingency measures are feasible in the event of unforeseen failure.

The hydrogeological investigations completed at the St. Mary's Landfill Site demonstrate that the Site is considered suitable per the draft guideline based on the following:

- I. Possible impacts to groundwater can be attenuated or controlled with the existing and future expansion of the leachate collection system.
- II. Groundwater flow and groundwater-surface water interaction along the watercourse realignment is understood. Monitoring wells are in place along the perimeter of the landfill to predict future off-site impacts. Monitoring wells are also in place between the watercourse realignment and both the existing landfill footprint and the CKD pile to predict future impacts on the watercourse realignment.
- III. General contingency measures are presented herein for consideration and implementation in the event of unforeseen failure of the proposed landfill design.

### **3.2.2 Supplemental Information for Section 7.5 Evaluation of Alternatives**

Review of the historical hydrogeological data (Vol. III, App. C) combined with the 2022 baseline data (Section 3.2.1) provides a clear understanding of the potential effects and pathways for groundwater contamination for all Alternatives. With this, the groundwater quality indicators were revised and combined to better articulate the risks to groundwater associated with the alternatives and, specifically, the risks associated with the proximity of the CKD pile. The updated indicators synthesize the information and data measured by the previous indicators. Thus, the updated indicators are better measures of the potential risks and impacts from each alternative while maintaining the intent of the original indicators.

#### ***Indicator 1: Risk of increasing leachate generation and strength:***

Alternatives 3 and 3A, with moderately sized waste footprints (116,000 m<sup>2</sup> and 117,000 m<sup>2</sup> respectively), are likely to generate the same quantity of leachate. Alternatives 2 and 5 have larger waste footprints and are therefore expected to generate more leachate.

For Alternatives 3, 3A and 5 new waste is to be placed above the existing Phase I and Phase II/III footprints, potentially increasing leachate strength compared to existing conditions. The waste loading (i.e., m<sup>3</sup> of capacity per hectare of waste footprint) is shown for the alternatives in Table 10.

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**Table 10: Waste Loading of Alternatives**

	<b>Do Nothing</b>	<b>Alt 2</b>	<b>Alt 3</b>	<b>Alt 3A</b>	<b>Alt 5</b>
Approved Capacity (m <sup>3</sup> )	453,050				
Expansion Capacity (m <sup>3</sup> )	0	634,950			
Total Capacity (m <sup>3</sup> )	453,050	1,088,000			
Area (ha)	8.0	15.0	11.6	11.7	14.1
Waste Loading (m <sup>3</sup> /ha)	56,631	72,533	93,793	92,991	77,163

Per Table 10, Alternatives 3 and 3A have the highest waste loading, though with less than 1% difference between them they are essentially equal. Alternative 2 has the lowest waste loading while Alternative 5 is the second lowest for the expansion options. However, as all alternatives have a waste loading of less than 98,500 m<sup>3</sup>/ha, the lowest value in Table 2 of O.Reg. 232/98, used for the single liner design option at a background chloride concentration of zero milligrams per litre (0 mg/L), none of the alternatives are expected to result in significant leachate strength concerns.

***Indicator 2: Risk of impacting groundwater quality:***

Alternatives 2 and 3 will relocate the watercourse to the north side of the CKD Pile. The relocation increases the risk of CKD leachate impacts on the watercourse. Alternative 3A instead realigns a small (~230 m) section of the watercourse to provide additional waste footprint and achieve the Planning Period disposal capacity. This small realignment will not be as close to the CKD Pile as the relocation required for Alternatives 2 and 3. Alternative 3A is therefore less likely to create a conduit for CKD leachate to enter a meltwater deposit and move through the groundwater.

Further, the 2022 baseline data (Section 3.2.1) and historic data (Vol. III, App. C) indicates that CKD Pile impacts on the watercourse relocation envisioned for Alternative 3A can be monitored. Potential mitigation measures are available to address future effects (see Section 3.2.4.2).

***Indicator 3: Risk of altering groundwater flow:***

Alternatives 2 and 3 will require relocation of the watercourse. Shallow groundwater currently flowing toward the existing watercourse will be disrupted by this change, though the effects on shallow groundwater are not known.

Alternative 3A will have a short section of the watercourse realigned and the topography around the watercourse will change slightly. Based on the historic and 2022 baseline data, we anticipate changes to shallow groundwater flow will be imperceptible.

There is no change to the watercourse or the topography surrounding the watercourse under Alternative 5. As a result, no changes to shallow groundwater flow are expected.

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### ***Additional Mitigation***

No changes to mitigation were required for Alternatives 2, 3 or 5 because of the 2022 baseline data evaluation completed for Alternative 3A.

Although not currently required, mitigation measures for Alternative 3A may be needed as part of the watercourse realignment design and construction, or they may be added later based on updated monitoring. Potential measures include:

- Add to or improve the cover materials and vegetation above the CKD Pile.
- Excavation/removal of the buried CKD material or sand and silt seam pathway, backfilling with a clayey material (likely available on-Site).
- Over excavating some or the entire realignment and installing a liner – either recompacted clay or a geosynthetic.
- Installing a French drain between the CKD Pile and the watercourse realignment, directing the CKD impacted groundwater to the Site's leachate collection system, a holding tank, or a containment pond (lined, dedicated for this purpose).

### ***Net Effects***

The post-mitigation risks to groundwater associated with Alternatives 2, 3 and 5 remain as described in the Hydrogeology Assessment (Vol. III, App. C). The risk associated with Alternative 3A is relatively minor and can be reduced significantly with appropriate design elements, such as:

- Add to or improve the cover materials and vegetation above the CKD Pile.
- Excavation/removal of the buried CKD material or sand/silt seam pathway, backfilling with a clayey material (likely available on-Site).
- Over excavating some or the entire realignment and installing a liner – either recompacted clay or a geosynthetic.
- Installing a French drain between the CKD Pile and the watercourse realignment, directing the CKD impacted groundwater to the Site's leachate collection system.

As above, these are design elements may also be used as mitigation (post-construction contingency) measures.

### **3.2.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

The 2022 baseline data evaluation completed for Alternative 3A determined one additional mitigation measure. This mitigation measure is provided as a contingency. Should CKD effects be observed in the realigned watercourse through the updated Annual Monitoring Program, measures to separate the watercourse from the CKD will be required as outlined in the 'Additional Mitigation' section above.

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**3.2.4 Proposed Monitoring Program**

The current monitoring program was developed by CRA in 1992 and was revised in April 2009. Under the 2009 program, groundwater and surface water are monitored twice annually in the spring and fall. The 2009 program included a list of monitoring wells, residential water supply wells, leachate wells, and surface water stations and their respective monitoring requirements.

The updated Monitoring Program is based on the existing program and incorporates changes to address GRT comments on the August 2021 EA and recent discussions with respect to Alternative 3A. The updated monitoring program will be implemented upon Environmental Protection Act approval of the landfill expansion and the commencement of fill operations. The program also considers the following MECP documents that have come into effect since 1992, when the original monitoring program was developed:

- *Landfilling Sites, Ontario Regulation 232/98;*
- *Landfill Standards: A Guidelines on the Regulatory and Approval Requirements for New or Expanding Landfill Sites, January 2021, Schedule 5: Groundwater, Leachate and Surface Water Monitoring Parameters;*
- *Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface water, Technical Guidance Document, MOE, November 2010; and*
- *Guide on Aspects of Hydrogeological Assessment for New and Expanding Landfilling Sites, DRAFT (V.9), March 2022.*

We have also considered the six areas within the site where additional monitoring wells were recommended in the Hydrogeology Report (Vol. III, Appendix C). These are shown on Figure D-7.

- Shallow water table monitoring wells are recommended in Areas 1,2, and 3;
- Nested water table and bedrock wells are recommended in Areas 4 and 5; and,
- A provision to install replacement wells in Area 6 following construction (i.e., if OW9A-91, OW9B-91, OW15-91, and OW21-91 need to be replaced).

Each nest will include at a minimum one shallow water table well and a bedrock well. In addition, high permeability water bearing seams (meltwater deposits) encountered should also be screened with a monitoring well.

The wells installed during 2022 partly fulfill the needs for new wells as outlined in Table 11.

**Table 11: Proposed Monitoring Well Locations**

<b>Area</b>	<b>Proposed</b>	<b>Current Status (Wells Installed in 2022/Future Replacements)</b>
1	Water Table	Future replacement
2	Water Table	MW37S-22 MW37D-22(@ overburden bedrock contact)

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<b>Area</b>	<b>Proposed</b>	<b>Current Status (Wells Installed in 2022/Future Replacements)</b>
3	Water Table	Future replacement
4	Water Table Bedrock	MW38S-22 MW38I-22 MW38D-22 (@ overburden bedrock contact)
5	Water Table Bedrock	Future replacement Future replacement
6 Provisional	Water Table Bedrock	Future replacement Future replacement

Eventually nine wells need to be decommissioned as they are within the expansion footprint. These include: OW3-84, OW4-84, OW5-84, OW6-84, OW7-91, OW8A-91, OW8B-91, MW04-04, and OW36.

Table 12 provides a list of sampling efforts required at each monitoring location recommended in this proposed monitoring program.

**Table 12: Ground & Surface Water Monitoring Program Summary**

<b>Groundwater Monitoring Wells</b>		
<b>Station</b>	<b>Water Level</b>	<b>Water Quality</b>
OW2-84 (Background O/B)	WL	GWQ
OW8A-91	WL	GWQ
OW8B-10	WL	GWQ
OW9A-91 <sup>3</sup>	WL	GWQ
OW9B-91 <sup>3</sup>	WL	GWQ
OW15-91 <sup>3</sup>	WL	GWQ
OW21-91 <sup>3</sup>	WL	GWQ
OW25-91 (Background O/B)	WL	GWQ
OW32-96	WL	GWQ
OW33-96 (P/L) <sup>4</sup>	WL	GWQ
OW34-96 (P/L) <sup>4</sup>	WL	GWQ
OW32A-02 (P/L) <sup>4</sup>	WL	GWQ
OW37S-22 <sup>1</sup>	WL	GWQ
OW37I-22 <sup>1</sup>	WL	GWQ
OW37D-22 <sup>1</sup>	WL	GWQ
OW38S-22 <sup>1</sup>	WL	GWQ
OW38D-22 <sup>1</sup>	WL	GWQ
MHB	WL	GWQ
<b>Surface Water Stations</b>		
<b>Station</b>	<b>Flow (F), Water level (WL)</b>	<b>Water Quality</b>
SP1-10 (upstream)	WLF	SWQ

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<b>Groundwater Monitoring Wells</b>		
SP2-93 (midstream) <sup>3</sup>	WLF	SWQ
SP3-93 (downstream)	WLF, FLOW	SWQ
<b>West SWM Basin<sup>2,5</sup></b>		
Inlet	WLF	SWQ
Outlet	WLF	SWQ
<b>East SWM Basin<sup>2,5</sup></b>		
Inlet	WL	SWQ
Outlet	WL	SWQ
<b>Leachate Manholes<sup>6</sup></b>		
MH1 (Phase I)	WL	LQ
MH3 (Phase II/III)	WL	LQ

Notes:

1. OW3-84, OW4-84, OW5-84, OW6-84, OW7-91, and OW36 will be decommissioned and replaced by OW37S, OW37I-22, OW37D-22, OW38S-22, and OW38D-22. OW37S-22 and OW38D may have insufficient water to collect a sample)
2. Record observations of sedimentation build up in Basin
3. SP2-93, OB9A-91, OW9B-91, OW15-91 and OW21-91 might have to be decommissioned to facilitate site construction. (Replacement wells proposed in Area 6 (Figure D-7).
4. Located along property limit (P/L) for Reasonable Use Assessment
5. SWM Basins A&B will continue to be monitored until they are replaced by West and East SWM Basins.
6. Monitoring of noted leachate manholes will be discontinued and replaced with new monitoring locations when the landfill expansion's leachate collection system is constructed and operating

O/B – Overburden; WL= Water level; WLF= water level and or flow conditions; GWQ = Groundwater Quality – Schedule 5; SWQ = Surface Water Quality; LQ = Leachate Quality; Flow = Flow Measurement

It is recommended that at least two duplicate water quality samples be collected for blind laboratory analysis (Approximately 1 duplicate should be collected for every 10 samples submitted to the Laboratory for analysis).

General site conditions should be documented during each site visit including, but not limited to, condition of landfill cover, erosion, leachate seeps, blown litter, odours, conditions of each monitoring location, and wells needing repair.

**Table 13: Water Quality Parameters**

<b>Sample Type</b>	<b>Schedule 5 Parameters</b>	<b>Special considerations</b>
Groundwater Monitoring Wells (GWQ)	Column 2: Indicator List for Groundwater plus: total phosphorus, hardness, manganese, potassium, bicarbonate and carbonate	Schedule 5: Column 1: Comprehensive list for Groundwater plus hardness, bicarbonate and carbonate at OW37S, OW37I, OW37D, OW38S, OW38D, MHB, OW2-84 and OW25-91
Surface Water Stations (SWQ)	Column 4: Indicator List for Surface Water plus: boron, hardness, magnesium, manganese, sodium, calcium,	

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<b>Sample Type</b>	<b>Schedule 5 Parameters</b>	<b>Special considerations</b>
	potassium, bicarbonate and carbonate	
Leachate wells	Column 2: Indicator List for Leachate, plus: total phosphorus, hardness, manganese, potassium, bicarbonate and carbonate	

Notes:

- A copy of MECP (January 2012) Landfill Standards, Schedule 5 groundwater and surface water quality parameters is provided in Attachment E with additions noted above based on the following:
- Potassium was added as an indicator for CKD pile contaminants.
- Total Phosphorus, hardness, boron, and manganese are current landfill indicators (2021 Monitoring Report, GM BluePlan, 2022).
- Magnesium, sodium, calcium, bicarbonate and carbonate were added to facilitate analysis using trilinear plots (Piper plots).

### **3.2.4.1 Adaptive Management Triggers**

Adaptive Management or Contingency plans are emplaced to address potential impacts that may occur but are unlikely to happen. This section provides triggers and procedures, to be incorporated into the post EA Design and Operations Plan, for use during emergencies as well as planned responses if site design and environmental control measures do not function as anticipated.

It is recommended that non-emergency measures be implemented only after a review of background information and site performance indicators to provide the best solution to potential impacts that may arise. The engineering contingency measures described below in Section 4.2.2 are generic and address a wide variety of issues. A situation specific issue may be more suitably addressed by a specific response measure. Therefore, all measures, beyond those of a routine maintenance nature, are to be reviewed by the MECP before implementation to ensure maintaining compliance with the ECA. The following sections outline the measures that should be taken if one or more of these situations occur at the site.

Contingency triggers are developed to determine when action is required. The contingency triggers for the site are based on both concentration trigger values for chloride and evaluating concentration trends for site specific indicator parameters while taking into consideration Provincial Water Quality Objectives (PWQO) and Ontario Drinking Water Quality Standards (ODWQS). The indicator parameters for the site are presented in Table 14 and recommended for monitoring to determine if changes in water quality (i.e., trends or trigger exceedances) demonstrate a deterioration in water quality or predict a future landfill or CKD pile effect on groundwater or surface water quality. The trends and triggers for these indicator parameters will be evaluated as part of the updated annual monitoring required by both the EA and the ECA. The monitoring and contingency program might need minor adjustments once detailed



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design is completed; however, the overall intent and evaluation process is not expected to change.

**Table 14: Points of Compliance and Indicator Parameters**

Location	Chloride Trigger	Trend Analysis	Notes
<b>Assessment for Landfill Impacts</b>			
Reasonable Use Boundary/Compliance wells OW32-96, OW32A-02, OW33-96, OW34-96, and OW35	Chloride (100 mg/L)	Alkalinity Conductivity DOC Sulphate, hardness, TKN, manganese and boron	Sodium : chloride, sodium : calcium, and chloride : sulphate ratios will be reviewed in the future to determine if they can demonstrate landfill related impacts. Time versus concentration trends to be assessed for all indicator parameters while taking PWQOs and ODWQS and Reasonable Use target concentrations into consideration.
Sentry Wells: OW9A-091, OW9B-91, OW15-91		Chloride, Alkalinity, conductivity, DOC, sulphate, hardness, TKN, manganese and boron	
Background Wells: OW2-84, OW25-91		Chloride, Alkalinity, conductivity, DOC, sulphate, hardness, TKN, manganese and boron	
Surface water: SP3-93 (downstream)		Potassium, sulphate, alkalinity, conductivity, DOC, hardness, manganese, TKN and boron	Time versus concentration trends to be assessed for all indicator parameters while taking into consideration PWQO concentrations and trends comparing upstream (SP1-10) versus downstream (SP3-93) conditions.

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Location	Chloride Trigger	Trend Analysis	Notes
<b>Sentry Wells for Potential CKD Impacts on Watercourse</b>			
OW37S-22 OW37I-22 OW37D-22 OW38S-22 OW38D-22		Potassium Alkalinity Conductivity DOC Sulphate (Establish base line for all indicators (minimum 4 results), assess for increasing trend for 4 consecutive results - evaluate potential for future impact on surface water quality.)	Sodium:chloride, sodium: calcium, and chloride : sulphate ratio will be reviewed in the future to determine if they can demonstrate CKD related impacts.

Notes: OW9A-091, OW9B-91, OW15-91 might need to be decommissioned and replaced to facilitate construction.

**Chloride Trigger:**

**Groundwater:** The D&O (CRA 1992) identified a trigger of 100 mg/L for chloride at the property limit. Chloride is a good indicator of landfill related impacts but can be influenced by road salting and in this case, the CKD pile. As such, other indicators including conductivity, alkalinity sulphate, DOC, potassium, and a few metals will also be used to assess long term trends even if background concentrations are near the Reasonable Use Guideline (RUG) value (e.g., DOC) or no RUG value exists (e.g., alkalinity).

**Surface Water:** Surface water impacts have not been detected (GM BluePlan, 2022) and there are currently no site-specific surface water triggers. A PWQO value does not exist for chloride however the Canadian Water Quality Guidelines (CWQG) present a surface water criterion of 128 mg/L for chloride. The historical range for chloride is between 13 mg/L and 887 mg/L at the upstream station SP1-10 (i.e., elevated chloride is attributed to off site upstream contributions) therefore a concentration above 128 mg/L does not necessarily reflect a site related impact on the watercourse. Downstream surface water (SP3-93) quality will be compared to upstream surface water ((SP1-10) quality to assess on site contribution of chloride to the watercourse.

**CKD Pile Sentry Wells:** It is expected that ground water quality at the sentry wells would have to deteriorate significantly before a CKD related effect could be detected in surface water. A chloride trigger is not recommended for the sentry wells positioned between the CKD pile and the watercourse based on the following rationale:

- The sentry wells are not a point of compliance yet provide early warning for potential future impacts on the watercourse which will be evaluated based on water quality trends in the

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sentry wells in conjunction with a comparison of upstream (SP1-10) and downstream (SP3-93) surface water quality in the watercourse as noted above.

- The Ontario Drinking Water Quality Aesthetic Objective (ODWQ – AO) for chloride is 250 mg/L,
- The chloride concentrations at OW37I-22, OW37D-22 and OW38-S are already almost 250 mg/L (244 mg/L at OW38S-22, see Table 7) yet the watercourse is not currently impacted by the CKD Pile (or the landfill), and,
- Groundwater flow contributions from the CKD pile to the watercourse are minimal.

### **Trend Analysis**

If the chloride trigger is activated at a point of compliance, the required action will depend on the nature of the result and concentration trend analysis for the other indicators. If an exceedance of a trigger concentration or an increasing concentration trend emerges during annual monitoring, the next two routine monitoring results obtained at that location will be reviewed to confirm the validity of the suspect concentration or trend. If the exceedance or trend is confirmed by the next two routine monitoring results to reflect a potential impact, action will be required.

Assessing water quality impacts on the watercourse will rely on indicator parameter data trends at the sentry wells and a comparison of surface water quality in the watercourse between upstream (SP1-10) and downstream (SP3-93) stations. Once baseline conditions are established (minimum of 4 samples), the following will be considered:

- If an unacceptable increasing trend for an indicator parameter is identified in a sentry well:
  - Other parameter trends will be assessed both in the sentry wells and watercourse monitoring locations to confirm or refute the trend, and
  - Water quality between upstream and downstream surface water stations will be compared to determine whether indicator concentrations and trends are similar or different between stations to assess contaminant loading on the watercourse.
- If an unacceptable increasing trend is identified in the watercourse:
  - Concentration trends will be assessed both in the sentry wells and watercourse monitoring locations to confirm or refute the trend, and,
  - Water quality between upstream (SP1-10) and downstream (SP3-93) surface water stations will be compared to determine whether indicator concentrations and trends are similar or different between stations to assess contaminant loading on the watercourse.

The trends and triggers for indicator parameters outlined above will be evaluated to recommend if contingency measures are needed. The recommendation(s) will be included as an “Opinion Section” in both the annual monitoring report and associated cover letter, for submission to the MECP. If more immediate action is required, the Town will submit an interim letter report.

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The goal is to submit a remedial action plan with mitigation measures to the MECP for review and comment within one month of identifying an increasing trend as outlined above. It will be carried out upon approval from the MECP and could include the following, depending on the situation:

**Adaptive Management Measures - Groundwater:**

- Install and test boundary well(s) downgradient of the affected sentry well(s).
- Review current site operations to determine if there is any probable cause for the increase and if any operational changes could reduce the impact through reduction of leachate production.
- Review data to determine the probability of off-site contamination and assess the need to develop a contaminant attenuation zone.
- Review the updated annual monitoring program and recommend changes. Any new boundary wells would become part of the updated annual monitoring program and triggers would be set for these wells. If the trigger levels are exceeded or unacceptable increasing trends are identified at the new boundary wells, and there is potential for off-site impacts, additional actions will be required. The exact nature of those actions would depend on impacts identified and where they are occurring and could include items outlined in the following sections.

**Adaptive Management Measures - Surface Water:**

- Review current site operations to determine if there is any probable cause for the increase and if any operational changes could reduce the impact through surface water controls such as ditches, swales, berms, grading, seeding, cover enhancement.
- Review the updated annual monitoring program and recommend changes. New surface water quality monitoring points would become part of the updated annual monitoring program and triggers would be set for these locations. If the trigger levels are exceeded at the new locations, and there is potential for off-site impacts, additional actions will be required. The exact nature of those actions would depend on impacts identified and where they are occurring and could include items outlined in the following sections.

**3.2.4.2 Adaptive Management Responses**

When the triggers are exceeded, an Adaptive Management response may be required. The following sections outline and discuss a variety of potential strategies to provide guidance in the event that effects are detected.

**Potential Effect Identified: Landfill Leachate Migration in Groundwater (Overburden)**

The leachate collection system installed beneath Phase II/III collects leachate beneath the waste reducing the potential for contaminants to migrate into the overburden, more specifically the meltwater deposits.

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A deeper collection pipe was also installed in the meltwater deposits beneath the leachate collection system between MHA and MHB (maintenance hole A and B). The deeper pipe has no outlet. It was installed as a contingency to collect leachate entering the meltwater deposits. Water in the deeper pipe can be pumped out from MHB when leachate contaminants are detected (i.e., not meeting Provincial Water Quality Objectives). Otherwise, overflow from MHB is allowed to discharge to the surface water system that flows to Basin B. Water quality samples are collected at MHB to assess changes and potential impacts beneath the Phase II/III leachate collection system the waste. This provides a level of protection that contaminants won't exceed the trigger levels at the property boundary.

Other options include:

- Establish an offsite Contaminant Attenuation Zone (CAZ), such as the road allowance or other lands located to the west of the site.
- Install poplars or other hardy trees on completed portions of the site, which tend to stabilize the surface, increase evapotranspiration and uptake leachate impacted groundwater which reduces the leachate generated from the site; and/or,
- Install a cut-off trench, with leachate interception and recirculation back into the landfill. If monitoring beyond the control feature indicates leachate migration, then purge wells would be installed along the landfill side of the cut off feature to dewater the meltwater deposits. The quality of purge water would determine whether the water would be discharged to the leachate collection system or the surface water Basin.

**Potential Effect Identified: Leachate migration in the Bedrock Aquifer**

If monitoring indicates leachate migration into the bedrock, then purge wells could be installed downgradient of the plume. The quality of contamination in the purge water would determine whether the water would be discharged to the leachate collection system or a surface water Basin.

**Potential Effect Identified: Leachate Mounding and Seepage**

Leachate seeps would be corrected by excavating the soil cover and waste in the vicinity of the seep and placing a granular material (e.g., clear washed stone) to create a hydraulic connection between the perched layer and the collection system. Leachate seeps due to the failure of the leachate collection system can be corrected by flushing the lines and removing restrictions in the pipe. If flushing is unsuccessful, purge wells could be installed through to the base of the waste. The leachate could be pumped to a holding tank to alleviate pressure and leachate mounding on the landfill side slopes. Alternatively, the leachate could be transferred and held in a clay-lined, temporary dry surface water storage pond to facilitate eventual management and disposal.

The District Manager of the MECP must be notified within 1 week of a leachate breakout.

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**Potential Effect Identified: Groundwater Impacts from CKD pile**

Groundwater impacts from the CKD pile could be addressed as follows:

- Continued groundwater quality monitoring between the CKD pile and the watercourse realignment will be critical to assessing water quality trends, changes in the subsurface conditions and predicting future CKD impacts on the watercourse.
- The concentration of many parameters in the groundwater within CKD pile have declined since monitoring began in 2004. Continued monitoring of the groundwater quality at MW04-01 and MW04-03 screened within the CKD pile will assess whether source concentrations will continue to decline.
- Groundwater levels and water quality monitoring at OW37, OW38, MW04-01 and MW04-03 should be incorporated into the routine monitoring program. A contingency plan and trigger mechanism must be established to determine when confirmation sampling and remedial action are required.

Although not currently required, mitigation measures may be needed as part of the watercourse realignment design and construction, or they may be added later based on monitoring.

Potential measures include:

- Add to or improve the cover materials and vegetation above the CKD Pile.
- Excavation/removal of the buried CKD material or sand and silt seam pathway, backfilling with a clayey material (likely available on-Site).
- Over excavating some or the entire realignment and installing a liner – either recompacted clay or a geosynthetic.
- Installing a French drain between the CKD Pile and the watercourse realignment, directing the CKD impacted groundwater to the Site's leachate collection system, a holding tank, or a containment pond (lined, dedicated for this purpose).

**Potential Effect Identified: Surface Water Impacts from CKD pile**

The monitoring well network, and site drainage systems are designed to prevent and predict impacts to surface water. Should CKD contaminants be detected in the sample collection pond, then mitigation measures can be implemented. These may include or combine:

- Extend or improve the cover materials and vegetation above the CKD Pile.
- Additional local grading.
- Enhance the swale with vegetation to provide additional treatment.
- Modify the sampling pond to provide additional treatment.
- Adding an outlet control to the sampling pond, allowing surface water to accumulate but not discharge. The water could then be sampled, and if contaminated, disposed (potentially directed to the leachate collection system) rather than released into the watercourse.

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### **Potential Effect Identified: Presence of High Levels of Landfill Gas**

Historically, there has been no landfill gas monitoring at the Site. Further, there was no monitoring completed as part of this field investigation. We assume landfill gas migration will remain an insignificant issue at the Site, particularly given its predominantly clay/silt till nature. However, contingency measures can be put into place should landfill gas issues arise. These include:

- If low combustible gas levels are suspected or complaints regarding odours are received:
  - A landfill monitoring program can be initiated.
  - Consideration will be given to installing a passive gas venting system consisting of perforated gas collection piping in appropriate locations.
- If high levels of combustible gas are suspected, then the need to install an active gas collection system will be considered.

### **3.2.5 Baseline Data Collection & Evaluation**

A preliminary site design was prepared to support the Alternative 3A landfill expansion, providing supplemental information on:

- Limits of Landfill expansion
- Perimeter access roads and ditches
- Stormwater Management Basins
- Realignment of Landfill Tributary
- External channel

Existing topographic mapping was used to measure drainage areas, establish site grades, and identify the locations of the access roads, ditches, and stormwater management basins. These are shown on Figure D-2.

Preliminary hydrotechnical calculations confirmed the sizes of the drainage facilities exceed capacity for both the 1:250-year storm and an enhanced level of water quality control.

The cross-section of the realigned watercourse is based upon that which now exists within this reach of the watercourse.

Although the watercourse seems stable within the landfill site, monitoring for erosion problems should be done annually and particularly after large runoff events. Repairs are to be made should any erosion threaten the integrity of the channel embankments.

Interactions between CKD and the surface water quality in the watercourse are not expected. However, if the updated monitoring program (Section 3.2.4) detects impacts from CKD in the realigned watercourse, measures to mitigate these impacts will be required. Contingency plans are provided with the updated monitoring program.

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### 3.2.5.1 Surface Water Quality

The Annual Operations & Monitoring Report (2021) was reviewed to assess site surface water impacts and impacts from the CKD Pile. This effort was focussed mainly on determining the potential impacts of the CKD Pile on the watercourse. Further, as part of the evaluation described in Section 3.2, the Alternative 3A watercourse realignment was evaluated to determine if there was a potential for groundwater effects that would reach the surface (i.e., the watercourse).

Relative to surface water monitoring for the existing landfill site:

- **CKD Pile:** No CKD effects to the existing surface water quality in watercourse have been detected to date.
- **Basin A:** Fluctuating chloride concentrations are consistent with a closed site. The water quality appears to be influenced by surface sources such as salt and organics rather than landfill leachate. Based on the similarity to water quality within the on-site water course, no impacts to surface water resources are expected due to discharges from Basin A.
- **Basin B:** The water quality at Basin B does not appear to be influenced by landfill leachate. Exceedances of the PWQO are attributed to salting and/or naturally occurring conditions, including off-site influence from agricultural fields.

This additional information is consistent with historical surface water monitoring. There have been no changes since preparation of the Hydrogeological Assessment (Volume III, Appendix C).

Surface water quality sampling was not undertaken as part of the April 2022 field investigations given that ongoing ECA compliance monitoring includes surface water quality sampling along the watercourse. The results are presented in the 2021 Monitoring report by GM BluePlan (March 2022). Relevant information is summarized below and time versus concentration plots for chloride and hardness are attached (Attachment F):

**Table 15: Surface Water Quality Summary**

Parameter	PWQO / (APV)	SP1-10 Upstream		SP2-93 Midstream		SP3-93 Downstream	
		Jun-21	Nov-21	Jun-21	Nov-21	Jun-21	Nov-21
Calcium		15.9	161	29.2	93.6	42.4	95.9
Chloride	(180)	415	10.9	356	48.5	349	49.1
Hardness		108	506	152	300	190	307
Phenols		0.003	<b>0.009</b>	0.002	<b>0.011</b>	<0.001	<b>0.014</b>
Magnesium		16.7	25.3	19.1	16.10	20.5	0.02
TDS		816	328	902	428	908	386
BOD5		<2	19	2	<2	<2	<2
Ammonia		0.12	0.11	0.02	<0.02	0.02	<0.02
Un-Ionized Ammonia	20	0.758	0.001	0.276	<0.001	0.020	<0.001
Iron	0.3	0.265	<b>21.8</b>	<b>0.650</b>	0.157	<b>0.922</b>	0.159
Manganese		0.055	3.11	0.063	0.022	0.171	0.020



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Parameter	PWQO / (APV)	SP1-10 Upstream		SP2-93 Midstream		SP3-93 Downstream	
		Jun-21	Nov-21	Jun-21	Nov-21	Jun-21	Nov-21
Alkalinity		194	294	186	271	211	270
Sodium		154	2.85	146	29.7	145	30.6
Nitrate		<0.07	0.33	<0.07	2.81	<0.07	2.83
Nitrite		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phosphorous	0.03	<b>0.19</b>	<b>1.33</b>	<b>0.12</b>	<b>0.07</b>	<b>0.14</b>	<b>0.07</b>
TSS	-	<10	324	21	<10	11	<10

Notes:

1. All parameters are in mg/L except for conductivity ( $\mu\text{S}/\text{cm}$ ) and unionized ammonia is in  $\mu\text{g}/\text{L}$
2. Data provided via email, David Blake to Kim Hawkes, June 27, 2020, 3:29 PM).
3. Parameters such as sulphate, potassium, and DOC were not tabulated in the GM BluePlan report.
4. PWQO – Provincial Water Quality Objectives, AVP – Aquatic Protection Value (in brackets)

The water quality results in Table 15 and the time versus concentration plots in Attachment F demonstrate similarity between the upstream and downstream stations for the parameters tested. It is not possible to comment further relative to other CKD related indicators, such as potassium, given that results were not documented in the 2021 Monitoring Report or included in the 2021 data.

### 3.2.5.2 Surface Water Quantity

No additional data collection was required to support the assessment of Alternative 3A with respect to surface water quantity.

## 3.3 Surface Water

### 3.3.1 Supplemental Information for Section 7.6 Evaluation of Alternatives

#### 3.3.1.1 Surface Water Quality

***Indicator 1: Risk of contaminated runoff reaching surface water:***

No new risks or effects are anticipated due to Alternative 3A.

***Indicator 2: Risk of leachate from seeps reaching surface water:***

Alternative 3A is expected to present a slightly higher risk of leachate seeps than Alternative 3 due to being about four metres taller.

***Indicator 3: Risk of leachate from CKD pile reaching surface water:***

There is a lower risk of CKD effects reaching the watercourse with Alternative 3A as the watercourse realignment is minor and farther from the CKD pile compared to Alternatives 2 and 3.

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***Indicator 4: Risk of on-site surface water quality impacting Thames River:***

The watercourse realignment for Alternative 3A is minor and farther from the CKD pile compared to Alternatives 2 and 3. This lowers the risk of water quality impacts on the Thames River.

***Net Effects***

Alternative 3A represents a low to moderate risk of effects to surface water and Alternatives 2, 3 and 5 are high risk due to their potential interactions with the CKD pile. All other potential effects can be adequately mitigated.

***Additional Mitigation***

As discussed in Section 3.2.1, there are no indications that the CKD pile is influencing surface water quality or will influence surface water quality following Alternative 3A watercourse realignment. Contingency measures have been proposed (Section 3.2.4.2) should impacts be detected by the updated monitoring program.

**3.3.1.2 Surface Water Quantity**

No changes to surface water quantity are expected due to the expansion of the landfill site under any of the Alternatives. The overall length of the watercourse also remains roughly the same under any of the Alternatives. The differences merely relate to the amount of the watercourse that is realigned, under Alternative 3A, or relocated, under Alternatives 2 and 3. Alternative 5 does not modify the existing watercourse.

**3.3.2 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11 (and above, in Section 3.2.4).

**3.4 Ecology**

**3.4.1 Baseline Data Collection & Evaluation**

No additional data collection was required to support the assessment of Alternative 3A with respect to ecology.

**3.4.2 Supplemental Information for Section 7.7 Evaluation of Alternatives**

The conceptual design footprint of Alternative 3A was reviewed for terrestrial and aquatic ecological impacts. The review found:

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### **3.4.2.1 Terrestrial Ecology**

- No concerns for SAR or wildlife.
- The realignment is proposed within a MEGM3 (dry-fresh graminoid meadow) vegetation community that encompasses the landfill site on the east side of the existing drain. The realignment is located well outside the area identified as terrestrial crayfish habitat (Significant Wildlife Habitat) and is also outside of the grassland areas that were identified as confirmed nesting and foraging habitat for Eastern Meadowlark (Threatened under the ESA). Eastern Meadowlark prefer sites that feature moderately tall grass with abundant litter cover, a high proportion of grass cover, low proportion of shrub and woody vegetation and low percent cover of bare ground. The vegetation structure of the MEGM3 in this location is comprised of a higher percentage of trees and shrubs, poor soil conditions with a high percent of bare ground compared to the area where Eastern Meadowlark was recorded during breeding bird surveys (i.e., capped cement kiln dust stockpile). This area of the landfill is highly disturbed from historic operations. No records of any species of concern or SWH were identified in this location during surveys. Therefore, we do not anticipate impacts to SWH or SAR should the watercourse be realigned in this location.
- Perimeter facilities on southern property limit will require tree cutting. Approvals must be confirmed, including breeding bird avoidance requirements. Habitat restoration/compensation may also be required.

### **3.4.2.2 Aquatic Ecology**

- There are no SAR in the watercourse on the landfill property.
- The watercourse realignment of Alternative 3A is preferred over the relocation for Alternatives 2 and 3 as less watercourse adjustment is required and there is a lower potential for interactions with the CKD Pile.
- As with all of the Alternatives, contaminants or sediments from the watercourse could move downstream and impact the Thames River and the aquatic species inhabiting the river.
- Must review Fisheries Act implications upon detailed design.

### **3.4.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11.

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### **3.5 Impacts to Cultural Heritage Resources**

#### **3.5.1 Built Heritage and Cultural Heritage Landscapes**

##### **3.5.1.1 Baseline Data Collection & Evaluation**

No additional data collection was required to support the assessment of Alternative 3A with respect to cultural heritage resources.

##### **3.5.1.2 Supplemental Information for Section 7.8.1 Evaluation of Alternatives**

No cultural heritage resources were identified within the property limit of the St. Marys Landfill. As a result, moving the waste footprint and the watercourse realignment are not going to impact any on-site cultural heritage resources.

There does not appear to be a visual connection between the property and any of the Alternatives that would indirectly affect the off-site heritage residence. This will be confirmed in an updated Cultural Heritage Resources Assessment (CHRA) to be prepared during the detailed design phase of the project.

Similarly, there will be no direct effects to any Cultural Heritage Landscapes (CHLs), according to the CHRA (Vol. 3, Appendix E) as the viewscape is not expected to change significantly with any of the Alternatives. The trees along the southern boundary of the landfill property will need to be removed for Alternative 3A. These trees will remain in place with all remaining Alternatives. The effect of this removal on the landscape is very minimal as these trees only provide a visual block from the agricultural field to the south. They are not integral to blocking the view from Water St. S. It is noted that overall, the trees are on the slope of the former quarry and therefore provide a relatively low and minimally effective visual blockage. Indirect effects to CHLs are not expected but will be confirmed in an updated CHRA to be prepared during the detailed design phase of the project.

Alternative 3A is equally preferred with the other expansion alternatives.

##### **3.5.1.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11.

#### **3.5.2 Archaeological Resources**

##### **3.5.2.1 Baseline Data Collection & Evaluation**

No additional archaeological assessment was completed for Alternative 3A.

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### **3.5.2.2 Supplemental Information for Section 7.8.2 Evaluation of Alternatives**

The Stage 1 Archaeological Assessment (Volume III, Appendix F) concluded that the entire On-Site Study Area has been documented to not retain archaeological potential and that these lands do not require further archaeological assessment.

### **3.5.2.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11.

## **3.6 Traffic**

### **3.6.1 Baseline Data Collection & Evaluation**

No additional data was collected to evaluate Alternative 3A. The same site staff and users would be anticipated to arrive at the site regardless of the Alternative selected (except the Do Nothing Alternative).

### **3.6.2 Supplemental Information for Section 7.9 Evaluation of Alternatives**

There are no anticipated changes to traffic due to Alternative 3A.

### **3.6.3 Table 9.1 Effects, Mitigation, Net Effects, and Monitoring Requirements**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11.

## **3.7 Land Use**

The following applies equally to Sensitive Land Use and Aggregate Resources as discussed in Section 7.10.

### **3.7.1 Baseline Data Collection & Evaluation**

No additional data was collected to evaluate Alternative 3A. The land use information contained in Volume III, Appendix G, the Socio-Economic Impact Assessment, remains relevant to Alternative 3A.

### **3.7.2 Supplemental Information for Section 7.10 Evaluation of Alternatives**

The existing landfill and vacant, former extraction lands are the only uses currently present in the On-Site Study Area. Alternative 3A is like Alternative 3 with respect to land use evaluation.

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### **3.7.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11.

## **3.8 Socio-economic Conditions**

### **3.8.1 Financial Factors**

#### **3.8.1.1 Baseline Data Collection & Evaluation**

The financial evaluation of Alternatives has been updated considering the cost of expanding and operating the landfill site. The Town's costs for waste collection and transportation to the landfill have not been considered. The updated cost estimate is presented in Table 15.

A 20% market factor allowance has been applied to the cost estimate. This accounts for unforeseen market factors that have been occurring due to changes in trade deals, tariffs, the COVID-19 pandemic, product shortages, skilled trades labour shortages, etc.

#### **3.8.2 Supplemental Information for Section 7.11.1 Evaluation of Alternatives**

Alternative 3A has a similar footprint to Alternative 3. This means that the new LCS, perimeter roads, perimeter ditching and new SWM basins are like Alternative 3 (i.e., larger than existing conditions but smaller than Alternatives 2 and 5). The watercourse only requires realignment for this Alternative, which is less work, and therefore lower cost than the relocation in Alternatives 2 and 3. No work is required on SMC lands and therefore there will be no costs associated with property acquisition or easement (not shown on Table 15). There are additional earthworks required on the south and north sides of the waste footprint to prepare for the internal perimeter ditch, perimeter road and the external ditch. The scale, scale house and public drop-off area will need to be relocated for Alternatives 3, 3A and 5. Closure of the site under Alternative 3A will be much like Alternative 3 though less expensive than Alternatives 2 and 5.

### **3.8.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11.

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**Table 16: Capital & Operating Costs of Alternatives**

Item No.	Description	Alternative 2	Alternative 3	Alternative 3A	Alternative 5
A1	Mobilization	\$479,000	\$512,000	\$444,000	\$535,000
A2	Earthworks	\$3,238,000	\$3,303,000	\$2,981,000	\$3,849,000
A3	Landscaping	\$170,000	\$162,000	\$162,000	\$162,000
A4	Road Development	\$698,000	\$680,000	\$550,000	\$1,024,000
A5	Stormwater Management	\$288,000	\$249,000	\$117,000	\$270,000
A6	Electrical Services	\$97,000	\$97,000	\$97,000	\$97,000
A7	Monitoring Well Installation	\$100,000	\$100,000	\$100,000	\$117,000
A8	Public Drop Off Infrastructure	\$0	\$484,000	\$484,000	\$484,000
A9	Creek Realignment/Relocation Efforts	\$610,000	\$610,000	\$219,000	\$11,000
A10	Design and Reporting	\$852,000	\$852,000	\$852,000	\$852,000
A11	Contract Administration & Construction Inspection	\$776,000	\$776,000	\$776,000	\$776,000
A12	Contingency (10%)	\$683,000	\$732,000	\$634,000	\$765,000
Subtotal - Landfill Construction:		\$6,829,000	\$7,313,000	\$6,338,000	\$7,642,000
B1	Closure Construction	\$757,000	\$586,000	\$591,000	\$712,000
B2	Contract Administration & Construction Inspection	\$76,000	\$59,000	\$60,000	\$72,000
B3	Contingency (10%)	\$84,000	\$65,000	\$66,000	\$79,000
Subtotal - Landfill Closure Cover:		\$833,000	\$645,000	\$651,000	\$784,000
<b>CAPITAL COSTS (Present Value)</b>		<b>\$7,662,000</b>	<b>\$7,958,000</b>	<b>\$6,989,000</b>	<b>\$8,426,000</b>
C1	Cell Operation Efforts	\$211,000	\$211,000	\$211,000	\$211,000
C2	Equipment and Equipment Maintenance	\$195,000	\$195,000	\$195,000	\$195,000
C3	Environmental Monitoring	\$34,000	\$34,000	\$34,000	\$41,000
C4	LCS Maintenance and Leachate Disposal	\$43,000	\$37,000	\$34,000	\$39,000
C5	Contingency (10%)	\$49,000	\$48,000	\$48,000	\$49,000
Operations Costs (Annually):		\$532,000	\$525,000	\$522,000	\$535,000
<b>LIFETIME OPERATIONS COST (Present Value)</b>		<b>\$14,554,000</b>	<b>\$14,362,000</b>	<b>\$14,280,000</b>	<b>\$14,636,000</b>
D1	Post Closure Care Requirements	\$77,000	\$74,000	\$73,000	\$75,000
D2	Contingency (10%)	\$8,000	\$8,000	\$8,000	\$8,000
Post Closure Care (Future Annual Cost):		\$85,000	\$82,000	\$81,000	\$83,000
<b>POST CLOSURE CARE (Present Value)</b>		<b>\$5,135,000</b>	<b>\$4,953,000</b>	<b>\$4,893,000</b>	<b>\$5,014,000</b>
<b>TOTAL COST (Present Value)</b>		<b>\$27,351,000</b>	<b>\$27,273,000</b>	<b>\$26,162,000</b>	<b>\$28,076,000</b>

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### **3.8.4 Social Impacts**

#### **3.8.4.1 Baseline Data Collection & Evaluation**

No additional data collection was required to support the assessment of Alternative 3A with respect to social impacts.

#### **3.8.4.1 Supplemental Information for Section 7.11.2 Evaluation of Alternatives**

Social impacts for Alternative 3A are like those of all other expansion Alternatives as all sensitive receptors are in the same location relative to the landfill operation.

#### **3.8.4.1 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11.

### **3.9 Indigenous Communities**

#### **3.9.1 Baseline Data Collection & Evaluation**

No additional data collection was required to support the assessment of Alternative 3A with respect to social impacts.

#### **3.9.2 Supplemental Information for Section 7.12 Evaluation of Alternatives**

There is potential for the Thames River to be affected, as described in this appendix, Section 3.3.2.1 (Surface Water Quality) and Section 3.4.2.2 (Aquatic Ecology).

In summary, surface water from the site eventually drains to the Thames River. Existing landfill operations show no measurable impact on water quality exiting the landfill property, and therefore no impact on water quality in the Thames River.

With the landfill expansion, the risk of contamination is higher for Alternatives 2, 3 and 5 than for Alternative 3A. This is because there is a higher chance of interactions with the CKD material due to the watercourse relocation in Alternatives 2 and 3 and a higher chance of CKD material interactions from landfilling above the CKD pile in Alternative 5. With Alternative 3A, the watercourse realignment is minor and kept farther from the CKD pile compared to the relocation required for Alternatives 2 and 3.

In addition, there are aquatic species at risk in the Thames River. The Thames River will not be directly affected; however, contaminants or sediments from the watercourse could move downstream and impact the Thames River and the aquatics species inhabiting it.



November 2022

**3.9.3 Supplemental Information for Table 9.1 Effects, Mitigation, and Net Effects**

No additional information was required to assess the effects documented in Table 9.1. No additional mitigation was required and there are no monitoring requirements beyond those already proposed in Vol. 1 Section 11.



BURNSIDE

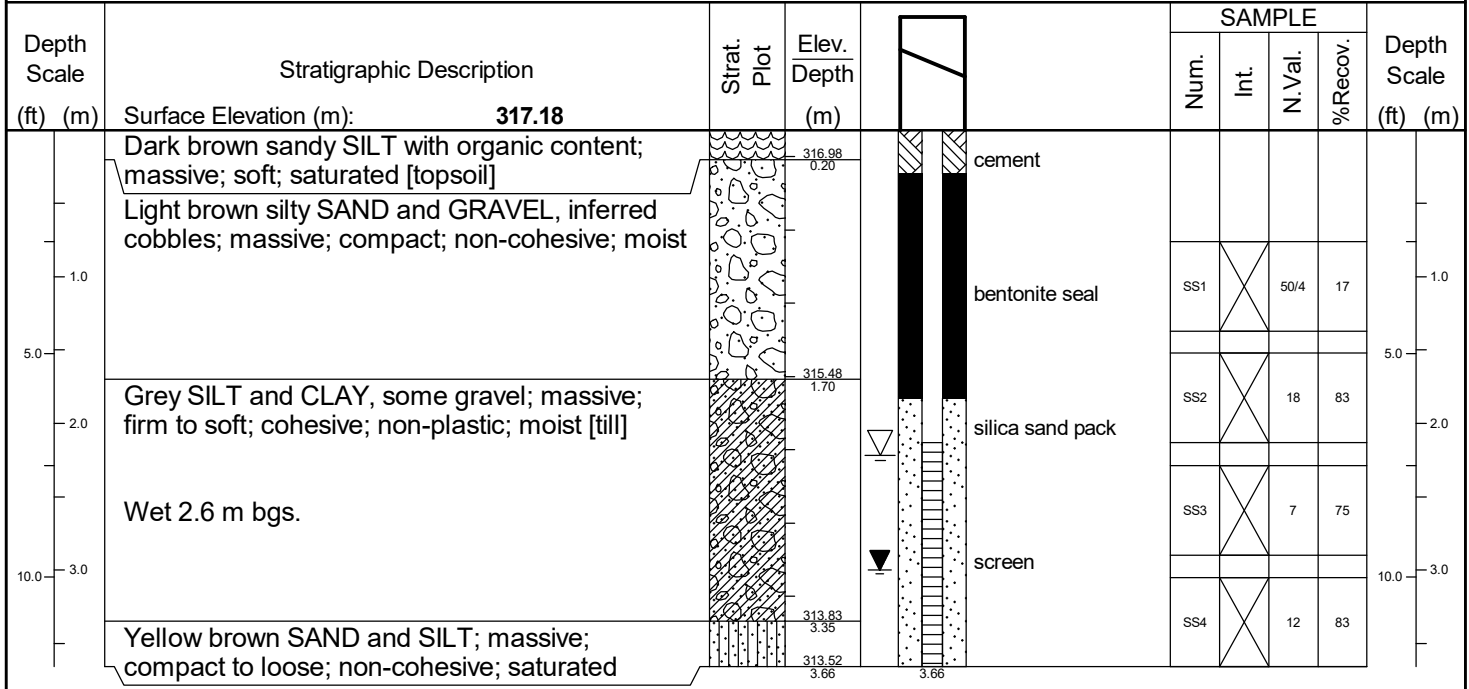
[ THE DIFFERENCE IS OUR PEOPLE ]

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






**Attachment A**

**Borehole Logs**

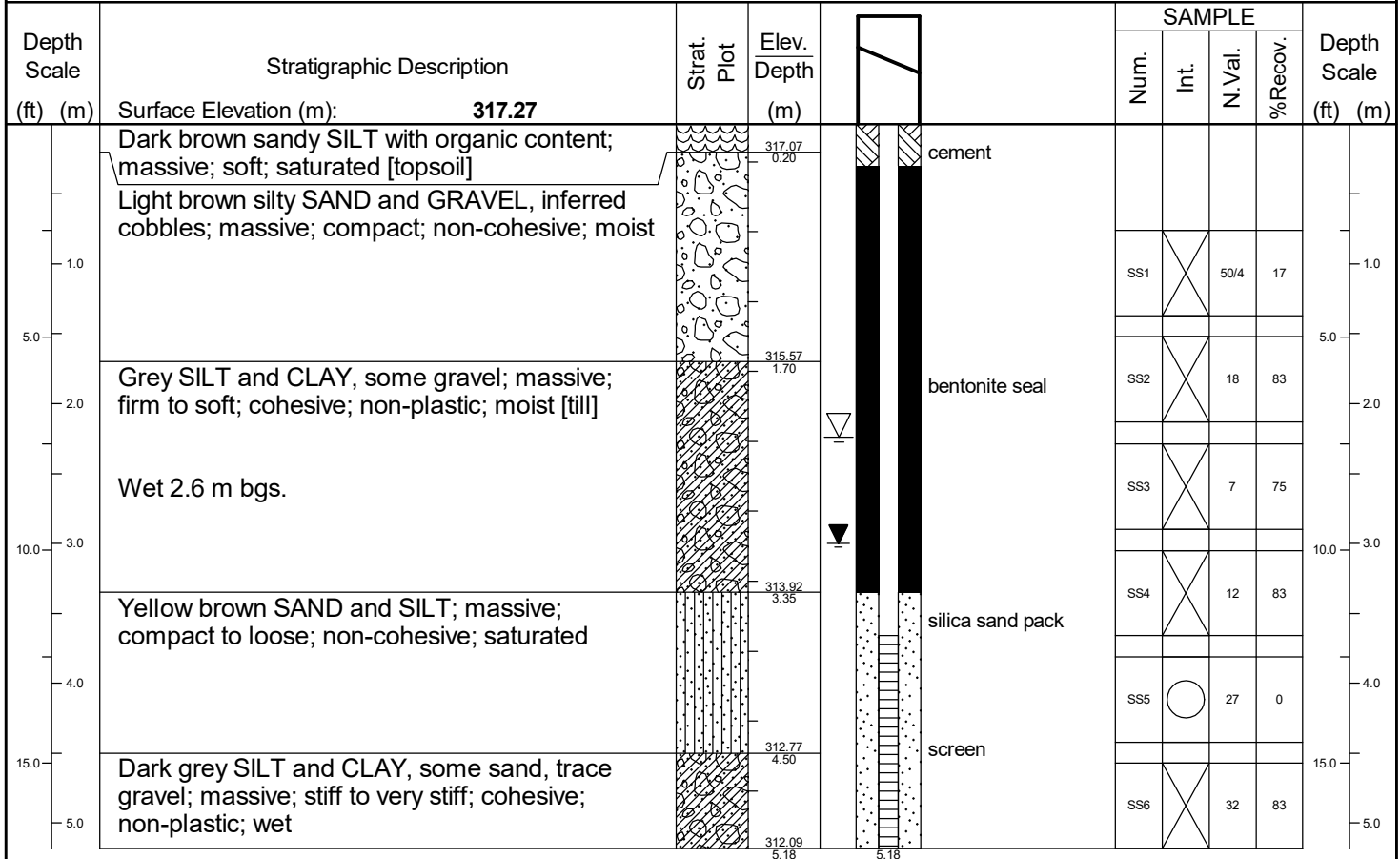
Client: <b>Town of St. Marys</b>	Project Name: <b>St. Marys Landfill</b>	Logged by: <b>A. Maenza</b>
Project No.: <b>300032339.0000</b>	Location: <b>St. Marys</b>	Ground (m amsl): <b>317.18</b>
Drilling Co.: <b>Direct Environmental Drilling</b>	Date Started: <b>4/11/2022</b>	Static Water Level Depth (m): <b>2.22</b>
Drilling Method: <b>Hollow Stem Auger</b>	Date Completed: <b>4/11/2022</b>	Sand Pack Depth (m) : <b>1.83 - 3.66</b>


 Prepared By: **A. Maenza**      Checked By: **K. Hawkes**      Date Prepared: **4/19/2022**









This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside &amp; Associates Limited personnel before use by others.

<b>LEGEND</b>  Water found @ time of drilling  Static Water Level - 4/22/2022	<b>MONITORING WELL DATA</b> Pipe: <b>51 mm dia. PVC</b> Screen: <b>51 mm dia. PVC #10 slot</b>	<b>SAMPLE TYPE</b>	AC  Auger Cutting CS  Continuous RC  Rock Core	SS  Split Spoon AR  Air Rotary WC  Wash Cuttings
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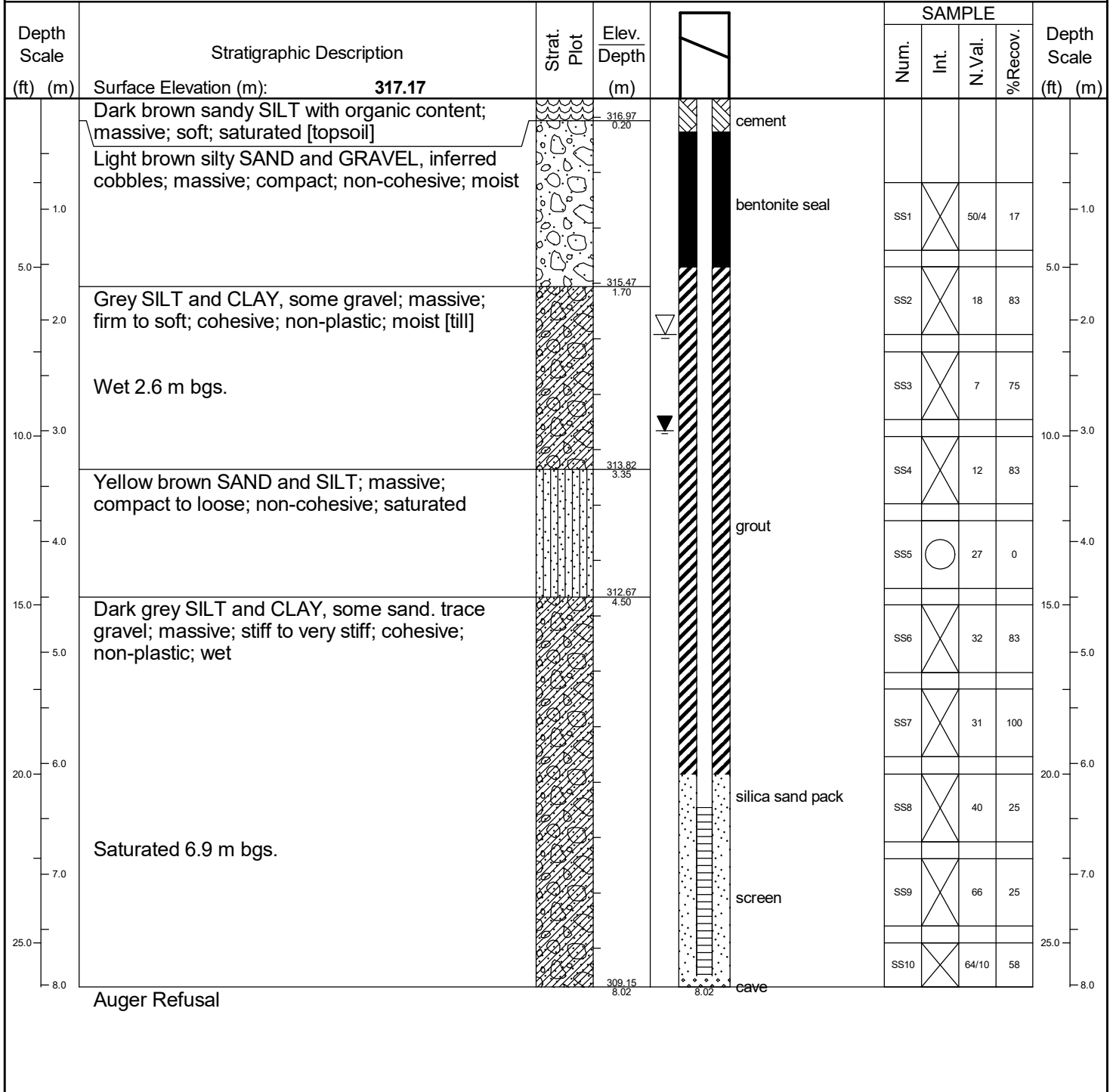
Client: <b>Town of St. Marys</b>	Project Name: <b>St. Marys Landfill</b>	Logged by: <b>A. Maenza</b>
Project No.: <b>300032339.0000</b>	Location: <b>St. Marys</b>	Ground (m amsl): <b>317.27</b>
Drilling Co.: <b>Direct Environmental Drilling</b>	Date Started: <b>4/12/2022</b>	Static Water Level Depth (m): <b>2.24</b>
Drilling Method: <b>Hollow Stem Auger</b>	Date Completed: <b>4/12/2022</b>	Sand Pack Depth (m): <b>3.35 - 5.18</b>



Prepared By: <b>A. Maenza</b>	Checked By: <b>K. Hawkes</b>	Date Prepared: <b>4/19/2022</b>
This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.		









<b>LEGEND</b>  Water found @ time of drilling  Static Water Level - 4/22/2022	<b>MONITORING WELL DATA</b> Pipe: <b>51 mm dia. PVC</b> Screen: <b>51 mm dia. PVC #10 slot</b>	<b>SAMPLE TYPE</b> AC  Auger Cutting CS  Continuous RC  Rock Core SS  Split Spoon AR  Air Rotary WC  Wash Cuttings
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Client: <b>Town of St. Marys</b>	Project Name: <b>St. Marys Landfill</b>	Logged by: <b>A. Maenza</b>
Project No.: <b>300032339.0000</b>	Location: <b>St. Marys</b>	Ground (m amsl): <b>317.17</b>
Drilling Co.: <b>Direct Environmental Drilling</b>	Date Started: <b>4/8/2022</b>	Static Water Level Depth (m): <b>2.13</b>
Drilling Method: <b>Hollow Stem Auger</b>	Date Completed: <b>4/8/2022</b>	Sand Pack Depth (m): <b>6.10 - 7.92</b>

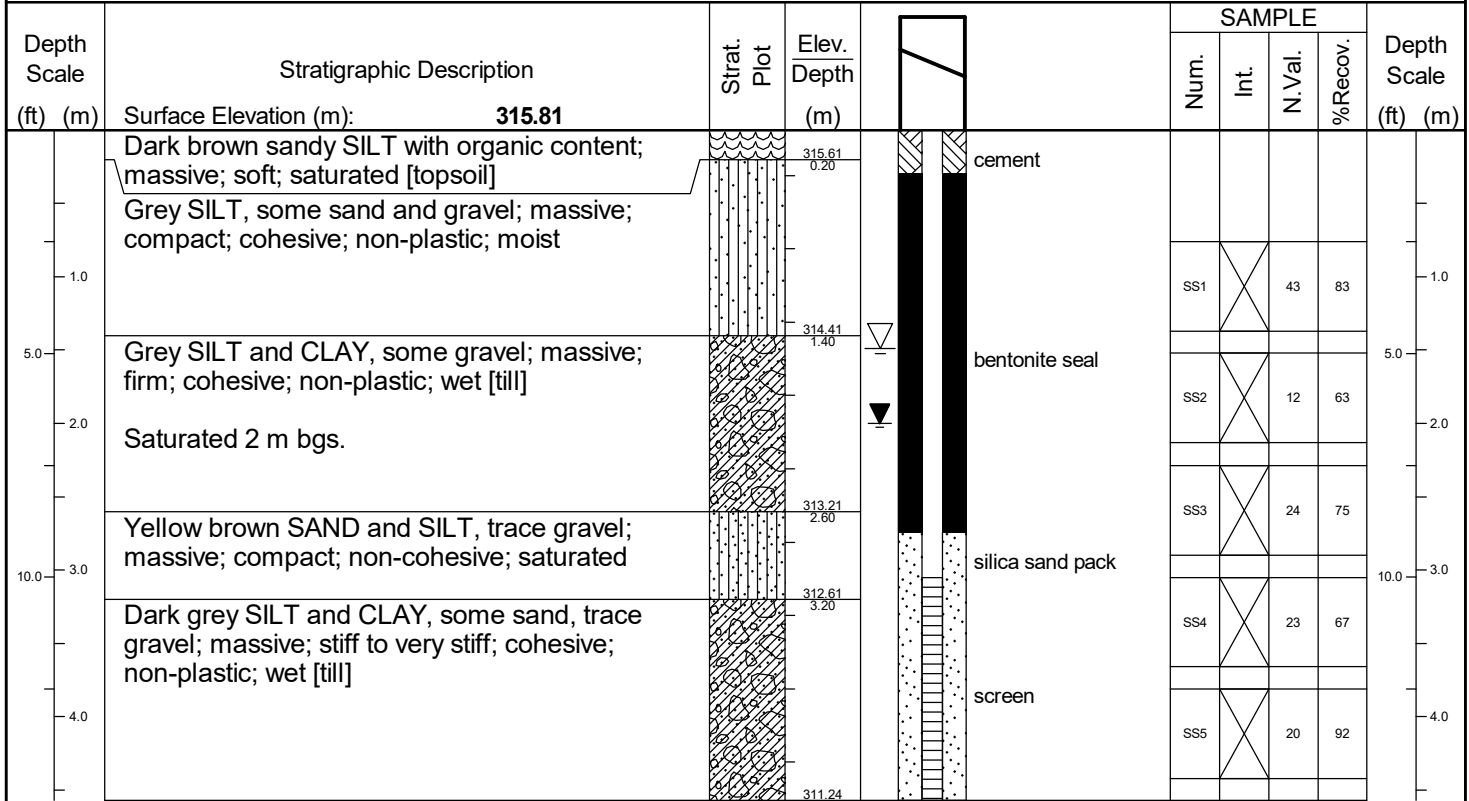


Prepared By: **A. Maenza**      Checked By: **K. Hawkes**      Date Prepared: **4/19/2022**









This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

<b>LEGEND</b>  Water found @ time of drilling  Static Water Level - 4/22/2022	<b>MONITORING WELL DATA</b> Pipe: <b>51 mm dia. PVC</b> Screen: <b>51 mm dia. PVC #10 slot</b>	<b>SAMPLE TYPE</b>	AC  Auger Cutting CS  Continuous RC  Rock Core	SS  Split Spoon AR  Air Rotary WC  Wash Cuttings
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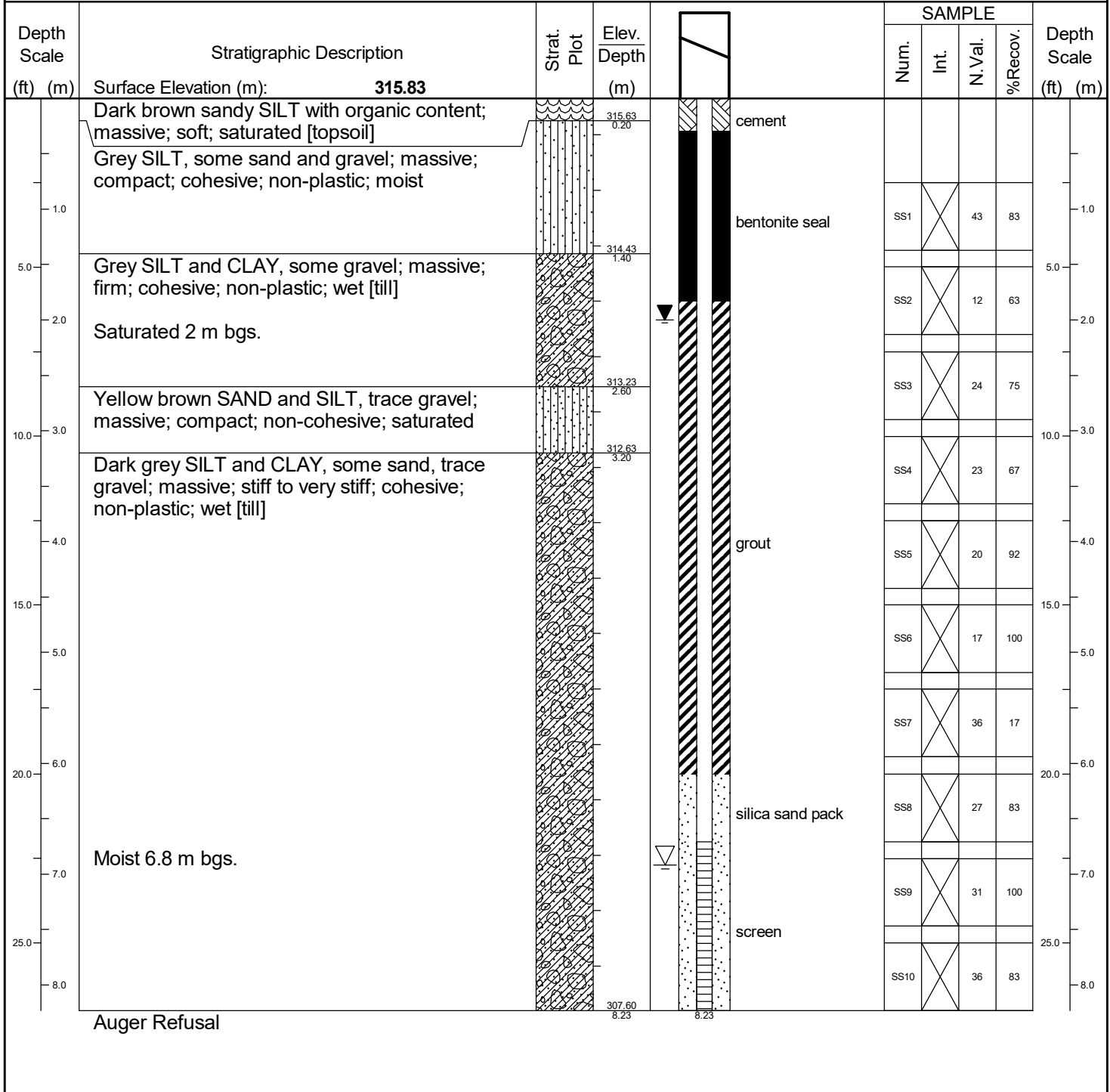
Client: <b>Town of St. Marys</b>	Project Name: <b>St. Marys Landfill</b>	Logged by: <b>A. Maenza</b>
Project No.: <b>300032339.0000</b>	Location: <b>St. Marys</b>	Ground (m amsl): <b>315.81</b>
Drilling Co.: <b>Direct Environmental Drilling</b>	Date Started: <b>4/11/2022</b>	Static Water Level Depth (m): <b>1.49</b>
Drilling Method: <b>Hollow Stem Auger</b>	Date Completed: <b>4/11/2022</b>	Sand Pack Depth (m): <b>2.74 - 4.57</b>



Prepared By: <b>A. Maenza</b>			Checked By: <b>K. Hawkes</b>			Date Prepared: <b>4/19/2022</b>		
This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.								









<b>LEGEND</b>  Water found @ time of drilling  Static Water Level - 4/22/2022	<b>MONITORING WELL DATA</b> Pipe: <b>51 mm dia. PVC</b> Screen: <b>51 mm dia. PVC #10 slot</b>		<b>SAMPLE TYPE</b>		AC  Auger Cutting	SS  Split Spoon
			CS  Continuous	AR  Air Rotary		
			RC  Rock Core	WC  Wash Cuttings		

Client: <b>Town of St. Marys</b>	Project Name: <b>St. Marys Landfill</b>	Logged by: <b>A. Maenza</b>
Project No.: <b>300032339.0000</b>	Location: <b>St. Marys</b>	Ground (m amsl): <b>315.83</b>
Drilling Co.: <b>Direct Environmental Drilling</b>	Date Started: <b>4/8/2022</b>	Static Water Level Depth (m): <b>6.92</b>
Drilling Method: <b>Hollow Stem Auger</b>	Date Completed: <b>4/8/2022</b>	Sand Pack Depth (m): <b>6.10 - 8.23</b>



Prepared By: **A. Maenza**      Checked By: **K. Hawkes**      Date Prepared: **4/19/2022**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

<b>LEGEND</b>  Water found @ time of drilling  Static Water Level - 4/22/2022	<b>MONITORING WELL DATA</b> Pipe: <b>51 mm dia. PVC</b> Screen: <b>51 mm dia. PVC #10 slot</b>	<b>SAMPLE TYPE</b> AC  Auger Cutting CS  Continuous RC  Rock Core	SS  Split Spoon AR  Air Rotary WC  Wash Cuttings
---	--	---	---

Client: <b>Town of St. Marys</b>	Project Name: <b>St. Marys Landfill</b>	Logged by: <b>A. Maenza</b>
Project No.: <b>300032339.0000</b>	Location: <b>St. Marys</b>	Ground (m amsl): <b>320.37</b>
Drilling Co.: <b>Direct Environmental Drilling</b>	Date Started: <b>4/12/2022</b>	Static Water Level Depth (m): <b>NA</b>
Drilling Method: <b>Hollow Stem Auger</b>	Date Completed: <b>4/12/2022</b>	Sand Pack Depth (m): <b>NA</b>

Depth Scale (ft) (m)	Stratigraphic Description	Strat. Plot	Elev. Depth (m)	SAMPLE				Depth Scale (ft) (m)
				Num.	Int.	N.Val.	%Recov.	
	Surface Elevation (m): <b>320.37</b>							
1.0	Brown/grey SILT and CLAY, some gravel; mottled; massive; firm to soft; cohesive; non-plastic; moist [till]  Wet 2.2 m bgs.			SS1	X	7	58	1.0
5.0				SS2	X	8	63	5.0
2.0				SS3	X	11	75	2.0
10.0				SS4	X	6	92	10.0
3.0				SS5	X	7	25	3.0
4.0	Grey SILT and CLAY, some gravel; massive; soft; cohesive; non-plastic; saturated [till]  Stiff and wet 7.6 m bgs.			SS6	X	5	58	4.0
15.0				SS7	X	9	50	15.0
5.0				SS8	X	7	58	5.0
20.0				SS9	X	6	83	20.0
6.0				SS10	X	29	100	6.0
7.0								
25.0								
8.0								

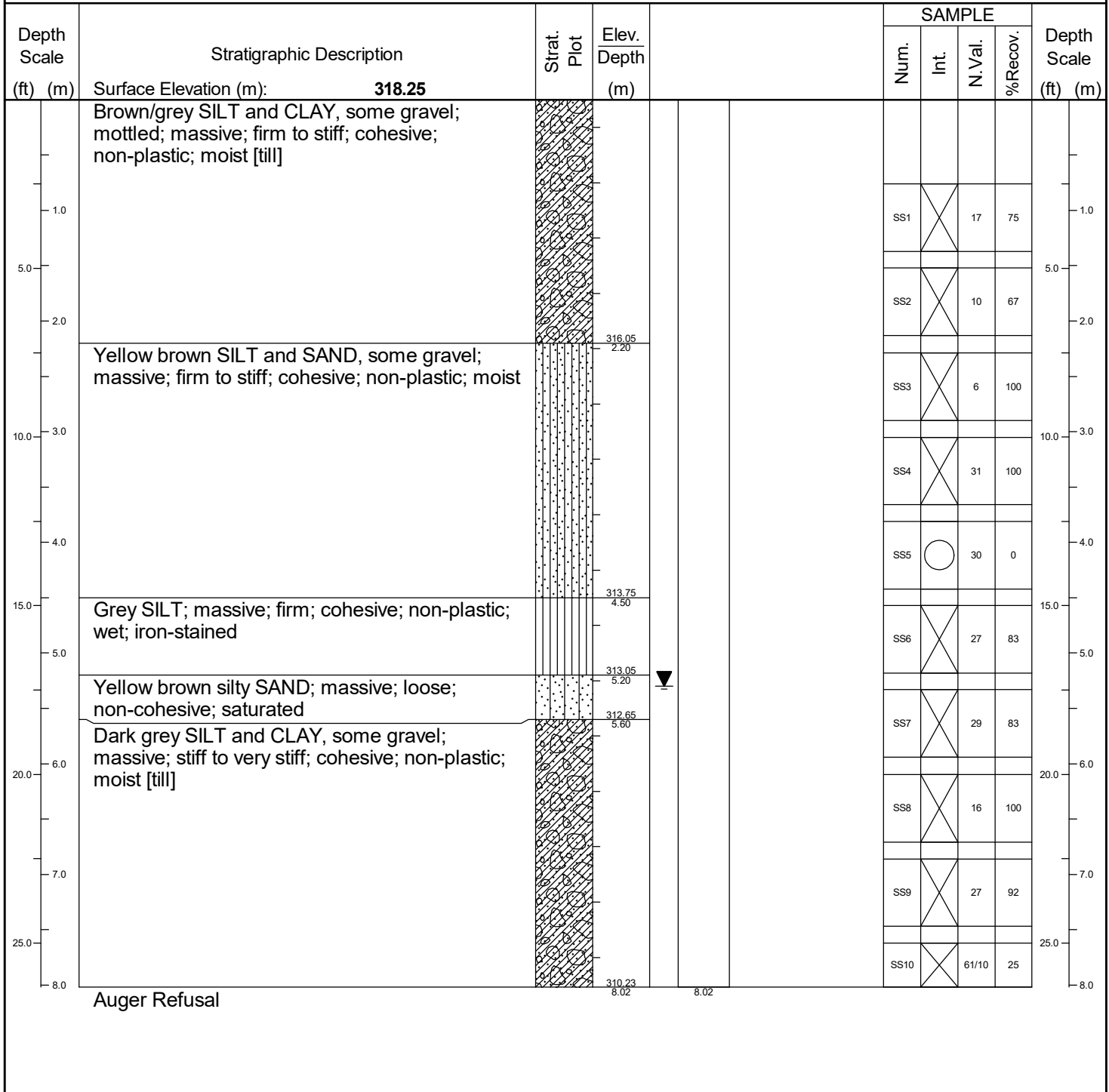
Prepared By: **A. Maenza**      Checked By: **K. Hawkes**      Date Prepared: **4/19/2022**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

<b>LEGEND</b> Water found @ time of drilling Static Water Level -	<b>MONITORING WELL DATA</b> Pipe: Screen:	<b>SAMPLE TYPE</b> AC  Auger Cutting CS  Continuous RC  Rock Core	SS  Split Spoon AR  Air Rotary WC  Wash Cuttings
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





Client: <b>Town of St. Marys</b>	Project Name: <b>St. Marys Landfill</b>	Logged by: <b>A. Maenza</b>
Project No.: <b>300032339.0000</b>	Location: <b>St. Marys</b>	Ground (m amsl): <b>318.25</b>
Drilling Co.: <b>Direct Environmental Drilling</b>	Date Started: <b>4/12/2022</b>	Static Water Level Depth (m): <b>NA</b>
Drilling Method: <b>Hollow Stem Auger</b>	Date Completed: <b>4/12/2022</b>	Sand Pack Depth (m): <b>NA</b>



Prepared By: **A. Maenza**      Checked By: **K. Hawkes**      Date Prepared: **4/19/2022**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

<b>LEGEND</b>  Water found @ time of drilling  Static Water Level -	<b>MONITORING WELL DATA</b> Pipe: Screen:	<b>SAMPLE TYPE</b>	AC  Auger Cutting CS  Continuous RC  Rock Core	SS  Split Spoon AR  Air Rotary WC  Wash Cuttings
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# BURNSIDE

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**Attachment B**

**Grain Size Distribution**

Attachment B



April 21, 2022  
File: M22510

**Attn: Alex Maenza**

R.J. Burnside & Associates Limited  
449 Joesephine Street, PO Box 10  
Wingham, ON N0G 2W0

**RE: Grain Size Analysis, Atterberg Limits, Moisture Content Test Results**  
**St. Marys Landfill (300032339.0000)**

Chung & Vander Doelen Engineering Ltd. (CVD) is pleased to submit the enclosed grain size analysis, atterberg limits, and moisture content test results for the above noted project.

The Atterberg limits test results are as follows:

- 1) Plastic Limit: 18
- 2) Liquid Limit: 39
- 3) Plasticity Index: 21

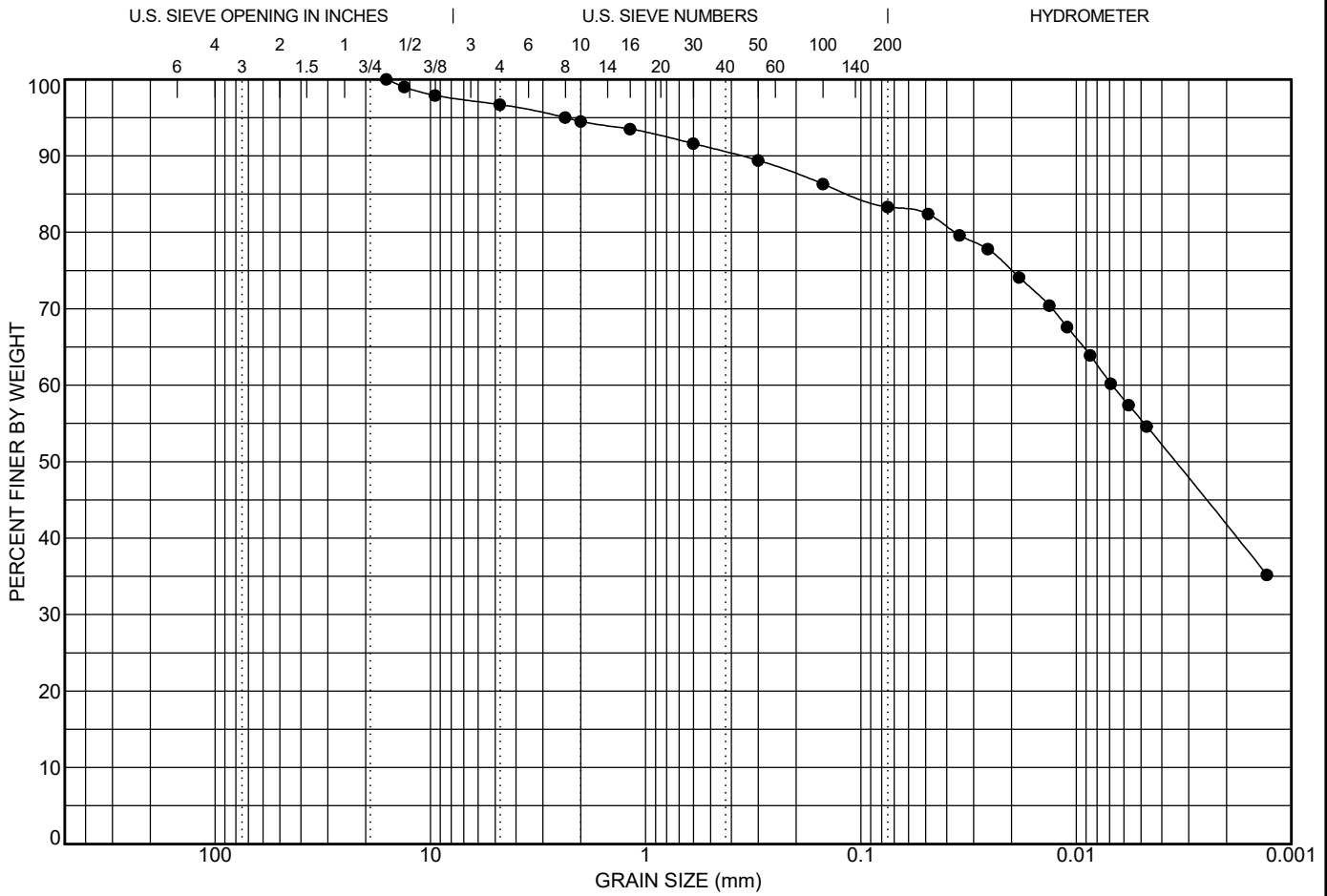
Should you have any questions, please contact our office at your convenience.

Yours truly,

**CHUNG & VANDER DOELEN ENGINEERING LTD.**

Hugh Arthur  
Laboratory Supervisor

Andrew LeDrew, C.E.T., BSS  
Team Manager, Inspection & Materials Testing



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

LL	PL	PI	Cc	Cu	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
39	18	21			16	0.007			3.3	13.4	83.3	

**Date:** Apr. 21 - 2022  
**Client:** R.J. Burnside & Associates Ltd.  
**Contractor:** N/A  
**Source:** MWB **OW38**  
**Sampled From:** 16 ft  
**Sample No.:** SS6  
**Date Sampled:** Apr. 08 - 2022  
**Sampled By:** Client  
**Lab No.:** 316  
**Date Tested:** Apr. 19 - 2022  
**Type of Material:** Clay and Silt, some Sand, trace Gravel

Sieve Size (mm)	Percent Passing	No Specifications

DM - NO SPECIFICATIONS M22510; ST. MARYS LANDFILL GS; APR 21 2022; GPI LAW LNDN.GDT 22-4-21



**CHUNG & VANDER DOELEN  
 ENGINEERING LTD.**  
 311 Victoria Street North  
 Kitchener, Ontario N2H 5E1  
 Telephone: 519-742-8979  
 Fax: 519-742-7739  
 e-mail: info@cvdengineering.com

### GRAIN SIZE DISTRIBUTION

**Project:** St. Marys Landfill  
**Location:** St. Marys, Ontario  
**File No.:** M22510 (300032339.0000)  
**Enclosure No.:** 1



## Moisture Content Analysis of Soils (ASTM D2216 / LS 701)

PROJECT NO.:	<u>M22510 (300032339.0000)</u>	DATE:	<u>Apr 14 2022</u>
PROJECT:	<u>St. Marys Landfill</u>	TESTED BY:	<u>HC</u>
LOCATION:	<u>St. Marys, ON</u>	LAB NO.:	<u>0318</u>

Borehole/Testpit No.	-	-	-	-	-	-	-	-
Depth	-	-	-	-	-	-	-	-
Container No.	C233	C408	RM504	C380	C96	C196	C433	C235
Wet Soil + Container	100.45	106.29	116.71	99.94	89.48	73.42	105.52	113.90
Dry Soil + Container	95.21	93.84	104.69	86.76	77.76	65.71	93.44	98.63
Weight of Container	10.15	10.15	8.40	10.15	10.15	10.15	10.15	10.15
Weight of Water	5.24	12.45	12.02	13.18	11.72	7.71	12.08	15.27
Weight of Dry Soil	85.06	83.69	96.29	76.61	67.61	55.56	83.29	88.48
<b>MOISTURE CONTENT</b>	6.2%	14.9%	12.5%	17.2%	17.3%	13.9%	14.5%	17.3%

Borehole/Testpit No.	-	-	-	-	-	-	-	-
Depth	-	-	-	-	-	-	-	-
Container No.	C135	C491	X210	C310	X214	C372	C178	C188
Wet Soil + Container	109.58	102.24	110.92	112.35	91.01	144.26	118.61	82.25
Dry Soil + Container	94.78	92.37	97.77	97.84	80.13	129.89	108.19	73.37
Weight of Container	10.15	10.15	10.65	10.15	10.65	10.15	10.15	10.15
Weight of Water	14.80	9.87	13.15	14.51	10.88	14.37	10.42	8.88
Weight of Dry Soil	84.63	82.22	87.12	87.69	69.48	119.74	98.04	63.22
<b>MOISTURE CONTENT</b>	17.5%	12.0%	15.1%	16.5%	15.7%	12.0%	10.6%	14.0%

Borehole/Testpit No.	-	-	-	-	-	-	-	-
Depth	-	-	-	-	-	-	-	-
Container No.	C413	C10	C5	C231	C386	C438	C477	C173
Wet Soil + Container	101.81	104.17	118.52	107.44	102.08	119.10	127.68	129.69
Dry Soil + Container	91.44	92.26	101.24	94.90	91.33	107.31	111.18	116.65
Weight of Container	10.15	10.15	10.15	10.15	10.15	10.15	10.15	10.15
Weight of Water	10.37	11.91	17.28	12.54	10.75	11.79	16.50	13.04
Weight of Dry Soil	81.29	82.11	91.09	84.75	81.18	97.16	101.03	106.50
<b>MOISTURE CONTENT</b>	12.8%	14.5%	19.0%	14.8%	13.2%	12.1%	16.3%	12.2%



## Moisture Content Analysis of Soils (ASTM D2216 / LS 701)

PROJECT NO.:	<u>M22510 (300032339.0000)</u>	DATE:	<u>Apr 14 2022</u>
PROJECT:	<u>St. Marys Landfill</u>	TESTED BY:	<u>HC</u>
LOCATION:	<u>St. Marys, ON</u>	LAB NO.:	<u>0318</u>

Borehole/Testpit No.	-	-	-	-	-	-	-	-
Depth	-	-	-	-	-	-	-	-
Container No.	C325	C381	C425	C122	C245	X228	C297	C292
Wet Soil + Container	98.37	75.34	120.02	122.91	84.07	116.59	90.09	122.49
Dry Soil + Container	84.05	71.02	105.66	110.19	77.44	100.73	82.11	110.04
Weight of Container	10.15	10.15	10.15	10.15	10.15	10.65	10.15	10.15
Weight of Water	14.32	4.32	14.36	12.72	6.63	15.86	7.98	12.45
Weight of Dry Soil	73.90	60.87	95.51	100.04	67.29	90.08	71.96	99.89
<b>MOISTURE CONTENT</b>	19.4%	7.1%	15.0%	12.7%	9.9%	17.6%	11.1%	12.5%

Borehole/Testpit No.	-	-	-	-	-	-	-	-
Depth	-	-	-	-	-	-	-	-
Container No.	C267	C66	C474	C43	C130	C88	C156	RM270
Wet Soil + Container	86.67	114.31	104.69	116.29	97.27	103.01	109.18	101.86
Dry Soil + Container	75.21	103.99	90.08	100.49	85.53	88.37	94.79	85.44
Weight of Container	10.15	10.15	10.15	10.15	10.15	10.15	10.15	8.40
Weight of Water	11.46	10.32	14.61	15.80	11.74	14.64	14.39	16.42
Weight of Dry Soil	65.06	93.84	79.93	90.34	75.38	78.22	84.64	77.04
<b>MOISTURE CONTENT</b>	17.6%	11.0%	18.3%	17.5%	15.6%	18.7%	17.0%	21.3%

Borehole/Testpit No.	-	-						
Depth	-	-						
Container No.	X237	J126						
Wet Soil + Container	130.24	122.87						
Dry Soil + Container	112.04	109.35						
Weight of Container	10.65	10.65						
Weight of Water	18.20	13.52						
Weight of Dry Soil	101.39	98.70						
<b>MOISTURE CONTENT</b>	18.0%	13.7%						



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## Attachment C

### Soil Quality Results

**032339 St. Marys Drilling Program**  
**Soil Moisture Sample Log**

<b>MWA - 04/08/2022</b>		
<b>Split Spoon</b>	<b>Depth</b>	<b>Tin ID</b>
SS1	0.76 - 1.37	C381
SS2A	1.52 - 1.68	C245
SS2B	1.68 - 2.13	C386
SS3	2.29 - 2.90	C491
SS4A	3.05 - 3.35	C380
SS4B	3.35 - 3.66	C5
SS5	3.81 - 4.42	No Recov.
SS6	4.57 - 5.18	C173
SS7	5.33 - 5.94	C66
SS8	6.10 - 6.71	C88
SS9	6.86 - 7.47	C477
SS10	7.62 - 8.02	C292

<b>MWB - 04/08/2022</b>		
<b>Split Spoon</b>	<b>Depth</b>	<b>Tin ID</b>
SS1	0.76 - 1.37	C233
SS2	1.52 - 2.13	C231
SS3A	2.29 - 2.59	C433
SS3B	2.59 - 2.90	
SS4A	3.05 - 3.20	C425
SS4B	3.20 - 3.65	X237
SS5	3.81 - 4.42	C235
SS6	4.57 - 5.18	C135
SS7	5.33 - 5.94	C156
SS8	6.10 - 6.71	C372
SS9	6.86 - 7.47	C297
SS10	7.62 - 8.23	X214

<b>BHC - 04/12/2022</b>		
<b>Split Spoon</b>	<b>Depth</b>	<b>Tin ID</b>
SS1	0.76 - 1.37	C188
SS2	1.52 - 2.13	RM504
SS3	2.29 - 2.90	C438
SS4	3.05 - 3.66	C130
SS5	3.81 - 4.42	C96
SS6	4.57 - 5.18	C408
SS7	5.33 - 5.94	J126
SS8	6.10 - 6.71	C122
SS9	6.86 - 7.47	C10
SS10	7.62 - 8.23	RM270

<b>BHD - 04/12/2022</b>		
<b>Split Spoon</b>	<b>Depth</b>	<b>Tin ID</b>
SS1	0.76 - 1.37	C413
SS2	1.52 - 2.13	X210
SS3	2.29 - 2.90	X228
SS4	3.05 - 3.66	C196
SS5	3.81 - 4.42	No Recov.
SS6	4.57 - 5.18	C43
SS7A	5.33 - 5.64	C474
SS7B	5.64 - 5.94	C178
SS8	6.10 - 6.71	C325
SS9	6.86 - 7.47	C310
SS10	7.62 - 8.02	C267





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**Attachment D**

**Hydraulic Connectivity Testing**



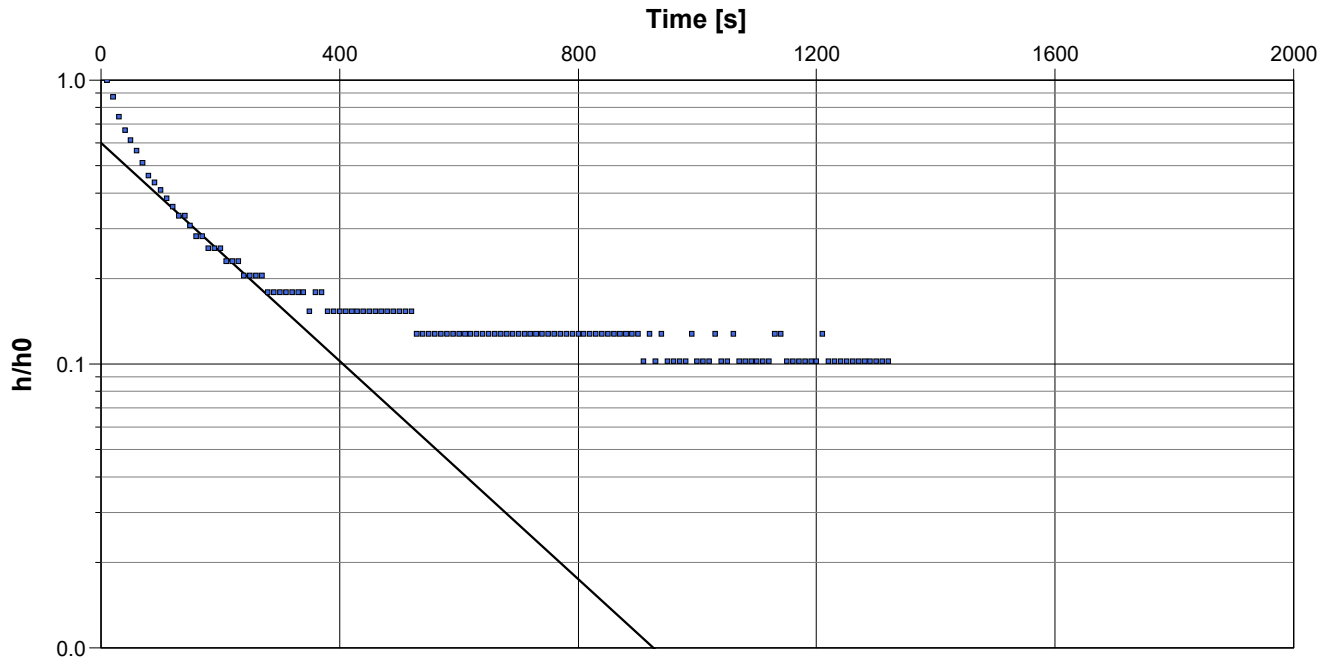
**Slug Test Analysis Report**

Project: St. Marys Landfill

Number: 30002339

Client: Town of St. Marys

Location: St. Marys	Slug Test: Falling Head - OW371	Test Well: OW371
Test Conducted by: A.M.		Test Date: 4/22/2022
Analysis Performed by: J.D.	Falling Head Slug Test	Analysis Date: 5/3/2022
Aquifer Thickness: 1.20 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [cm/s]	
OW371	$3.01 \times 10^{-4}$	$3.01 \times 10^{-6} \text{ m/s}$



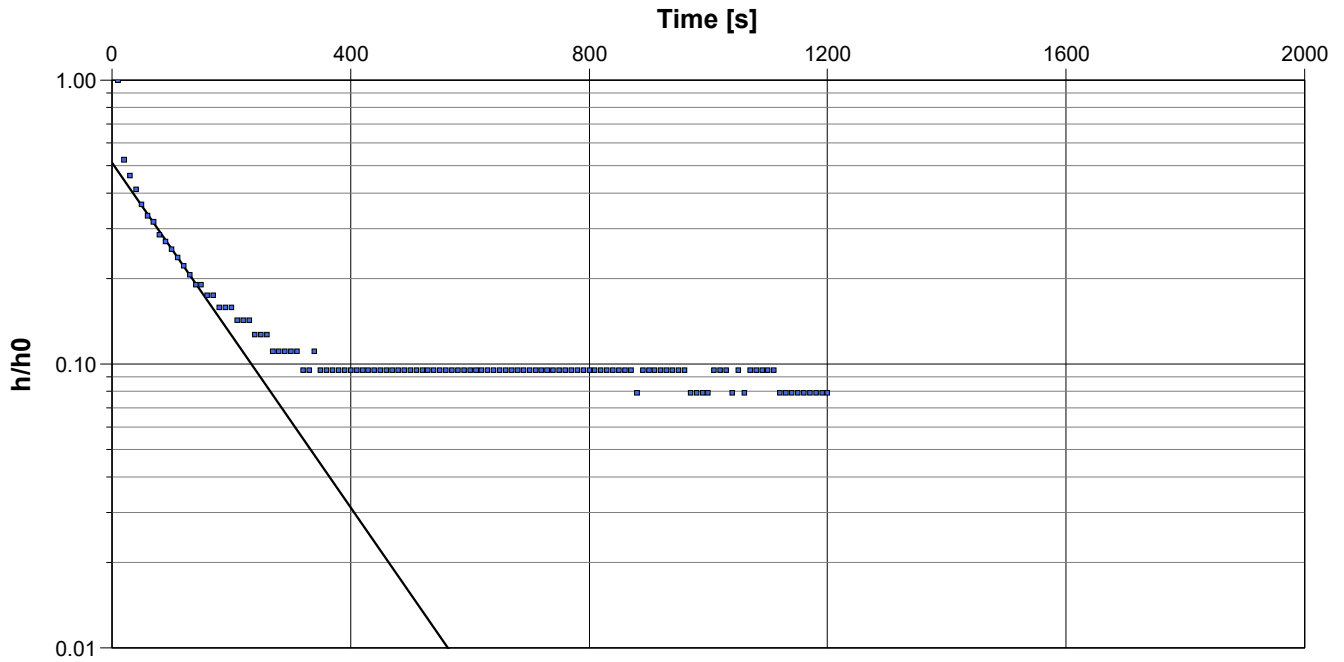
**Slug Test Analysis Report**

Project: St. Marys Landfill

Number: 30002339

Client: Town of St. Marys

Location: St. Marys	Slug Test: Rising Head - OW371	Test Well: OW371
Test Conducted by: A.M.		Test Date: 4/22/2022
Analysis Performed by: J.D.	Rising Head Slug Test	Analysis Date: 5/3/2022
Aquifer Thickness: 1.20 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [cm/s]	
OW371	$6.27 \times 10^{-4}$	$6.27 \times 10^{-6} \text{ m/s}$



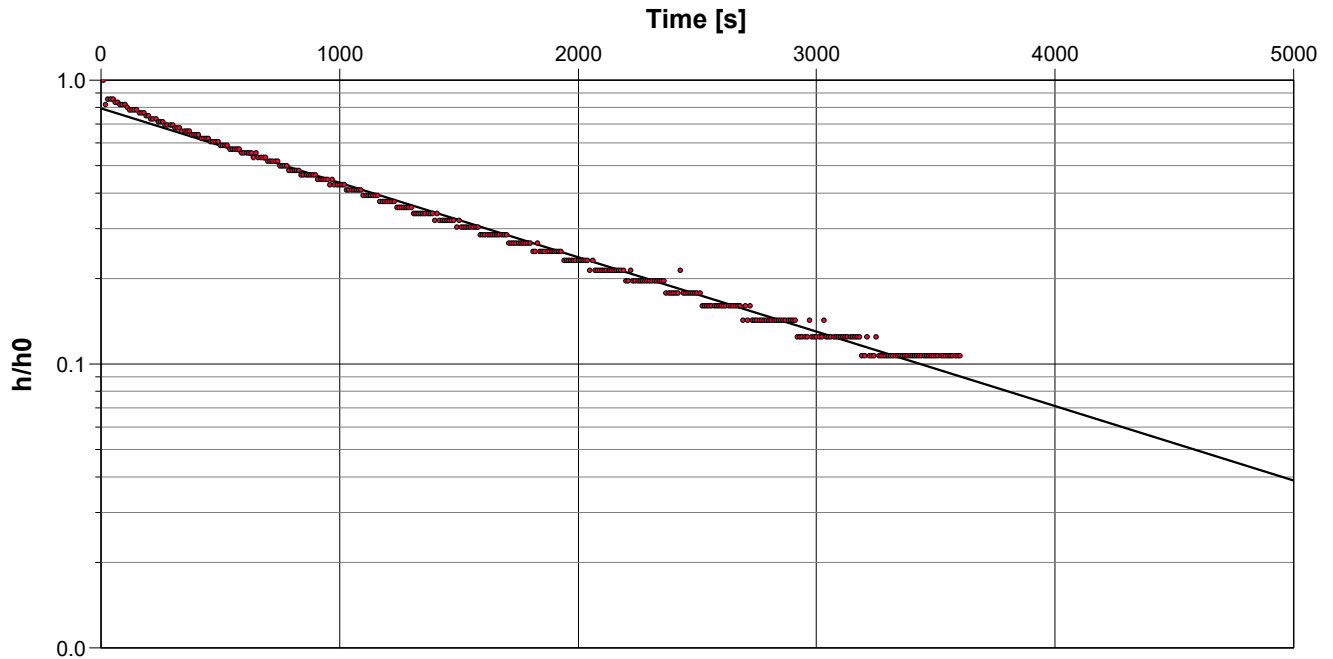
**Slug Test Analysis Report**

Project: St. Marys Landifll

Number: 30002339

Client: Town of St. Marys

Location: St. Marys	Slug Test: Falling Head - OW37D	Test Well: OW37D
Test Conducted by: A.M.		Test Date: 4/22/2022
Analysis Performed by: J.D.	Falling Head Slug Test	Analysis Date: 5/3/2022
Aquifer Thickness: 3.50 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [cm/s]	
OW37D	$5.37 \times 10^{-5}$	$5.4 \times 10^{-7} \text{ m/s}$



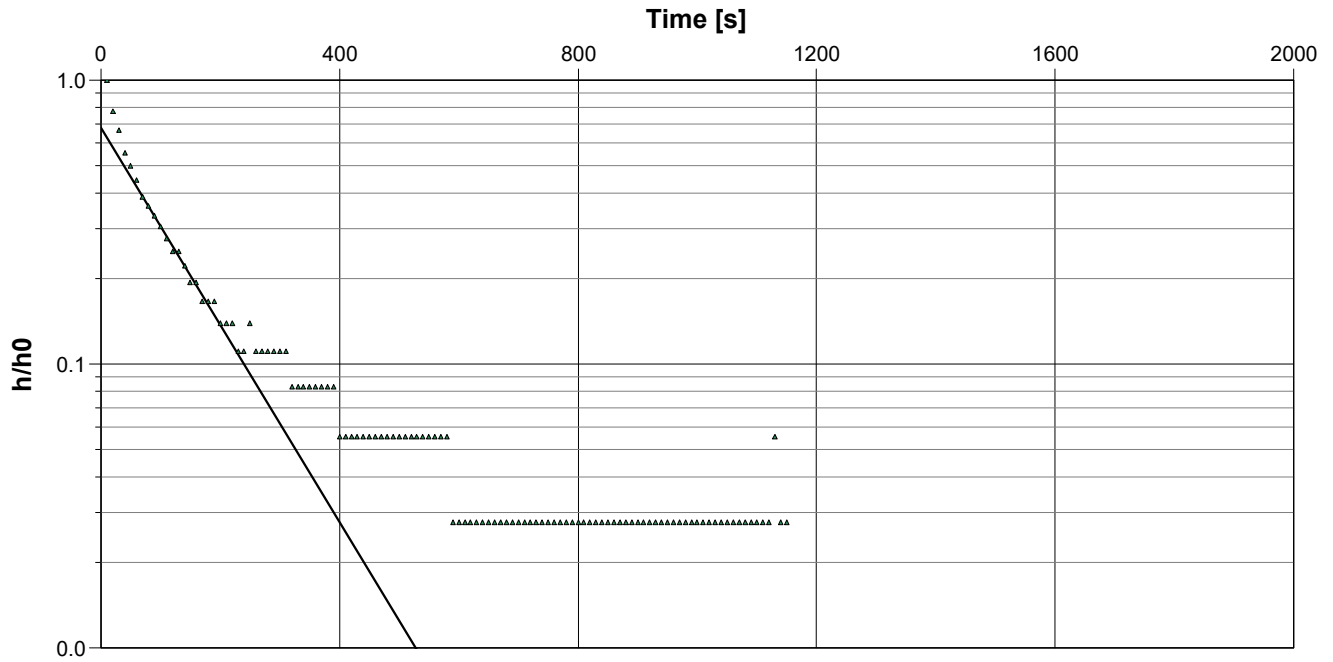
**Slug Test Analysis Report**

Project: St. Marys Landiffl

Number: 30002339

Client: Town of St. Marys

Location: St. Marys	Slug Test: Falling Head - OW38S	Test Well: OW38S
Test Conducted by: A.M.		Test Date: 4/22/2022
Analysis Performed by: J.D.	Falling Head Slug Test	Analysis Date: 5/3/2022
Aquifer Thickness: 0.60 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [cm/s]	
OW38S	$7.10 \times 10^{-4}$	$7.1 \times 10^{-6} \text{ m/s}$



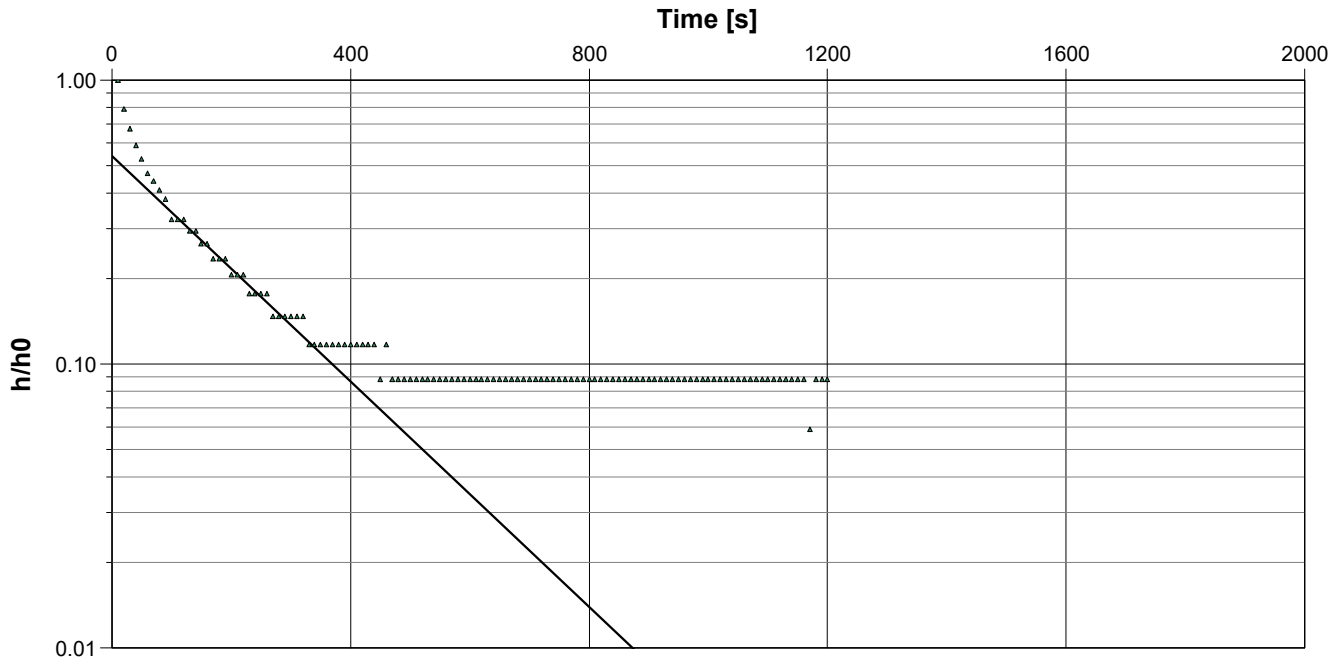
**Slug Test Analysis Report**

Project: St. Marys Landfill

Number: 30002339

Client: Town of St. Marys

Location: St. Marys	Slug Test: Rising Head - OW38S	Test Well: OW38S
Test Conducted by: A.M.		Test Date: 4/22/2022
Analysis Performed by: J.D.	Rising Head Slug Test	Analysis Date: 5/3/2022
Aquifer Thickness: 0.60 m		



Calculation using Hvorslev

Observation Well	Hydraulic Conductivity [cm/s]	
OW38S	$4.06 \times 10^{-4}$	$4.1 \times 10^{-6} \text{ m/s}$



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## **Attachment E**

### **Schedule 5 – Groundwater, Leachate and Surface Water Monitoring Parameters**

**LANDFILL STANDARDS:**  
**A GUIDELINE ON THE REGULATORY AND APPROVAL REQUIREMENTS  
FOR NEW OR EXPANDING LANDFILLING SITES**

**Last Revision Date:**

January 2012

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attribution

PIBS 7792e



**SCHEDULE 5**  
**Groundwater, Leachate and Surface Water Monitoring Parameters**

Parameter Group	Parameter			
	Column 1	Column 2	Column 3	Column 4
	<b>Comprehensive List for Groundwater and Leachate</b>	<b>Indicator List For Groundwater and Leachate</b>	<b>Comprehensive List for Surface Water</b>	<b>Indicator List for Surface Water</b>
<b>Inorganics</b>				
	Alkalinity	Alkalinity	Alkalinity	Alkalinity
	Ammonia	Ammonia	Ammonia	Ammonia
	Arsenic		Arsenic	
	Barium	Barium	Barium	
	Boron	Boron	Boron	
	Cadmium		Cadmium	
	Calcium	Calcium		
	Chloride	Chloride	Chloride	Chloride
	Chromium		Chromium	
	Conductivity	Conductivity	Conductivity	Conductivity
	Copper		Copper	
	Iron	Iron	Iron	Iron
	Lead		Lead	
	Magnesium	Magnesium		
	Manganese			
	Mercury		Mercury	
	Nitrate	Nitrate	Nitrate	Nitrate
	Nitrite		Nitrite	Nitrite
	Total Kjeldahl Nitrogen		Total Kjeldahl Nitrogen	Total Kjeldahl Nitrogen
	pH	pH	pH	pH
	Total Phosphorus		Total Phosphorus	Total Phosphorus
	Potassium			
	Sodium	Sodium		
	Suspended Solids (Leachate Only)	Suspended Solids (Leachate Only)	Suspended Solids	Suspended Solids
	Total Dissolved Solids	Total Dissolved Solids	Total Dissolved Solids	Total Dissolved Solids
	Sulphate	Sulphate	Sulphate	Sulphate

	Zinc		Zinc	
<b>Volatile Organics</b>				
	Benzene			
	1,4 Dichlorobenzene			
	Dichloromethane			
	Toluene			
	Vinyl Chloride			
<b>Other Organics</b>				
	Biochemical Oxygen Demand (BOD <sub>5</sub> ) (Leachate Only)	Biochemical Oxygen Demand (BOD <sub>5</sub> ) (Leachate Only)	Biochemical Oxygen Demand (BOD <sub>5</sub> )	Biochemical Oxygen Demand (BOD <sub>5</sub> )
	Chemical Oxygen Demand	Chemical Oxygen Demand	Chemical Oxygen Demand	Chemical Oxygen Demand
	Dissolved Organic Carbon	Dissolved Organic Carbon		
	Phenol		Phenol	Phenol
<b>Field Parameters</b>				
			Temperature	Temperature
	pH	pH	pH	pH
	Conductivity	Conductivity	Conductivity	Conductivity
			Dissolved Oxygen	Dissolved Oxygen
			Flow	Flow



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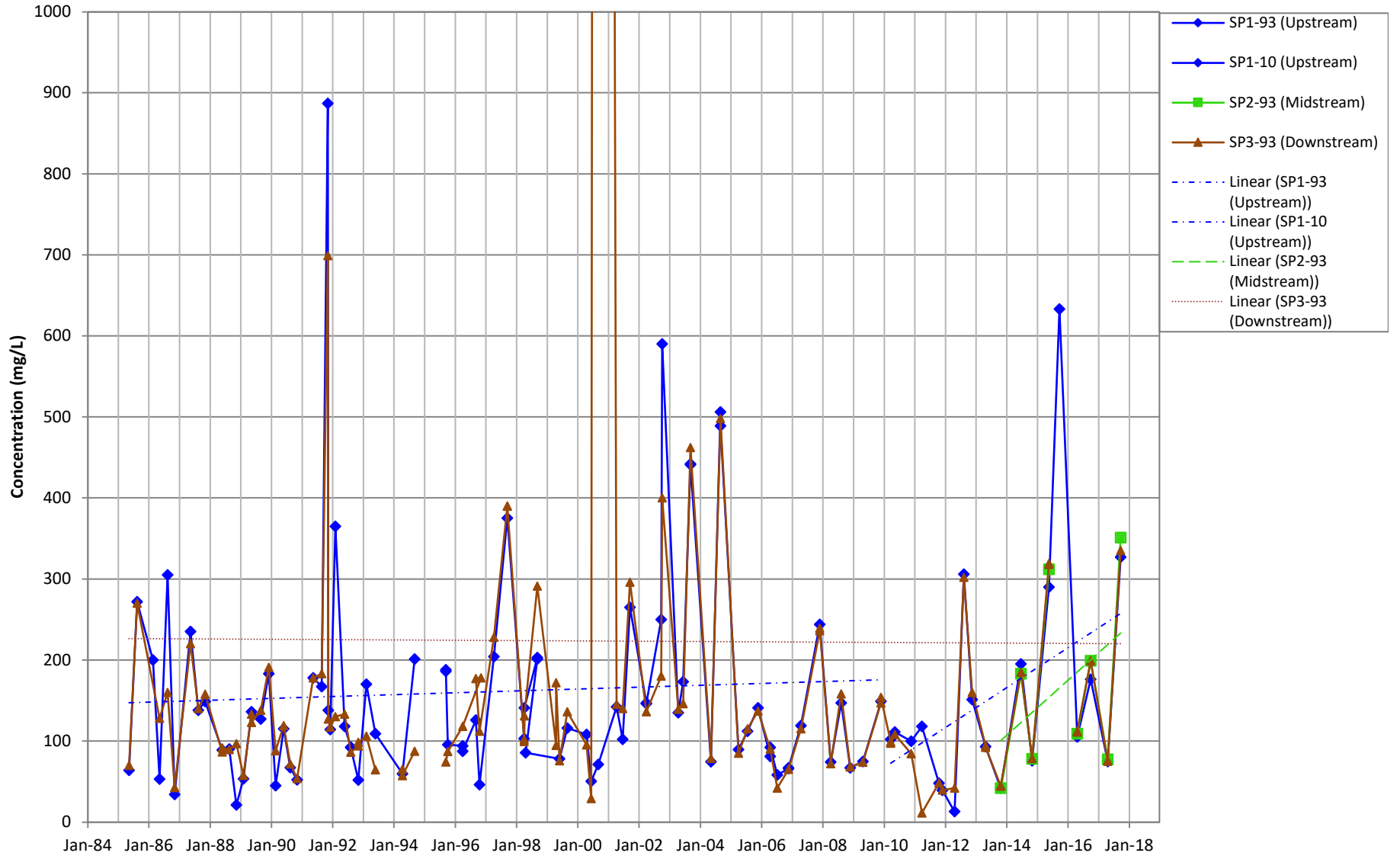
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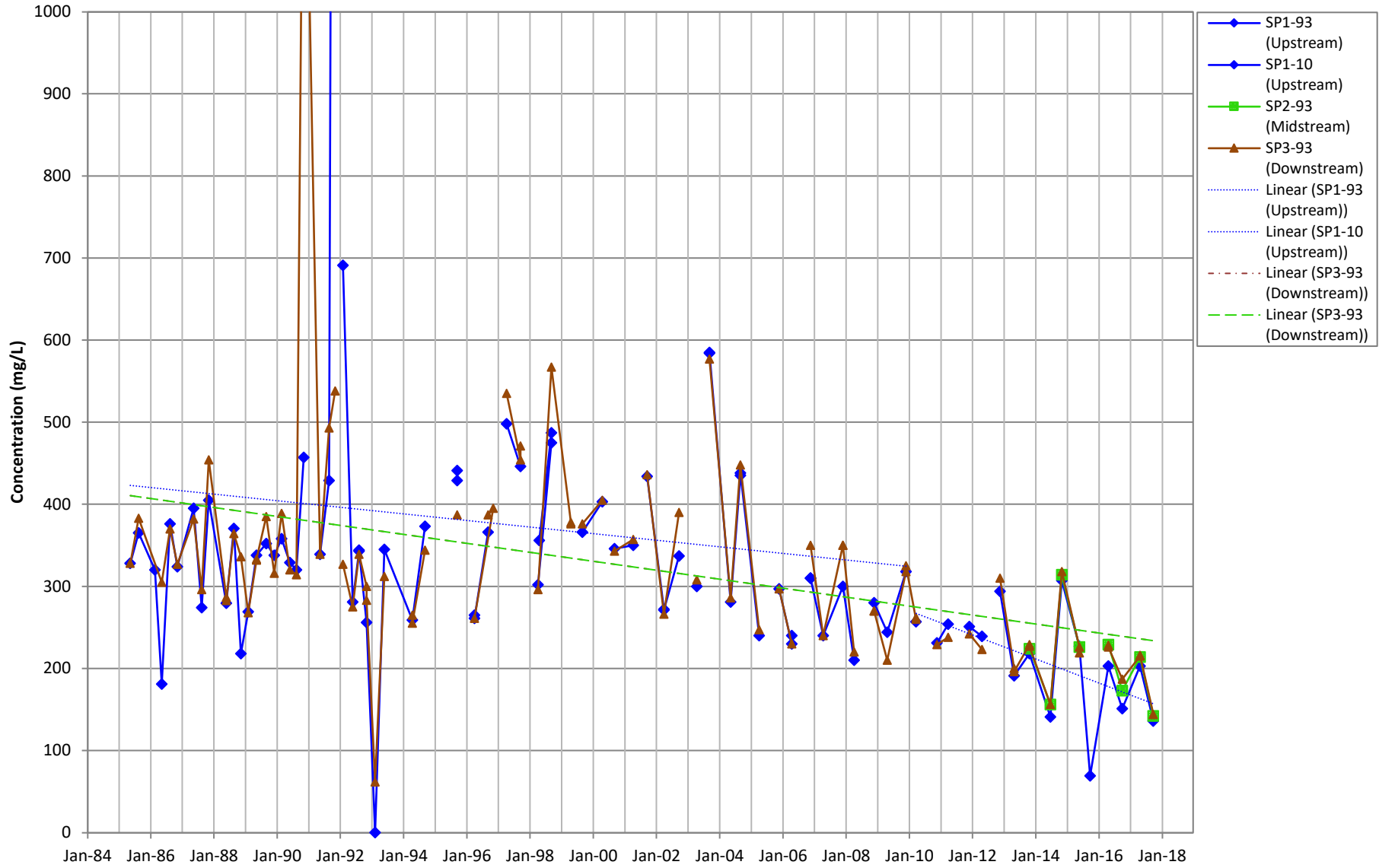
## Attachment F

### Time vs. Concentration

# Watercourse - Chloride



# Watercourse - Hardness





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## Appendix E

### Approved Terms of Reference

Ministry of the Environment  
and Climate Change

Ministère de l'Environnement et de  
l'Action en matière de changement  
climatique

Office of the Minister

Bureau du ministre

77 Wellesley Street West  
11th Floor, Ferguson Block  
Toronto ON M7A 2T5  
Tel.: 416-314-6790  
Fax: 416-314-6748

77, rue Wellesley Ouest  
11<sup>e</sup> étage, édifice Ferguson  
Toronto ON M7A 2T5  
Tél.: 416-314-6790  
Télé.: 416-314-6748



Ontario

ENV1283MC-2014-80

**DEC 29 2014**

Mr. Dave Blake  
Environmental Coordinator  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys ON N4X 1B6

Dear Mr. Blake:

Thank you for submitting your amended Terms of Reference on January 13, 2014, and an errata letter on February 25, 2014 for the Town of St. Marys (Town) Future Solid Waste Disposal Needs Environmental Assessment (Project). The Ministry of the Environment and Climate Change (Ministry) has completed its review and I wish to inform you that I have approved your Terms of Reference and amended it to include the errata letter submitted to the Ministry. Please see the attached Notice of Approval.

As required by subsection 6.1(1) of the Environmental Assessment Act, your environmental assessment must now be prepared in accordance with the approved amended Terms of Reference. While this approval provides additional certainty to your environmental assessment decision-making process, it does not secure approval of an undertaking. The Town of St. Marys is responsible for fulfilling the commitments outlined in the amended Terms of Reference and for providing the appropriate level of quality in the environmental assessment.

As per the errata letter, the Ministry understands that Town will be undertaking a waste diversion study in parallel with the environmental assessment process for the Project. The Ministry is committed to working with all stakeholders, including municipalities, to develop a new waste framework to further increase diversion in the province. The Ministry will be very interested in the outcome of your waste diversion study. The Ministry recommends that you complete your waste diversion study before an environmental assessment decision is made, as the outcome of this study may impact the Project. Furthermore, it is the Ministry's expectation that you will consider how to apply best management practices related to waste management and diversion in your waste diversion study and environmental assessment.

Mr. Dave Blake  
Page 2.

Should you wish to vary significantly from your approved amended Terms of Reference in preparing your environmental assessment, you will need to submit a new Terms of Reference for my decision. In the event of any uncertainty, you should consult with the Ministry through its Environmental Approvals Branch.

Should you require further assistance please contact Mr. Wesley Wright, Project Officer of the Environmental Approvals Branch, at 416-325-5500 or by e-mail at [wesley.wright@ontario.ca](mailto:wesley.wright@ontario.ca).

Sincerely,

A handwritten signature in black ink, consisting of a large, stylized loop followed by a horizontal line extending to the right.

Glen Murray  
Minister of the Environment and Climate Change

Attachment

c: Debanjan Mookerjea, R.J. Burnside  
EAIMS No. 09212



# TERMS OF REFERENCE - NOTICE OF APPROVAL

## ENVIRONMENTAL ASSESSMENT ACT

### SUBSECTION 6(4)

## APPROVAL OF TERMS OF REFERENCE

### FOR

## THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT

RE: Proponent: Town of St. Marys

Undertaking: Town of St. Marys Future Solid Waste Disposal Needs Environmental Assessment

EAIMS No.: 09212

As provided for by subsection 6(4) of the Environmental Assessment Act, the Terms of Reference, as submitted for approval to the Ministry of the Environment and Climate Change on January 13, 2014 to govern the preparation of an environmental assessment for the above-noted undertaking, is hereby approved with the following amendment:

1. The Terms of Reference shall be amended to include as part of the Terms of Reference the errata letter submitted to the Ministry of the Environment and Climate Change, and dated February 25, 2014. The errata letter shall form part of the Terms of Reference.

Pursuant to subsection 6.1(1) of the Environmental Assessment Act, any environmental assessment for the above-noted undertaking, submitted to the Ministry of the Environment and Climate Change pursuant to subsection 6.2(1) of the Environmental Assessment Act, must be prepared in accordance with the amended Terms of Reference as hereby approved.

### Reasons:

I am satisfied that an environmental assessment prepared in accordance with the amended Terms of Reference will be consistent with the purpose of the Environmental Assessment Act and the public interest for the following reasons:

1. The amended Terms of Reference ensures that the environmental assessment will be completed using a public, Aboriginal and government agency consultation process that is open and transparent;

2. The amended Terms of Reference ensures that the completed environmental assessment will contain a sufficient level of detail to accurately assess the environmental effects of a reasonable range of alternatives and the proposed undertaking;
3. The amended Terms of Reference sets out a planning process that will ensure the completed environmental assessment will be consistent with the purpose of the Environmental Assessment Act and the public interest; and,
4. All issues and concerns raised have adequately been addressed in the amended Terms of Reference or can be addressed during the preparation of the environmental assessment.

Dated the 29<sup>th</sup> day of December, 2014 at TORONTO.



---

Minister of the Environment and Climate Change  
77 Wellesley Street West  
11th Floor, Ferguson Block  
Toronto, Ontario  
M7A 2T5



# ENVIRONMENTAL SERVICES

The Corporation of the Town of St. Marys

## VIA E-MAIL

February 25, 2014

Agatha Garcia-Wright  
 Director  
 Environmental Approvals Branch  
 Ministry of the Environment  
 2 St. Clair Avenue West, Floor 12A  
 Toronto, ON M4V 1L5

**Subject: Errata Letter – Town of St. Marys Future Solid Waste Disposal Needs  
 Environmental Assessment Terms of Reference**

Dear Ms. Garcia-Wright:

Pursuant to a recent e-mail with Mr. Wesley Wright, Project Officer, Ministry of Environment, the Town of St. Marys wishes to provide you with the following errata table for the R.J. Burnside & Associates report entitled *Proposed Terms of Reference, Town of St. Marys Future Solid Waste Disposal Needs, Environmental Assessment (Amended)*, dated December 2013. Generally, the Town wishes to note that increased or enhanced waste diversion efforts are being considered by the Town as an ongoing, additional effort beyond the scope of the proposed EA process, though it will be conducted alongside the EA. To this end, the following changes are proposed. Therefore, this errata table is intended to provide clarity to the proposed Terms of Reference (ToR) for your consideration.

Location in ToR	Existing Text (if applicable)	Explanation, Revision or Additional Text
Section 2.1.2, last paragraph (p.8)	The annual fill rate, annual waste disposal tonnage, and population projection will be reassessed as part of the EA. This may result in the proposed landfill capacity, the planning period or both being adjusted to reflect future estimates/requirements.	The annual fill rate, annual waste disposal tonnage, and population projection will be reassessed as part of the EA. In parallel with the EA process, the Town will review increased waste diversion opportunities. This may result in the proposed landfill capacity, the planning period or both being adjusted to reflect future estimates/requirements.
Section 2.1.3, last paragraph (p.9)	Additional waste diversion efforts are expected to be reviewed and implemented by the Town during the 40 year planning period being considered under this EA process.	Replace with:  The maintenance and expansion of the Town's waste diversion programs are efforts intended to proceed along with, but separate from, this EA process. However, the Town will also review and may implement additional waste diversion efforts as a normal course of future activities, beyond this EA. The ability to separate, process and market

Location in ToR	Existing Text (if applicable)	Explanation, Revision or Additional Text
		additional recyclable materials – or otherwise divert material from landfill disposal – is expected to change over the 40 year planning period of the proposed undertaking. Hence, the Town will review and implement diversion activities as opportunities arise.
Section 4.1, Table 4.1, Alternative 2 (p.12)	Description	Add to (end of) Description:  Despite this, the Town will review and implement diversion activities as opportunities arise, outside of this EA process.
Section 4.4, second paragraph (p.14)	Although increased waste diversion is not able to fully satisfy the Problem Statement as a stand alone solution, it is an important aspect of waste disposal and will be brought forward as a consideration for integration into the final solution.	Replace with:  Regardless of the preferred solution identified in the EA, increased waste diversion will be considered for the proposed undertaking but will not constitute part of the undertaking.
Section 4.4, third page of Table 4.2 (p.19)	Alternative 2, Increased Waste Diversion; a) Technical Factors Section Rating b) Overall Rating	a) Indicated as “Not Preferred” though it should be indicated as “Preferred”. b) Indicated as “Partially Preferred” though it should be indicated as “Not Preferred” since it does not fully address the Problem Statement.
Section 5.1, third paragraph (p.20)	As also noted in Table 4.2, efforts to increase waste diversion (Alternative 2) will be considered in conjunction with Alternatives 4 and 6. Such efforts may reduce but are not expected to eliminate the need for waste disposal. Therefore Alternatives 4 and 6 are considered the two remaining Alternatives to the Undertaking.	Delete paragraph.
Section 5.1.1 (p.20 and 21)	Entire Section 5.1.1.	Delete Section 5.1.1
Section 5.1.2 (p.22), second paragraph	With respect to Alternative 2, Efforts to Increase Waste Diversion, data sources may include, but is not limited to, municipal waste management program information from sources such as:  <ul style="list-style-type: none"> <li>• Ontario Waste Management Association;</li> <li>• Recycling Council of Canada;</li> <li>• Canadian Composting Council;</li> <li>• Waste Diversion Ontario;</li> </ul>	Delete text

Location in ToR	Existing Text (if applicable)	Explanation, Revision or Additional Text
	<ul style="list-style-type: none"> <li>• Canadian Association of Recycling Industries;</li> <li>• Federation of Canadian Municipalities;</li> <li>• Association of Municipalities of Ontario;</li> <li>• Municipal Waste Association;</li> <li>• Industry magazines and similar publications; and</li> <li>• Direct contact with municipal and private sector waste management staff.</li> </ul>	
Section 5.4.1, first paragraph (p.26)	<p><i>Alternative Methods</i> are technically, economically and environmentally feasible ways of doing, or implementing, the same activity. Assuming that the preferred <i>Alternative to the Undertaking</i> is to expand the existing landfill, the <i>Alternative Methods</i> will include various design options associated with the expansion.</p>	<p><i>Alternative Methods</i> are technically, economically and environmentally feasible ways of doing, or implementing, the same activity. Assuming that the preferred <i>Alternative to the Undertaking</i> is to expand the existing landfill, the <i>Alternative Methods</i> will include various design options associated with the expansion. Increased waste diversion will be considered for the preferred <i>Alternative Method</i> but will not constitute part of the undertaking.</p>
Section 5.4.1, second paragraph (p.26)	"During the initial screening..."	Delete paragraph
Section 5.4.1, Table 5.3 (p.27)	[Table 5.3]	<ul style="list-style-type: none"> <li>• Delete Methods 4, 5, and 6;</li> <li>• Method 7 in the table will now be labelled as Method 4</li> </ul>

This errata letter is intended to supplement the ToR. As such, it will be posted along with the proposed ToR on the Town's (project) website. Should you have any questions or issues, please do not hesitate to contact the undersigned by email (dblake@town.stmarys.on.ca) or telephone (519-284-2340 ext. 209).

Sincerely,  
TOWN OF ST. MARYS



Dave Blake, C.E.T.  
Environmental Coordinator

c: James Hollingsworth, R.J. Burnside & Associates Limited  
Wesley Wright, Ministry of Environment  
Chad Papple, Operations Manager, Town of St. Marys



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**Proposed Terms of Reference  
St. Marys Future Solid Waste  
Disposal Needs  
Environmental Assessment  
(Amended)**

*Prepared By:*

---

R.J. Burnside & Associates Limited  
1465 Pickering Parkway Suite 200 Pickering ON L1V 7G7

*Prepared for:*

---

Town of St. Marys

December 2013

File No: 300032339

The material in this report reflects best judgement in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. R.J. Burnside & Associates Limited accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

## Record of Revisions

<b>Revision</b>	<b>Date</b>	<b>Description</b>
0	June 27, 2013	Initial Burnside Submission to Ministry of the Environment
1	Aug. 6, 2013	Revised Submission to Ministry of the Environment, incorporating internal Burnside edits.
2	Oct. 11, 2013	Revised Submission to Ministry of the Environment, addressing EASS comments on Revision 1.
3	Dec. 20, 2013	Revised Submission to Ministry of the Environment addressing comments received.

Note: See Section 1.2, describing the consultant history for this project.

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## 1.0 Introduction

This Proposed Terms of Reference (“TOR”) provides the framework for the preparation of an Individual Environmental Assessment (“EA”) being undertaken to review options to address the future waste disposal needs of the Town of St. Marys (herein referred to as the “Town”), located in southwestern Ontario, as shown on **Figure 1.1**.

The existing St. Marys landfill site (the “Site”), located at 1221 Water St. South, St. Marys, Ontario, operates under Environmental Compliance Approval (“ECA”) No. A150203 dated June 24, 2010. It has an approved capacity of 380,000 m<sup>3</sup> and receives post-diversion waste from within the Town of St. Marys. The 37 ha Site was part of a former clay pit that was used by St. Marys Cement in cement manufacturing and contains an approved fill area of 8 ha. The location of the Town and the existing landfill are illustrated on **Figure 1.2**. Site capacity (waste and daily cover) is consumed at a variable rate between approximately 9,800 and 17,300 m<sup>3</sup> per year, based on Site records for the past four years (ending 2012). There has been inconsistent waste generation and operational needs, especially cover placement requirements, resulting in the variability from year to year. Approximately 45,000 m<sup>3</sup> (or approximately 3.5 years) of capacity remain as of December 31, 2012.

For this EA process, we have averaged waste tonnage generation and used industry standards for waste density to determine long term disposal needs. As such, on the basis of current and projected municipal growth, and waste generation and waste diversion rates, the Town will require a solution that allows for the additional safe disposal capacity of approximately 708,000 m<sup>3</sup> of solid waste. This will be sufficient to ensure that the Town will have post-diversion municipal solid waste disposal capacity over a 40-year planning period.

Preparation of this TOR commenced in 2006 and included an initial public information open house on October 30, 2006 followed by another on December 3, 2009. The Town decided to put its EA process temporarily on hold while land ownership issues were resolved. The Site is now owned by the Town so the Town is now moving forward with its landfill capacity expansion environmental assessment and as such has resumed the TOR preparation process.

Since a number of Provincial EA-related guidelines have been approved and Ontario Regulation 101/07, the Waste Management Projects Regulation, made under the *Environmental Assessment Act* (“EA Act”), has been enacted since the commencement of the TOR process, the Town has updated its draft TOR to reflect those regulatory/policy changes. This TOR is, therefore, an amended version of the draft TOR originally circulated and presented to the public in 2006 and 2009. They reflect comments received from the public following those events and the results of a draft TOR

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circulation to the public, agencies, and Aboriginal communities in 2010. Other than a very minor increase in the Town's population, since the 2006 census, there have been no significant changes to the existing landfill or the condition/uses of lands in its vicinity.

The methodology described in this TOR reflects a process that will meet the requirements of the *Environmental Assessment Act* and Ontario Regulation 101/07, the Waste Management Projects Regulation, made under the *EA Act* and will address the post-diversion waste disposal needs and priorities of the Town over a 40-year planning period.

The EA proposed under this TOR will be prepared in accordance with sections 6(2)(a) and 6.1(3) of the *Environmental Assessment Act*. This TOR sets out in detail the requirements for preparation of the EA and have been prepared in accordance with and having regard for the following guidance documents:

- "Code of Practice - Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario" (MOE, October 2009)
- "Code of Practice - Preparing and Reviewing Environmental Assessments in Ontario" (MOE, October 2009)
- "Code of Practice - Consultation in Ontario's Environmental Assessment Process" (MOE, June 2007)
- "Federal/Provincial Environmental Assessment Coordination in Ontario - a Guide for Proponents and the Public" (Canadian Environmental Assessment Agency and MOE, June 2007)
- "Guide to Environmental Assessment Requirements for Waste Management Projects in Ontario" (MOE, March 2007)

During preparation of this TOR, the Town has consulted with the Ministry of the Environment ("MOE"), other federal and provincial government agencies, the public, Aboriginal communities and other interested persons.

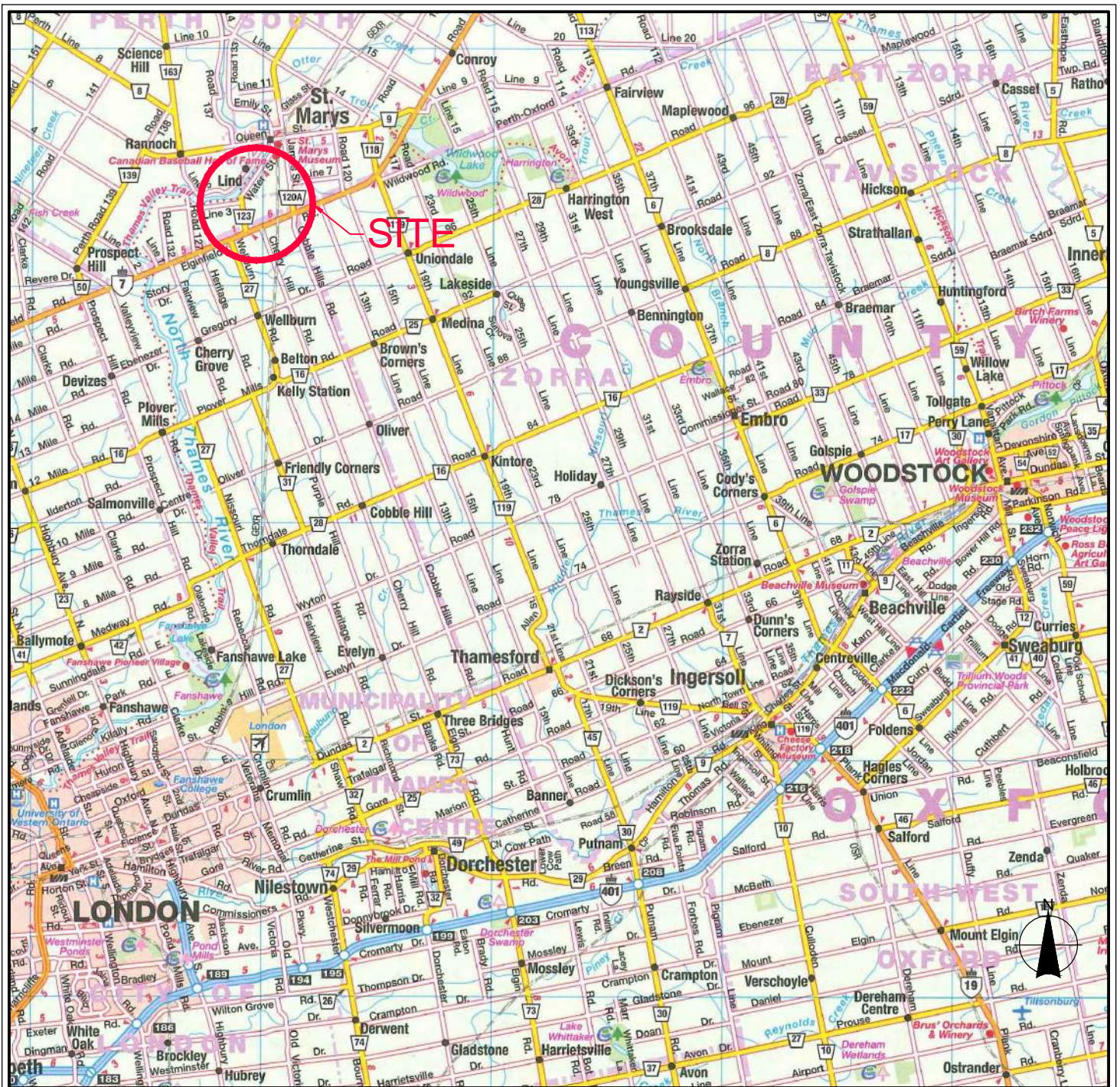
This TOR was approved by a resolution of the Council of the Town of St. Marys. As this TOR has been developed, it has been further reviewed and approved by the Town.


## **1.1 Proponent**

The proponent of the EA described in this TOR is the Corporation of the Town of St. Marys, which currently owns and operates the St. Marys landfill Site.

## **1.2 Proponent's Consultant**

Conestoga-Rovers & Associates Ltd. ("CRA") was retained by the Town to undertake the TOR process between 2006 and the early part of 2013. In March 2013 the Town retained R.J. Burnside & Associates ("Burnside") to finalize any remaining work on the TOR and complete the EA process. As such, portions of the information provided herein were prepared and provided by CRA.



			
Client			
<b>THE CORPORATION OF THE TOWN OF ST. MARYS</b>			
Figure Title			
<b>TOWN OF ST. MARYS TERMS OF REFERENCE SITE LOCATION PLAN</b>			
Drawn	Checked	Date	Figure No.
CD	TR	2013/09/24	<b>1.1</b>
Scale		Project No.	
N.T.S.		300032339	

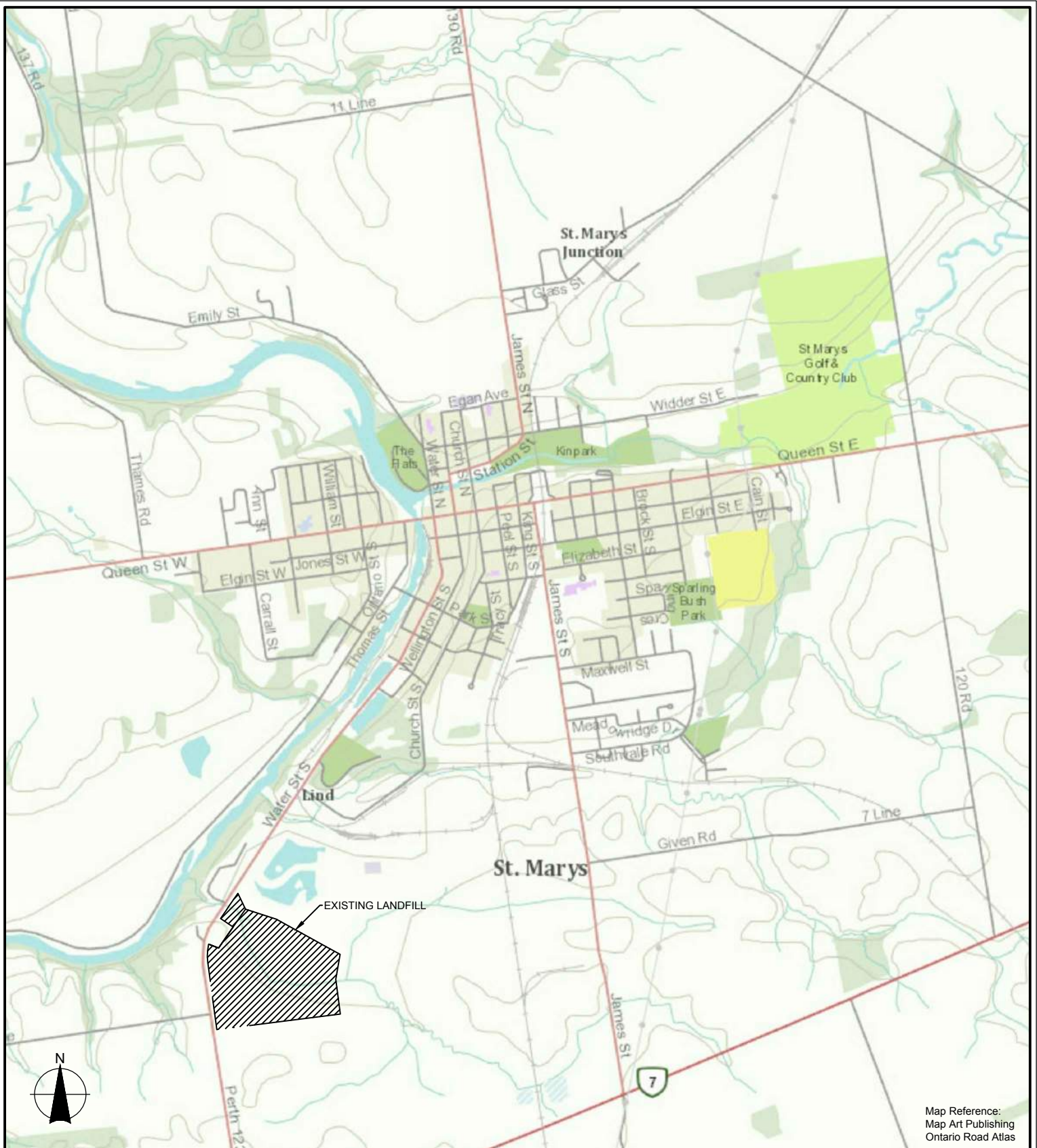


Figure Title  
**TOWN OF ST. MARYS - LANDFILL EA**  
REGIONAL PLAN

Client  
**THE CORPORATION OF THE  
TOWN OF ST. MARYS**

Drawn AE	Checked JRH	Date 13/06/25
Scale N.T.S.	Project No. 300032339	

Figure No.  
**1.2**

## **2.0 Description and Purpose of the Undertaking**

### **2.1 Current Conditions**

#### **2.1.1 Town Demographics**

The Town of St. Marys is a compact 12.48 km<sup>2</sup> urban centre with a 2011 census population of approximately 6,665 people. According to Statistics Canada, the Town's population in 1991 was 5,496. In 1996 it was 5,952; in 2001 it was 6,293; and in 2006 it was 6,620. Overall, the population growth in the Town has been approximately 21 percent over that 20-year period, or an average of approximately one percent per year. Located in southern Perth County and surrounded by the Township of Perth South, St. Marys is approximately 16 km southwest of Stratford and 25 km northeast of London. Founded in 1841, the Town is a traditional support and service centre for surrounding agricultural areas and has a full range of residential, commercial, industrial and institutional areas, facilities, and services.

#### **2.1.2 Existing St. Marys Landfill**

Historically the Town has provided waste disposal services for Town residents, businesses, and industries within the Town's boundaries. At least two closed landfill sites dating back to the early to mid-1900's are located in the Town.

The existing St. Marys landfill Site, located in the extreme southwest corner of the Town, was opened in 1984 on a 16.2 ha parcel of land leased from the adjacent St. Marys Cement Inc., a major industrial operation and employer in the Town. The Town finalized purchase of the Site in 2009. The Site serves as the sole waste disposal facility for the Town and, in the past decade, has been modified to introduce waste diversion facilities, including:

1. An area for the composting of leaf and yard waste.
2. A municipal hazardous and special waste ("MHSW") facility.
3. A waste transfer station for acceptance of e-waste, cardboard, scrap metal and blue box recycling materials.

The Site has about 3.5 years of remaining approved capacity, and, while the Town continues to aggressively pursue enhancements to its waste diversion programs, additional post-diversion waste disposal capacity will be required over the next 40 years in order for the Town to meet its waste management obligations to its residents.



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In 2012, a weigh scale was installed at the St. Marys Landfill and reported a total of 4,154 tonnes entering the site. Prior to 2012, the measurement of waste capacity utilization was based on the volume of waste placed on an annual basis. During the development of this TOR, the annual fill rates for the St. Marys Landfill were reviewed. The annual fill rates varied from year to year. Previous TOR efforts by CRA indicated that filling rates (volumetric) had been slightly increasing over time. The most recent annual fill rates, from 2009 through 2012 (inclusive), indicate a further increase in consumption of annual capacity.

Comparing the 2012 scale records against the measured (volumetric) fill rates indicate a waste in place density below the average expected for a facility with similar operational practices. This is likely a result of either an excess application of cover, or an insufficient level of compaction. The operational practices are currently undergoing a review in order to increase the operational efficiencies and make the best use of the remaining and proposed site's capacities. As a result of the analysis of current practices it was determined that the 2012 volumetric fill rate is not indicative of the Town's long term disposal needs. In order to more reasonably estimate disposal needs the fill rates from January 1, 2009 through December 31, 2012 were averaged, arriving at a value of 13,500 m<sup>3</sup> per year, as of the mid-point of the period, January 1, 2011.

It is generally accepted that there is a strong correlation between population and waste disposal. It was therefore assumed for planning purposes that the increase in the annual fill rate would be based on population growth. Thus, as discussed in Section 2.1.1, a one percent (1%) increase in annual waste disposal needs was assumed.

Based on the typical timeline for an EA process, it is assumed that filling of a newly constructed site will commence in 2017. Using a fill rate of 13,500 m<sup>3</sup>/year as of January 1, 2011, increasing at one percent per year, and extending that to the end of each calendar year (i.e., Dec. 31) results in estimated annual fill rates of:

- 14,474 m<sup>3</sup> in 2017 (year 1)
- 15,988 m<sup>3</sup> in 2027 (year 11)
- 17,661 m<sup>3</sup> in 2037 (year 21)
- 19,509 m<sup>3</sup> in 2047 (year 31)
- 21,396 m<sup>3</sup> in 2056 (year 40)

Overall for the 40 year planning period of this EA, the Town will require 708,000 m<sup>3</sup> of additional disposal capacity, as described in Section 1.0.

The annual fill rate, annual waste disposal tonnage, and population projection will be reassessed as part of the EA. This may result in the proposed landfill capacity, the planning period or both being adjusted to reflect future estimates/requirements.

### 2.1.3 Current Waste Diversion

The Town of St. Marys is a member of the Bluewater Recycling Association (“BRA”), a non-profit organization based in southwestern Ontario with 20 municipal members consisting of some 150,000 people in 70,000 households. BRA collects recyclable materials within the Town and transports them to its processing facility located in Huron Park (about 28 km west of St. Marys) for sorting, processing and sale. The facility employs approximately 68 staff and processes approximately 30,000 tonnes of recyclable materials/year.

The Town has a Waste Management By-law (By-law No. 2012-71) governing the establishment and maintenance of a system for the collection of garbage, yard waste, recyclable materials and the disposal of waste in the Town's landfill site. As a member of BRA, the Town of St. Marys operates a comprehensive waste diversion program for Town residents consisting of several key components, including:

- An automated, user-pay, curbside collection system.
- Residential blue box and blue "wheelie" recycling bins.
- Weekly collection of paper (e.g., newspapers, magazines, pizza boxes, cereal boxes, flyers, egg cartons, paper towel rolls and telephone books); glass (e.g., clear and coloured glass food and beverage containers with lids and/or labels); plastic (e.g., wide mouth tubs and rigid screw-top containers, grocery and retail bags); and metal (e.g., aluminum and steel beverage and food cans, empty aerosol containers and empty paint cans, all metal lids).
- Curbside yard waste collection for five (5) weeks in the spring and five weeks in the fall of each year. Drop-off at the yard waste composting area (at the landfill site) is available year-round.
- Municipal special and household hazardous waste (“MHSW”) depot at the landfill site is open to public for free drop-off four days/week (e.g., acids, automobile batteries, waste oils, compressed gas cylinders, herbicides, aerosols and e-waste), in partnership with the ORANGEDROP program.
- Backyard composting (periodic discounts to Town residents on purchase of back yard composters).
- In 2005, the Town initiated an e-waste collection program for landfill diversion, thereby banning the disposal of electronic equipment (“e-waste”) in the landfill site.

During 2011, the Town collected approximately 20.49 tonnes of e-waste, 11,580 litres of MHSW liquid waste, 130 kg of aerosol cans, 3,248 feet of fluorescent tubes, 202 CFL bulbs, and 15 HID bulbs.

The Town is committed to maintaining and expanding its waste diversion program to the extent possible. The benefits of that ongoing commitment include the reduction of the amount of post-diversion waste requiring disposal at its landfill site (with the resulting extension in the life of the site) and the reduction of undesirable materials, such as MHSW, going into the landfill for disposal.

Additional waste diversion efforts are expected to be reviewed and implemented by the Town during the 40 year planning period being considered under this EA process.

## **2.2 Problem Statement**

The Town of St. Marys must identify a solution that addresses the Town's post-diversion municipal solid waste disposal needs over a 40 year planning period in a technically and economically feasible manner while minimizing impacts to the environment.

## **2.3 Description of the Undertaking**

The Undertaking will include the proposed changes that are made to address the Town's future municipal waste disposal needs. The Undertaking will need to address the Problem Statement defined above. The nature of the Undertaking will be refined as the EA progresses.

### 3.0 The Environmental Assessment Process

In Ontario, waste management projects are governed by O. Reg. 101/07, known as the Waste Management Projects Regulation. According to Part II of the regulation, any new landfill site with a capacity over 100,000 m<sup>3</sup> or any changes to an existing landfill site that result in additional volume over 100,000 m<sup>3</sup> is subject to Part II of the *Ontario Environmental Assessment Act*, and, as such, is required to undergo an Individual Environmental Assessment (“EA”).

There are several means by which the Town may address the Problem Statement. Several of those possible solutions, or “Alternatives”, meet the requirements for an Individual EA, as described above. Other Alternatives are considered to have effects that are better understood and more easily addressed. These Alternatives can be assessed under a more streamlined approach. At this time, the preferred solution to the Problem Statement is not yet known. As such, the Town has elected to undertake this study as an Individual EA. As the assessment progresses, the scope of, and need for, the EA may change.

At this time, it is intended that the EA will be completed under sections 6(2)(a) and 6.1(2) of the *EA Act*. As such, the EA will include the following (note, italicized text is taken directly from the Act):

- *A description of the purpose of the undertaking;*
- *A description and statement of the rationale for the proposed undertaking, alternatives to the undertaking, and alternative methods for carrying out the undertaking;*
- *A description of:*
  - *The environment that will be affected or that might reasonably be expected to be affected, directly or indirectly,*
  - *The effects that will be caused or that might reasonably be expected to be caused to the environment, and*
  - *The actions necessary or that may reasonably be expected to be necessary to prevent, change, mitigate or remedy the effects upon or the effects that might reasonably be expected upon the environment by the undertaking, the alternative methods of carrying out the undertaking and the alternatives to the undertaking;*
- *An evaluation of the advantages and disadvantages to the environment of the undertaking, the alternative methods of carrying out the undertaking and the alternatives to the undertaking; and,*
- *A description of the consultation undertaken by the proponent and the results of the consultation.*

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Individual EAs are completed in two stages, the first of which includes preparation of the TOR. This TOR documents the process by which the EA will be completed.

Regardless of the above, Section 6.1(3) of the EA Act states that the EA may consist of information other than the generic requirements listed above. This section is applicable in cases where one or more studies have occurred prior to initiating the EA process and proponents have proceeded through some of the initial stages of the project planning process. In such cases certain components listed under Section 6.1(2) may have already been completed and an EA with a narrower scope, commonly referred to as a “focused EA” may be more appropriate.

In this case, the Town of St. Marys has undertaken some initial planning work prior to commencement of the EA. Work included a pre-screening of the *Alternatives to the Undertaking*. This work has been refined during the TOR process and is summarized in Section 4.0.

Therefore, the Town of St. Marys intends to complete a focussed EA in accordance with Section 6.1(3) of the EA Act. All of the requirements of Section 6.1(2) of the Act will be included in the EA. The only exception is that the *Alternatives to the Undertaking* will be subject to a pre-screening exercise which is summarized in this TOR.

### **3.1 Justification for a Focused Environmental Assessment**

A focussed EA under Section 6.1(3) of the EA Act is appropriate in this case because:

- a significant amount of information is known about the particular environmental, social, and economic conditions within the Town of St. Marys such that a number of Alternatives can be ruled out; and,
- substantial work has previously been undertaken to analyze and assess various options for waste disposal.

This background information was used to screen *Alternatives to the Undertaking* outside of the EA process. In order to ensure appropriate transparency of this work, all analyses are summarized in Section 4.0 and Appendices C and D.

## 4.0 Initial Screening of Alternatives to the Undertaking

According to the *Code of Practice for Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario* (MOE, 2009, pg. 16):

*“Where appropriate, proponents may undertake an initial screening of alternatives before or at the terms of reference stage to determine the range of alternatives which will be examined in the environmental assessment.”*

As previously noted, this pre-screening is permitted under Section 6.1(3) of the EA Act, which allows for a focused EA. This section of the TOR summarizes all pre-planning and screening work undertaken by the Town.

### 4.1 Alternatives to the Undertaking

During early stages of the TOR development, several *Alternatives to the Undertaking* were identified, as summarized in **Table 4.1**.

**Table 4.1. Alternatives to the Undertaking**

Alternative		Description
1	Do Nothing	This Alternative must be considered as a requirement of the <i>EA Act</i> . It represents the result if no action was taken and serves as a baseline against which other Alternatives can be compared.
2	Enhanced Waste Diversion	This involves increasing the percentage of recyclable and compostable waste that is diverted from the landfill to a recycling or composting facility for re-use. More diverted waste means less waste entering the landfill. With current technology and economic conditions, not all waste can be diverted and some additional means to manage post-diversion waste is still required.
3	Energy From Waste	Thermal technology is available which can be used to treat waste and generate electricity. Under this Alternative, a thermal treatment plant would be constructed with post-diversion waste from the Town combusted to create energy.
4	Export of Waste to Another Jurisdiction	This Alternative would see the decommissioning of the existing St. Marys landfill and subsequent transport of waste to another landfill in a jurisdiction outside of the Town. A transfer facility may be

Alternative		Description
		required in St. Marys.
5	Landfilling at a New Landfill Site in St. Marys	The existing landfill in St. Marys could be decommissioned and a new site within the Town limits could be developed to accept municipal waste.
6	Landfilling at an Expansion of the Existing Landfill Site in St. Marys	This Alternative involves the expansion of the existing landfill to allow it to accept additional waste beyond its current capacity.

## 4.2 Pre-Planning Work

Several studies and analyses have been undertaken that provide relevant and critical details about several of the Alternatives listed in **Table 4.1**.

Specifically, the following analyses have been completed:

- An assessment of the financial viability of a thermal treatment plant based on the quantities of waste produced in the Town, which has relevance to Alternative 3;
- A landfill sizing exercise to estimate the property area required to accommodate the quantity of waste expected to be generated over the next 40 years, which has relevance to Alternatives 5 and 6; and,
- A constraints analysis to identify potential sites for a new landfill within the Town's limits, which has relevance to Alternative 5.

Through these analyses it was determined that:

- A thermal treatment plant would not be economically feasible, given the limited quantity of waste generated by the Town; and,
- There is no suitable alternative site for a new landfill within the Town limits, based on the size (area) of land required and regulated constraints regarding where a landfill may be sited.

This information was used in the screening process, described below.

Copies of the detailed analyses are provided in Appendices C and D.

### 4.3 Screening Methodology

The *Alternatives to the Undertaking*, identified in **Table 4.1**, were subject to a qualitative screening based on criteria that are generally described by the following headings:

- Natural Environment;
- Socio-Economic Factors;
- Financial Factors;
- Technical Factors; and,
- Whether the Alternative Addresses the Problem Statement.

**Table 4.2** provides this evaluation in a summary form.

### 4.4 Screening Results

Results of the screening are presented in **Table 4.2**. The alternatives which did not address the Problem Statement were eliminated and will not be carried forward in the EA. Therefore, the EA to be prepared under this TOR will examine only those *Alternatives To* which have passed the initial screening. Those *Alternatives To* are:

- exporting waste to another jurisdiction; or
- expanding the existing St. Marys landfill site.

Although increased waste diversion is not able to fully satisfy the Problem Statement as a stand-alone solution, it is an important aspect of waste disposal and will be brought forward as a consideration for integration into the final solution.



**Table 4.2. Preliminary Screening of Alternatives To the Undertaking**

Criteria for Evaluating Alternatives	Alternatives To the Undertaking					
	1 - Do Nothing	2 – Increased Waste Diversion	3 – Energy From Waste	4 – Export Waste to Another Jurisdiction	5- New Landfill Site in St. Marys	6- Expand Existing St. Marys Landfill
<b>A Natural Environment</b>						
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>Odour could become a problem if the current waste capacity of the landfill is exceeded and no new plan to address additional waste is identified.</li> </ul>	<ul style="list-style-type: none"> <li>No change in air quality anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>No changes in air quality as long as technology is appropriate to deal with air emissions and all permitting conditions are met.</li> <li>Evolving standards (i.e., PM2.5) could restrict implementation.</li> </ul>	<ul style="list-style-type: none"> <li>May result in slightly decreased air quality as a result of increased truck traffic to haul waste to another jurisdiction.</li> </ul>	<ul style="list-style-type: none"> <li>May change local air quality immediately surrounding the new site (e.g. slight increase in odour).</li> </ul>	<ul style="list-style-type: none"> <li>No change in air quality anticipated.</li> </ul>
<b>Aquifer Quality</b>	<ul style="list-style-type: none"> <li>Not addressing the waste problem could lead to illegal dumping or over capacity of the current landfill which could lead to leaching and impacts to aquifer quality.</li> </ul>	<ul style="list-style-type: none"> <li>No change in aquifer quality anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>No change in aquifer quality anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>No change in aquifer quality anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>Groundwater conditions at a new site would need to be studied to ensure that the appropriate design and technology was utilized to minimize impacts to groundwater.</li> </ul>	<ul style="list-style-type: none"> <li>No change in aquifer quality anticipated. Current leachate collection system will continue to be used and/or increased/improved.</li> </ul>
<b>Terrestrial/Aquatic Habitat</b>	<ul style="list-style-type: none"> <li>Not addressing the waste problem could lead to illegal dumping or over capacity of the current landfill which could lead to surface water runoff into local wooded areas or watercourses.</li> <li>Illegal dumping in neighbouring jurisdictions is likely.</li> </ul>	<ul style="list-style-type: none"> <li>No change in terrestrial/aquatic habitat anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>No change in terrestrial/aquatic habitat anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>No change in terrestrial/aquatic habitat anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>A new site could result in impacts to terrestrial or aquatic habitat depending on the site selected and facility design.</li> </ul>	<ul style="list-style-type: none"> <li>May be impacts to woodlands surrounding the existing site if expanded footprint is required.</li> <li>Significance and sensitivity of woodlands is currently unknown.</li> <li>Possible to improve existing landfill site through additional efforts applied at the expanded site.</li> </ul>
<b>SECTION RATING</b>	<b>Not Preferred</b>	<b>Most Preferred</b>	<b>Partially Preferred</b>	<b>Partially Preferred</b>	<b>Partially Preferred</b>	<b>Partially Preferred</b>

Criteria for Evaluating Alternatives	Alternatives To the Undertaking					
	1 - Do Nothing	2 – Increased Waste Diversion	3 – Energy From Waste	4 – Export Waste to Another Jurisdiction	5- New Landfill Site in St. Marys	6- Expand Existing St. Marys Landfill
<b>B Socio – Economic Factors</b>						
<b>Conformity to Municipal Land Use, Policies and Planning</b>	<ul style="list-style-type: none"> <li>No changes to zoning are required; however, illegal dumping of excess waste may lead to dumping in areas not properly zoned to manage waste.</li> </ul>	<ul style="list-style-type: none"> <li>Conforms to municipal plans and policies.</li> </ul>	<ul style="list-style-type: none"> <li>There is currently no zone in the Town which specifically permits waste from energy facilities. Zoning amendment may be required</li> </ul>	<ul style="list-style-type: none"> <li>Care would need to be taken to ensure waste is taken to an approved facility that is zoned appropriately in the receiving jurisdiction.</li> </ul>	<ul style="list-style-type: none"> <li>New site would need to be selected that is not adjacent to any sensitive or incompatible land uses.</li> <li>Zoning amendment would be required to allow the new site to house waste.</li> </ul>	<ul style="list-style-type: none"> <li>Conforms to existing zoning at the site.</li> </ul>
<b>Impact to Local Business and Industry</b>	<ul style="list-style-type: none"> <li>Negative impact to local businesses that will no longer have a means of dealing with the waste they create. May mean loss of local businesses.</li> </ul>	<ul style="list-style-type: none"> <li>May require local businesses to spend more time and effort on waste sorting. Compliance could be a problem.</li> </ul>	<ul style="list-style-type: none"> <li>No impact on local businesses or industries.</li> </ul>	<ul style="list-style-type: none"> <li>No impact on local businesses or industries from a disposal method standpoint.</li> <li>Could increase disposal costs for local businesses, depending on costs:</li> <li>Tipping fee for disposal facility.</li> <li>Transfer station costs.</li> <li>Haulage costs.</li> </ul>	<ul style="list-style-type: none"> <li>No impact on local businesses or industries.</li> </ul>	<ul style="list-style-type: none"> <li>No impact on local businesses or industries.</li> </ul>
<b>Nuisance Impacts (noise, traffic, aesthetics, disruption during construction)</b>	<ul style="list-style-type: none"> <li>Nuisance impacts from illegal dumping may become prevalent if there is no legal means to manage waste.</li> </ul>	<ul style="list-style-type: none"> <li>No nuisance impacts anticipated.</li> </ul>	<ul style="list-style-type: none"> <li>May be noise or odour issues from the plant if appropriate technology is not selected or if plant is not operated or maintained correctly.</li> <li>Permitting conditions to limit noise and air emissions will need to be met.</li> <li>Site would need new haulage routes, changing the traffic impacts vs. existing landfill.</li> </ul>	<ul style="list-style-type: none"> <li>Marginally increased traffic as a result of waste hauling to another jurisdiction.</li> </ul>	<ul style="list-style-type: none"> <li>Could be moderate to significant local disruption as result of traffic, noise, dust etc. during construction.</li> <li>New site would need new haulage routes, changing the traffic impacts vs. existing landfill.</li> </ul>	<ul style="list-style-type: none"> <li>Could be some nuisance impacts during the expansion but expected to be less than for construction of a new facility.</li> </ul>

Criteria for Evaluating Alternatives	Alternatives To the Undertaking					
	1 - Do Nothing	2 – Increased Waste Diversion	3 – Energy From Waste	4 – Export Waste to Another Jurisdiction	5- New Landfill Site in St. Marys	6- Expand Existing St. Marys Landfill
<b>Quality of Service</b>	<ul style="list-style-type: none"> <li>Will result in poor quality of service if waste is continued to be generated with no place to manage it, once the current allowable landfill capacity is exceeded.</li> </ul>	<ul style="list-style-type: none"> <li>Improved service to recycling industries if they are provided with more recyclable materials to process.</li> <li>May be reduced service to individuals and businesses if they are asked to undertake more responsibility for sorting.</li> <li>Increased complexity of source separation may discourage correct use, resulting in additional waste for disposal.</li> </ul>	<ul style="list-style-type: none"> <li>No change in quality of service expected.</li> </ul>	<ul style="list-style-type: none"> <li>Service may be subject to the conditions of the receiving municipality and facility.</li> <li>Type of waste accepted at the receiving facility may be different than the current St. Marys landfill.</li> </ul>	<ul style="list-style-type: none"> <li>Quality of service not expected to change.</li> <li>Service standard would continue to be set by the Town.</li> </ul>	<ul style="list-style-type: none"> <li>Quality of service not expected to change.</li> <li>Service standard would continue to be set by the Town.</li> </ul>
<b>Land Requirements</b>	<ul style="list-style-type: none"> <li>No new land requirements involved.</li> </ul>	<ul style="list-style-type: none"> <li>May require more land and resources to further sort waste.</li> <li>Current Bluewater Recycling Association (or other private MRF) may require expansion to accept additional materials.</li> </ul>	<ul style="list-style-type: none"> <li>Will require lands to house the thermal treatment facility.</li> </ul>	<ul style="list-style-type: none"> <li>May require a new transfer facility in St. Marys.</li> </ul>	<ul style="list-style-type: none"> <li>New site would require approximately 20 ha to meet the Town's landfill needs for the next 40 years.</li> <li>No such site available in St. Marys. See Appendix D.</li> </ul>	<ul style="list-style-type: none"> <li>The current site footprint would need to be expanded by approximately 6.7 ha to meet the Town's landfill needs for the next 40 years (assumes area expansion, not vertical).</li> </ul>
<b>SECTION RATING</b>	<b>Not Preferred</b>	<b>Partially Preferred</b>	<b>Partially Preferred</b>	<b>Partially Preferred</b>	<b>Not Preferred</b>	<b>Partially Preferred</b>
<b>C Financial Factors</b>						
<b>Relative Capital Costs</b>	<ul style="list-style-type: none"> <li>No capital costs involved.</li> </ul>	<ul style="list-style-type: none"> <li>Relatively low.</li> <li>May be costs if recycling facilities can't handle the increased quantity of recyclable materials.</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs high to purchase technology and construct the facility.</li> </ul>	<ul style="list-style-type: none"> <li>Moderate capital costs to prepare a transfer site.</li> <li>Trucking costs</li> </ul>	<ul style="list-style-type: none"> <li>High capital costs to construct new landfill site and supporting structures/facilities with all necessary technology to meet permitting requirements.</li> </ul>	<ul style="list-style-type: none"> <li>Moderate capital costs to expand the existing site. Many of the same structures (e.g. leachate sewer/treatment, scale house, scale, public drop-off area, etc.) can continue to be used.</li> </ul>

Criteria for Evaluating Alternatives	Alternatives To the Undertaking					
	1 - Do Nothing	2 – Increased Waste Diversion	3 – Energy From Waste	4 – Export Waste to Another Jurisdiction	5- New Landfill Site in St. Marys	6- Expand Existing St. Marys Landfill
<b>Relative Operation and Maintenance Cost</b>	<ul style="list-style-type: none"> <li>Operation and maintenance costs will increase from the current status quo once the existing landfill capacity is reached. If the current permitted capacity is exceeded there will be costs associated with the permit violation and work required to manage the excess waste that will continue to flow to the site.</li> </ul>	<ul style="list-style-type: none"> <li>Slightly increased costs related to further waste sorting and processing.</li> </ul>	<ul style="list-style-type: none"> <li>To cover costs, it is estimated that a minimum of 100,000 tonnes per year of waste must be processed at the facility.</li> <li>St. Marys typically generates approximately 5,000 tonnes of waste per year.</li> <li>The facility would operate at a significant loss if no additional sources of waste were found.</li> </ul>	<ul style="list-style-type: none"> <li>Costs subject to the selected jurisdiction/facility and transportation process.</li> <li>Costs may be subject to renegotiation every three to five years, therefore long terms costs are difficult to predict.</li> </ul>	<ul style="list-style-type: none"> <li>Operational costs similar to current operations.</li> <li>May be lower maintenance costs at a new facility with most up-to-date design and technology than at the current, older site.</li> </ul>	<ul style="list-style-type: none"> <li>Operational costs similar to current operations.</li> </ul>
<b>SECTION RATING</b>	<b>Not Preferred</b>	<b>Most Preferred</b>	<b>Not Preferred</b>	<b>Partially Preferred</b>	<b>Partially Preferred</b>	<b>Partially Preferred</b>
<b>D Technical Factors</b>						
<b>Known/Proven Technology</b>	<ul style="list-style-type: none"> <li>No technology involved.</li> </ul>	<ul style="list-style-type: none"> <li>Recycling technology is well known and proven.</li> <li>Some recyclable materials are more valuable/more efficient to recycle than others.</li> <li>Not all waste can be recycled so does not fully address the Town's waste disposal needs.</li> </ul>	<ul style="list-style-type: none"> <li>Proven technology is available to generate energy from large quantities of waste; however efficient technology does not exist for smaller quantities of waste in the range of what is produced by the Town.</li> </ul>	<ul style="list-style-type: none"> <li>No new technology will be involved.</li> </ul>	<ul style="list-style-type: none"> <li>New site could be designed with the latest technology for liner, leachate collection and odour reduction systems.</li> </ul>	<ul style="list-style-type: none"> <li>Expanded site would take advantage of existing facilities and technology (e.g. existing leachate collection system).</li> <li>Standard technology to be used. Some upgrades from the current site may be possible.</li> </ul>

Criteria for Evaluating Alternatives	Alternatives To the Undertaking					
	1 - Do Nothing	2 – Increased Waste Diversion	3 – Energy From Waste	4 – Export Waste to Another Jurisdiction	5- New Landfill Site in St. Marys	6- Expand Existing St. Marys Landfill
<b>External Approvals/Agreements</b>	<ul style="list-style-type: none"> <li>The existing landfill ECA's approved capacity will be reached.</li> <li>The Town will be in violation of the ECA if filling proceeds beyond approved capacity.</li> </ul>	<ul style="list-style-type: none"> <li>No additional permits required.</li> </ul>	<ul style="list-style-type: none"> <li>Multiple permits would be required, including building permits, ECA for air emissions, water for cooling etc.</li> </ul>	<ul style="list-style-type: none"> <li>Contract will be required with the receiving facility/jurisdiction.</li> <li>Receiving municipality may need to amend their ECA to allow waste from St. Marys.</li> <li>St. Marys may need to obtain an ECA permit for a transfer facility.</li> </ul>	<ul style="list-style-type: none"> <li>ECA required for new site as well as zoning amendment, building permits etc.</li> </ul>	<ul style="list-style-type: none"> <li>ECA is required to allow additional capacity at the current site.</li> </ul>
<b>SECTION RATING</b>	<b>Not Preferred</b>	<b>Not Preferred</b>	<b>Not Preferred</b>	<b>Partially Preferred</b>	<b>Partially Preferred</b>	<b>Partially Preferred</b>
<b>Addresses Problem Statement</b>	<ul style="list-style-type: none"> <li>Does not address problem statement.</li> </ul>	<ul style="list-style-type: none"> <li>Does not fully address problem statement:                             <ul style="list-style-type: none"> <li>enhanced diversion alone will not be sufficient to meet the Town's requirements</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Does not address problem statement:                             <ul style="list-style-type: none"> <li>the technology has not been demonstrated at the appropriate size for the Town,</li> <li>EFW alone does not meet the Town's requirements, and</li> <li>EFW is cost prohibitive to implement for the Town.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Addresses problem statement. Further evaluation required.</li> </ul>	<ul style="list-style-type: none"> <li>Addresses problem statement.</li> <li>No available lands to accommodate such a site.</li> </ul>	<ul style="list-style-type: none"> <li>Addresses problem statement. Further evaluation required.</li> </ul>
<b>OVERALL RATING</b>	<b>Not Preferred</b>	<b>Partially Preferred</b>	<b>Not Preferred</b>	<b>Preferred</b>	<b>Not Preferred</b>	<b>Preferred</b>

## 5.0 EA Methodology

The EA will be undertaken in a multi-phase process, as follows:

- Phase 1: Complete the Evaluation of *Alternatives to the Undertaking*;
- Phase 2: Reassess the EA Requirements;
- Phase 3: Redefine the Purpose and Rationale for the Undertaking;
- Phase 4: Define the Parameters of the Study;
- Phase 5: Evaluate *Alternative Methods* for Carrying Out the Undertaking; and,
- Phase 6: Prepare and Submit EA Documentation.

All phases will be clearly documented. Public, Aboriginal and agency consultation will be ongoing throughout all six phases with this consultation also documented.

The process is described in the following sections and summarized in **Figure 5.1**.

### 5.1 Phase 1: Complete the Evaluation of *Alternatives to the Undertaking*

As discussed in Section 4.0, *Alternatives to the Undertaking* were identified and subjected to a preliminary screening process early in the TOR preparation process. This eliminated from further consideration those "Alternatives To" that do not address the Problem Statement.

The EA process will involve a further, more detailed assessment of the remaining Alternatives To, which include:

- Alternative 4: Export of waste to another jurisdiction; and,
- Alternative 6: Expand the existing landfill.

As also noted in Table 4.2, efforts to increase waste diversion (Alternative 2) will be considered in conjunction with Alternatives 4 and 6. Such efforts may reduce but are not expected to eliminate the need for waste disposal. Therefore Alternatives 4 and 6 are considered the two remaining *Alternatives to the Undertaking*.

#### 5.1.1 Incorporation of Alternative 2; Efforts to Increase Waste Diversion

The Town of St. Marys have already implemented a number of waste minimization and diversion techniques as discussed in Section 2.1.3. A review of these techniques will be completed to determine if there are ways to improve the resulting diversion. The EA will also look at techniques employed in other Ontario municipalities of similar size to see if additional methods could be applicable to St. Marys. The EA will evaluate these

potential improved techniques and additional methods of waste diversion against the Problem Statement, that is; is it affordable, technically feasible and does it minimize impacts to the environment. This is described in Section 5.1.2

As a second step, the impact of the improved technique or additional method will be judged by how it modifies the suitability of the remaining *Alternatives to the Undertaking*. As an example, adding a new material to the Town's existing Blue Box program may result in a small additional percentage of waste diversion. In terms of waste export, the environmental impacts of diverting that material may be negligible. In terms of landfilling, the same material may easily be blown during landfilling operations, leading to occasional litter control problems. In this example, and assuming no other impacts occur, it may only make sense to divert this new material if landfilling is the preferred *Alternative To*. Conversely, if waste export is preferred, then the Blue Box improvement may not be recommended for implementation.

### **5.1.2 Methodology for Evaluating the *Alternatives to the Undertaking***

The *Alternatives to the Undertaking* will be subject to a qualitative screening based on the following criteria:

- Natural Environment, including:
  - Atmosphere (air quality, odour, noise etc.);
  - Geology and hydrogeology;
  - Surface water (quality and quantity); and,
  - Biology (terrestrial, aquatic).
- Cultural Environment, including:
  - Archaeological resources;
  - Heritage structures; and,
  - Heritage landscapes.
- Socio-Economic Environment:
  - Transportation routes;
  - Land use;
  - Employment effects;
  - Economic conditions (local business with a direct link to the landfill or its operations); and,
  - Aesthetics/ Enjoyment of life.
- Aboriginal Connections to the Land:
  - Traditional uses;
  - Historical uses;
  - Land claims/ treaty rights/Aboriginal rights; and,
  - Other areas of interest.
- Financial Factors:

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- Capital costs; and
- Operational and maintenance costs.
- Technical Factors:
  - Technical ability to carry out each alternative.

The assessment will primarily be qualitative, based on information from existing data sources or from information to be gathered through a short survey.

With respect to Alternative 2, Efforts to Increase Waste Diversion, data sources may include, but is not limited to, municipal waste management program information from sources such as:

- Ontario Waste Management Association;
- Recycling Council of Canada;
- Canadian Composting Council;
- Waste Diversion Ontario;
- Canadian Association of Recycling Industries;
- Federation of Canadian Municipalities;
- Association of Municipalities of Ontario;
- Municipal Waste Association;
- Industry magazines and similar publications; and
- Direct contact with municipal and private sector waste management staff.

With respect to Alternative 6, Expansion of the Existing Landfill, data sources will include, but will not be limited to:

- Official Plan documents;
- Background air, surface and groundwater quality reports, studies and previous monitoring results;
- Various operational and technical reports documenting existing landfill operations;
- Complaints history;
- Employment records;
- Statistics Canada data sets; and,
- Other sources as identified during the assessment process.

With respect to Alternative 4, Export Waste to Another Jurisdiction, data will primarily be derived from a survey to be administered to the operators of a number of potential waste disposal facilities, expected to be mainly landfills, which may be able to accept the Town's waste. This data will then be combined with an evaluation of the costs and potential impacts for the transfer and transporting of the waste from the Town to the various disposal facilities. Solid Waste Industry (including transportation) source data



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will inform the evaluation. A matrix of the potential disposal facilities and all of the associated variables related to each facility (i.e., time/distance, cost, impacts,) will be created to rank the various alternative facilities. Because some disposal facilities will be closer to St. Marys than others, or some facilities may have some environmental benefit compared to others, an average of the facility rankings will be used to determine the overall impacts of the Alternative for comparison with the Landfill Expansion (Alternative 6).

The survey will request information such as:

- Disposal costs;
- Contractual arrangements, including the ability to coordinate disposal efforts between municipalities located within the same geographical area or upper tier jurisdiction;
- Available capacity;
- Current ECA or other restrictions limiting from where the landfill can accept waste; and,
- Any other criteria deemed appropriate to the evaluation.

Potential receiving landfills to be surveyed include those identified in **Table 5.1**.

Other relevant information will be derived through mapping exercises and professional opinion with respect to operational procedures, such as:

- Distance from St. Marys and potential haul routes;
- Need for a transfer station in St. Marys; and,
- Other factors to be determined as the study progresses.

**Table 5.1. Alternative Disposal Locations for Receiving Waste from St. Marys**

Landfill	Owner	Location
Green Lane Landfill	City of Toronto	Part Lots 21, 22 and 23, Concession 3, N of HWY 401, Southwold Township
Twin Creeks Landfill	Waste Management Inc.	8039 Zion Line, Watford
Carleton Farms Landfill	Republic Services Inc.	Sumpter Township, Michigan, USA
Mitchell Domestic Landfill	Municipality of West Perth	125 Clarke St., Mitchell
Logan Landfill	Municipality of West Perth	South ¼ of Lot 20, Concession 12, (Geographic Township of Logan) West Perth

Landfill	Owner	Location
Blanshard Landfill	Township of Perth South	1591 Perth Road 139, Perth South
Southwestern Landfill (Proposed landfill, now undergoing EA process)	Walker Environmental Group Inc.	374681 37 <sup>th</sup> Line (Oxford County Rd. 6), Zorra Township
Others which may be identified during the EA process.	TBD	TBD

Once background information is collected and reviewed, the two *Alternatives* will be compared. The comparison will identify potential impacts and cumulative impacts resulting from each of the Alternatives under the above headings. Potential and cumulative impacts will be described according to their magnitude, frequency, duration and reversibility. The Preferred Alternative will then be selected based on public, Aboriginal and agency comments and professional judgement as to which Alternative is likely to result in fewer long term, higher magnitude and irreversible impacts. At the conclusion of the assessment a Preferred *Alternative to the Undertaking* will be identified.

## 5.2 Phase 2: Re-Assess the EA Requirements

Depending on the Preferred *Alternative to the Undertaking*, the Individual EA process may continue, it may be halted or it may trigger an alternate environmental approval process. Possible outcomes are summarized in **Table 5.2**.

**Table 5.2: Possible Outcomes of the Assessment of *Alternatives to the Undertaking***

Preferred Alternative Selected	Implications for EA Process
If Alternative 4, Export to Another Jurisdiction, is selected as the Preferred <i>Alternative to the Undertaking</i> ....	<ul style="list-style-type: none"> <li>• The current Individual EA process will be halted.</li> <li>• A new Individual EA process may be initiated with a focus on the receiving landfill, if the transfer of waste from St. Marys would result in an increase of 100,000 m<sup>3</sup> of waste more than the current authorized limit for the receiving landfill; or,</li> <li>• An Environmental Screening process may be initiated under the Waste Management Regulation, 101/07, with a focus on the receiving landfill if the transfer of waste from St. Marys would: <ul style="list-style-type: none"> <li>– Increase the volume of waste at the</li> </ul> </li> </ul>

Preferred Alternative Selected	Implications for EA Process
	<p>receiving landfill by between 40,000 and 100,000 m<sup>3</sup> beyond what was currently authorized; or,</p> <ul style="list-style-type: none"> <li>– The rate of fill was to increase beyond the receiving landfill's authorized amount; or,</li> <li>– Change the geographic receiving area permitted by the receiving landfill's current authorization.</li> </ul>
If Alternative 6, Expansion of the Existing Landfill is selected as the Preferred <i>Alternative to the Undertaking</i> ....	<ul style="list-style-type: none"> <li>• The Individual EA process will continue as documented in the remainder of this TOR.</li> </ul>

If “*Export to Another Jurisdiction*” is selected as the preferred alternative, this Individual EA process will cease to continue. Any of the outcomes described in **Table 5.2** may be initiated as a separate and new process. The information gathered during this current EA process may be used as background and supporting information for the new process.

The remainder of this document, therefore, outlines the steps that will be undertaken if Alternative 4, “Expansion of the Existing Landfill” is selected as the preferred alternative.

A flow chart summarizing the Evaluation of *Alternatives to the Undertaking* and the implications of the outcome of that evaluation is presented in **Figure 5.1**.

### 5.3 Phase 3: Re-Define the Purpose and Rationale for the Undertaking

Once it is clear that the Individual EA process will continue, the definition of the Undertaking as well as its purpose and rationale will be re-defined.

The Undertaking will be defined as:

*The expansion of the St. Marys landfill in order to provide the necessary capacity to fulfill the Town's post-diversion solid waste disposal needs for the next 40 years.*

A detailed description and statement of rationale for the Undertaking will be provided in the EA. This will be based on the findings of the work completed through the EA process, in Phases 1 and 2.

## 5.4 Phase 4: Define the Parameters of the Study

The parameters of the study include:

- The *Alternative Methods* to be assessed;
- The study area;
- The timeframe to be considered;
- The components of the environment to be studied; and,
- The evaluation criteria.

Each is described in detail in the following report sections.

### 5.4.1 Alternative Methods to be Assessed

*Alternative Methods* are technically, economically and environmentally feasible ways of doing, or implementing, the same activity. Assuming that the preferred *Alternative to the Undertaking* is to expand the existing landfill, the *Alternative Methods* will include various design options associated with the expansion.

During the initial screening (Section 4.0), increasing waste diversion was identified as an activity which could not fully address the Problem Statement as 100% diversion is not a readily achievable outcome during the studied period both due to the technical challenges in diverting all of the waste generated, as well as the social challenges surrounding participation in diversion programs. The result of this is that some additional disposal capacity is required to handle wastes. However, increasing diversion provides opportunities to decrease the rate at which landfill space is used, or how much waste is subject to shipping and disposal costs, and as such could be included as a consideration in the final design, subject to the *Alternative* selected. Potential incorporation of means to increase waste diversion will be included in the criteria used in the assessment of *Alternative Methods*, as appropriate.

Therefore, the *Alternative Methods* to be reviewed will include those identified in **Table 5.3**.

**Table 5.3 Alternative Methods For Carrying Out the Undertaking**

Method		Description
1	Vertical Expansion of the Existing Landfill	This Method involves an expansion in the vertical direction within the existing footprint of the landfill.
2	Horizontal Expansion of the Existing Landfill	This involves an expansion outside of the existing landfill footprint. There may be a number of options as to the direction of the horizontal expansion (i.e. expansion could occur to the north, west or east.).

Method		Description
3	A Combination of Vertical and Horizontal Expansion	This Method would involve partial vertical expansion along with some horizontal expansion of the landfill footprint, basically a mixture of Methods 1 and 2.
4	Vertical Expansion with an Enhanced Waste Diversion Program	This is the same as Method 1 but with an enhanced waste diversion program.
5	Horizontal Expansion with an Enhanced Waste Diversion Program	This is the same as Method 2 but with an enhanced waste diversion program.
6	A Combination of Vertical and Horizontal Expansion with an Enhanced Waste Diversion Program	This is the same as Method 3 but with an enhanced waste diversion program.
7	Other Options Which May be Identified During the EA Process	Other Methods may be identified during public, Aboriginal and agency consultation.

#### 5.4.2 Study Areas

In accordance with the TOR Code of Practice (MOE, 2009), the Study Area is “the area within which activities associated with the undertaking will occur and where potential environmental effects will be studied.”

Two specific Study Areas have been identified which will be used as the basis for defining and characterizing the natural, social, cultural and built environments which may be potentially affected by the expansion.

The Study Areas are as follows:

- On-site Study Area- includes all lands associated with the existing St. Marys landfill, the 37 ha site located as 1221 Water St. South, St. Marys.
- Study Area Vicinity- all lands within a 1,000 m radius of the on-site Study Area.

As noted in Section 11.0, the TOR can be refined during the EA process. It is expected that the Study Area Vicinity may be updated as the EA progresses. Specifically, Work Plans will be developed to document a discipline-specific methodology for characterizing and evaluating effects to the natural, social, cultural and built environments. Depending on the needs of each specific discipline, the Study Areas may be refined (e.g. impacts to surface water may be described based on local watershed boundaries rather than the 1,000 m Study Area Vicinity). Any such changes to the Study Areas will be documented

in each Work Plan. A more detailed description of Work Plans is provided in Section 5.4.5.

The proposed Study Areas are presented on **Figure 5.2**.

### **5.4.3 Timeframe of the Study**

The EA will consider the potential effects on various environmental components over two time periods:

- Construction and operation of the expanded landfill.
  - Construction is currently anticipated to commence in 2016 or 2017.
  - Operations would then occur over a 40 year period, ending in year 2057.
- Closure and post-closure of the landfill.

### **5.4.4 Existing Environment**

Section 1(1) of the *EA Act* broadly defines the environment as:

*“(a) air, land or water,  
(b) plant and animal life, including human life,  
(c) the social, economic and cultural conditions that influence the life of humans or a community,  
(d) any building, structure, machine or other device or thing made by humans,  
(e) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or  
(f) any part or combination of the foregoing and the interrelationships between any two or more of them.”*

As such, the EA will provide a description of the existing environment within the Study Areas based on this definition.

### **5.4.5 Methodology for Characterizing the Existing Environment**

The environment within the *On-site Study Area* and *Study Area Vicinity* will be characterized using a combination of:

- Background data sources;
- Field studies and on-site investigations;
- Surveys; and,
- Other means identified during the EA process/preparation of Work Plans.

Components of the environment to be characterized include:

- Natural Environment, including:
  - Atmosphere (air quality, odour, noise etc.);
  - Geology and hydrogeology;
  - Surface water (quality and quantity); and,
  - Biology (terrestrial, aquatic).
- Cultural Environment, including:
  - Archaeological resources;
  - Heritage structures;
  - Heritage landscapes; and,
  - Historic land uses.
- Aboriginal Connections to the Land:
  - Traditional uses;
  - Historical uses;
  - Land claims/ treaty rights/Aboriginal rights; and,
  - Other areas of interest.
- Socio-Economic Environment:
  - Transportation routes;
  - Land use;
  - Employment characteristics;
  - Economic conditions (local business with a direct link to the landfill or its operations); and,
  - Aesthetics/ Enjoyment of life.

As noted in Section 5.4.2, Work Plans will be developed during the EA, specific to each component of the environment or discipline that will outline in further detail the methodology to be used to characterize and assess each component. Draft Work Plans will be available for public, Aboriginal and agency comments prior to the initiation of field studies and survey programs.

A preliminary list of data sources is provided in **Table 5.3**. Data sources and the methodologies for collecting data will be further refined in the Work Plans.

#### **5.4.6 Preliminary Description of the Environment**

As noted in Section 5.4.5, the environment will be studied in detail during the EA process. At this time, a preliminary description of the environment within the *On-site Study Area* and *Study Area Vicinity* has been compiled based on a review of existing data sources. The environment can be described as follows:

**Natural Environment:** Air quality in the study area vicinity is typical of southwestern Ontario with transportation, industry and agricultural activities contributing to air emissions (including dust and odour) and noise levels. The existing landfill is a minor source of air and noise emissions from operational activities.

According to Thames-Sydenham Source Water Protection Plan mapping, neither Study Area falls within any Wellhead Protection Area. However, the study areas encompass lands characterized as Significant Groundwater Recharge Areas and Highly Vulnerable Aquifers (UTRCA, 2012). Soils in the region are comprised of Huron clay loam, generally characterized by rolling topography, few stones and good drainage, of the grey brown podzolic group (Hoffman and Richards, 1952).

Surface water is present within the *On-site Study Area* with the Sgarglia Drain, a tributary of the Thames River, flowing in a northwesterly direction through the site. Within the vicinity, the Thames River is located to the northwest and another smaller tributary is located to the southwest. Several ponded areas associated with the St. Marys Cement operations are present to the north. According to the Plover Mills Subwatershed Report Card (UTRCA, 2012), water quality in the area has generally remained consistent since 2005. E. Coli bacteria concentrations are very low relative to other watersheds in the Upper Thames region. However, nitrate levels, typically from sources such as fertilizer and agricultural waste, are above provincial guidelines for aquatic life. Metals, such as lead, copper and zinc are found in low concentrations, below provincial guidelines.

There are few natural biological or ecological features in the area as most of the study areas have been disturbed by past landfill activities, agricultural activities, as well as the operations of St. Marys Cement. The most significant natural feature is a strip of vegetated land along the Thames River. Mapping provided by Conservation Ontario and the Department of Fisheries and Oceans (2013) indicates that portions of the Thames River, upstream and downstream of the study areas, but not within them, support habitat for fish species which are under consideration for listing as endangered or threatened species through the *Endangered Species Act*. A portion of the Thames River several kilometers north of St. Marys also provides critical habitat for endangered or threatened mussel species. According to the Plover Mills Subwatershed Report Card (UTRCA, 2012), the following species at risk are known to be present in the general vicinity:

- Fish: black redhorse, silver shiner;
- Mussels: rainbow, rayed bean, wavy-rayed lampmussel;
- Plants: blue ash, wood poppy; and,
- Reptiles: milksnake, snapping turtle, northern map turtle, spiny softshell turtle.



**Cultural Environment:** The Town of St. Marys Official Plan (2007 consolidation) recognizes that many of the buildings and streetscapes in the Town are of special architectural and historic significance. A number of buildings and structures within the Town have been designated for heritage protection under the Ontario Heritage Act. In addition, several non-designated structures which warrant further assessment and consideration have also been identified. None fall within the On-site Study Area or its 1000 m vicinity. To date, no known archaeological sites have been confirmed within either study area. The site will be reviewed by a qualified person to determine if the site, accounting for its past land use, has the potential for archaeological findings. If this is the case a Cultural Heritage and Archaeological Assessment of the site will be undertaken.

**Aboriginal Connections to the Land:** The study areas fall within the traditional territory of several aboriginal communities. Initial consultation with the Department of Indian and Northern Affairs Canada (“INAC”, now Aboriginal and Northern Affairs Canada “AANDC”- see Appendix C4 in the Record of Consultation) indicated that there are several active litigation cases in the broad region associated with:

- Walpole Island First Nation (Bkejwanong Territory);
- Chippewas of Sarnia (Aamjiwnaang First Nation); and,
- Chippewas of Kettle and Stony Point.

Correspondence with these First Nation communities and others indicates that the Thames River was, and continues to be, an important landscape feature. The river played an important role, historically, as a transportation route, fishery and water resource. Several First Nation communities have expressed an interest in the area and in the EA process. Through ongoing consultation with these communities, additional information associated with land claims and historical and current uses of the area will be obtained. Preliminary information has been provided through the TOR consultation process (Section 9.0) and additional information will be gathered during the EA consultations described in Section 6.0.

**Socio-Economic Environment:** The existing St. Marys landfill is located in the far southwestern corner of the Town and is designated as an Environmental Constraint area, in accordance with the Town’s Official Plan (2007 consolidation). Surrounding land uses include Extractive Industrial uses to the north, north east and west that encompass the operations of St. Marys Cement. A small area of Floodplain lands lies on either side of the Thames River. Lands to the immediate south and east fall outside of the Town’s limits but are designated as Licensed Pit or Quarry and Agricultural, according to the Perth County Official Plan. A small number of residences are located on the east side of Water Street S., immediately adjacent to the landfill.

Economic drivers in the Study Area primarily include the St. Marys Cement operation and agricultural uses to the south.

#### 5.4.7 Evaluation Criteria

The six (or more – see Table 5.3) *Alternative Methods* will be evaluated using a similar process as used for the assessment of *Alternatives to the Undertaking*, described in Section 5.1.1. Each Alternative Method will be compared based on criteria associated with potential impacts to each of the following environmental components:

- Natural Environment, including:
  - Atmosphere (air quality, odour, noise etc.);
  - Geology and hydrogeology;
  - Surface water (quality and quantity); and,
  - Biology (terrestrial, aquatic).
- Cultural Environment, including:
  - Archaeological resources;
  - Heritage structures;
  - Heritage landscapes; and,
  - Historic land uses.
- Aboriginal Connections to the Land:
  - Traditional uses;
  - Historical uses;
  - Land claims/ treaty rights/Aboriginal rights; and,
  - Other areas of interest.
- Socio-Economic Environment:
  - Transportation routes;
  - Land use;
  - Employment characteristics;
  - Economic conditions (local business with a direct link to the landfill or its operations); and,
  - Aesthetics/ Enjoyment of life.

These criteria and their rationale are further described in **Table 5.4**. Criteria may be further refined as a results of comments received from the public, Aboriginal communities and agencies during the EA process.

### 5.5 Phase 5: Assess Alternative Methods for Carrying Out the Undertaking

As noted above, *Alternative Methods* will be assessed by identifying potential effects on each of the environmental components, proposing mitigation measures to minimize

effects and then subjecting each alternative and its residual and cumulative impacts to a qualitative comparison based on a variety of criteria and indicators. The process is detailed in the following sections.

### **5.5.1 Potential Effects**

Positive and negative environmental effects that could potentially arise from the undertaking and from *Alternative Methods* will be identified and described for each of the Alternatives. This will include all possible impacts to the natural, social, cultural and man-made components of the environment. Effects will be characterized based on their magnitude, duration, frequency and reversibility.

### **5.5.2 Mitigation Measures**

Any change can result in some type of effect. Although the Preferred Alternative will be selected on the basis that it will result in minimal effects, some impact is still likely to be felt. Measures for mitigating potential negative environmental effects from the undertaking and from *Alternative Methods* will be identified and described. Any residual impacts that cannot be fully mitigated will then be identified.

### **5.5.3 Evaluation of Alternative Methods**

The evaluation of *Alternative Methods* will consider the potential effects of each alternative on the various components of the environment identified in **Table 5.4**, taking into consideration the mitigation efforts that can be made to reduce or eliminate these impacts and the residual impacts which cannot be mitigated. The Preferred Alternative will then be selected based on public, Aboriginal and agency comments as well as professional judgement as to which Alternative is most likely to result in the least number of post-mitigation impacts of high magnitude, long duration, repetitive frequency and which have a limited chance to be reversed. At the conclusion of the assessment a *Preferred Method for Carrying Out the Undertaking* will be identified.

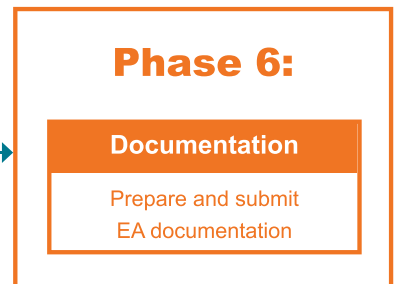
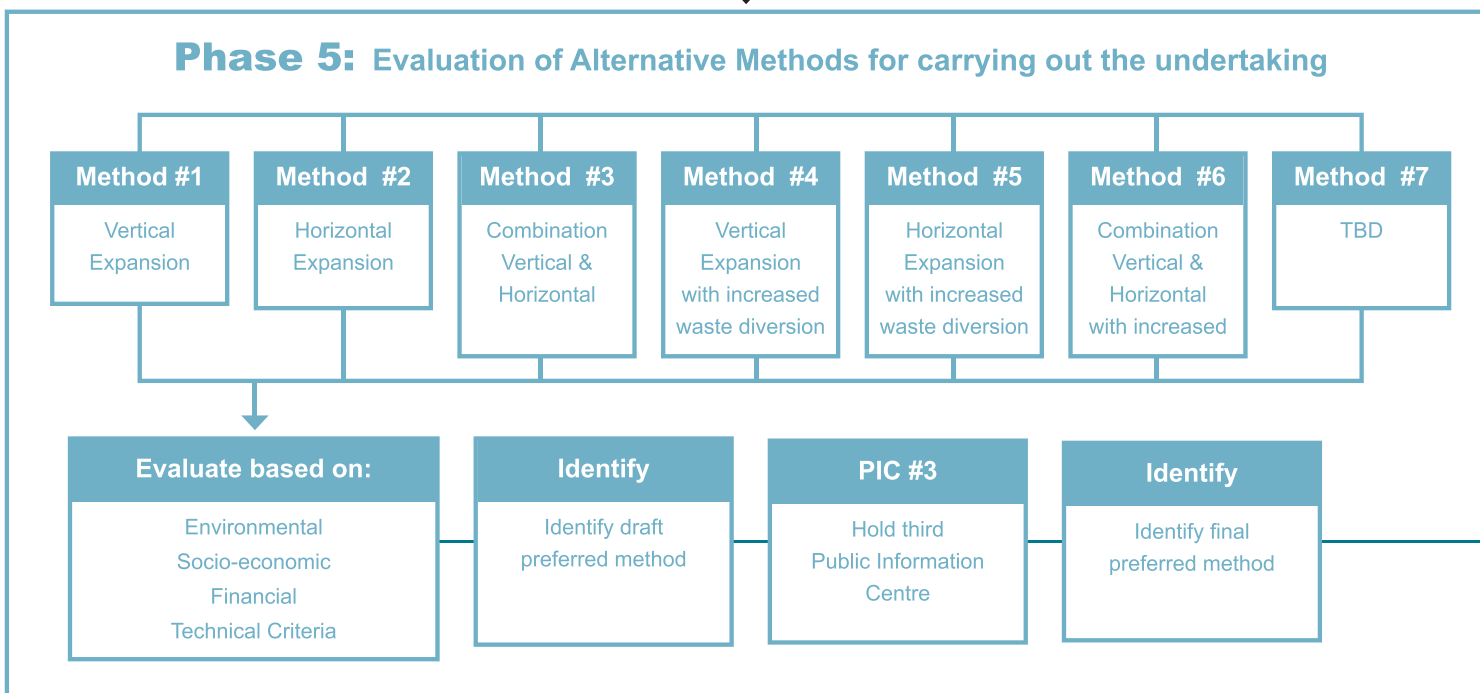
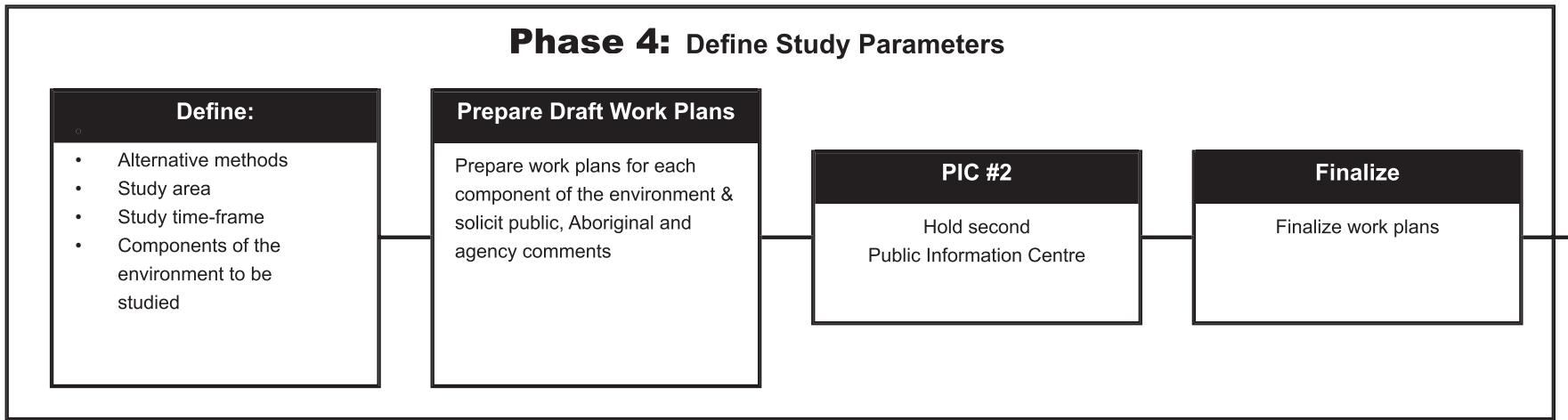
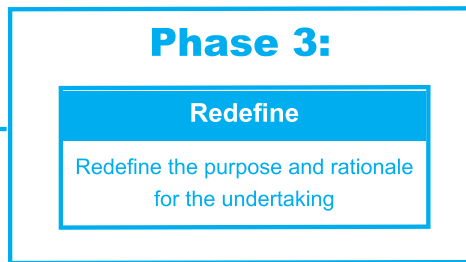
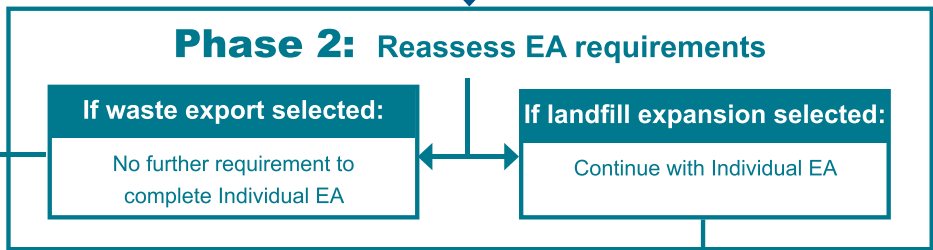
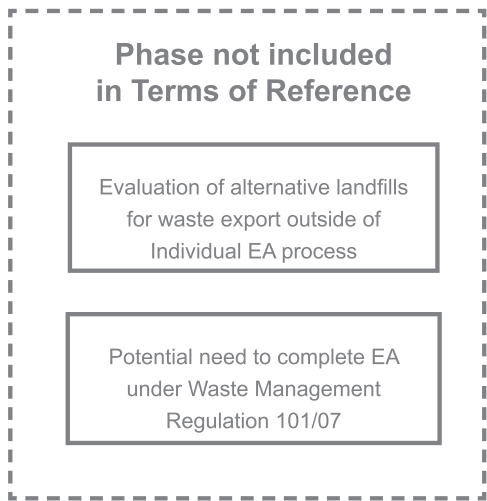
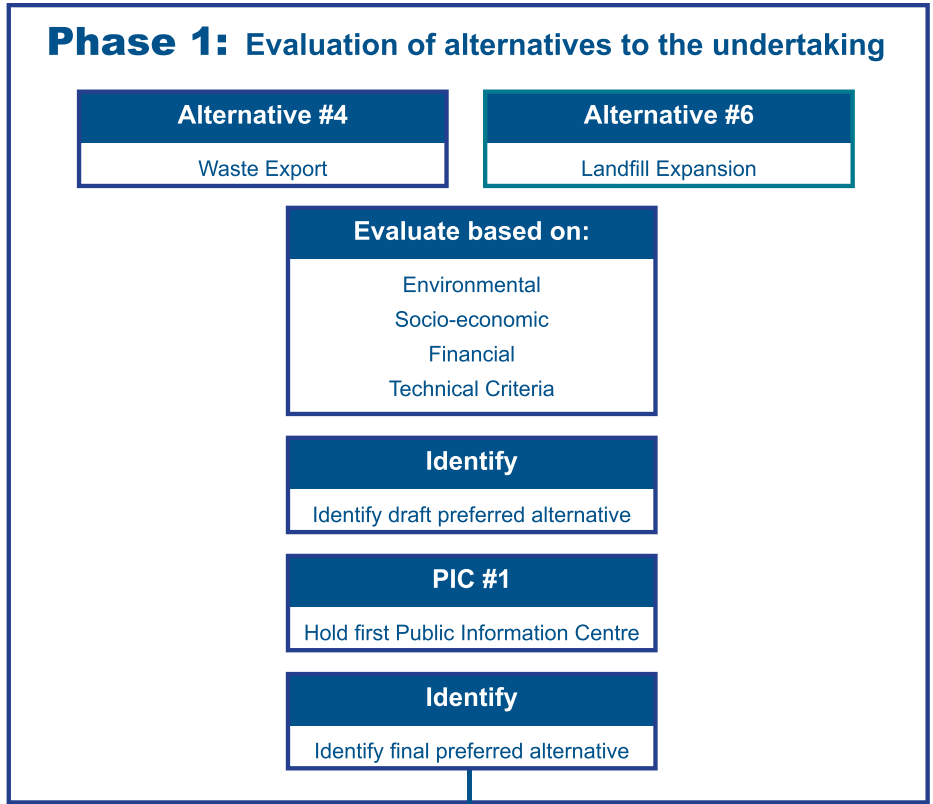
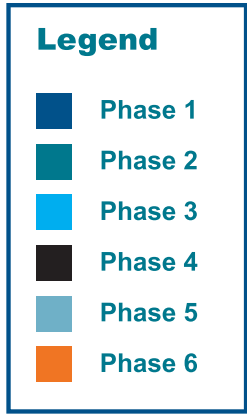
## **5.6 Phase 6: Prepare and Submit EA Documentation**

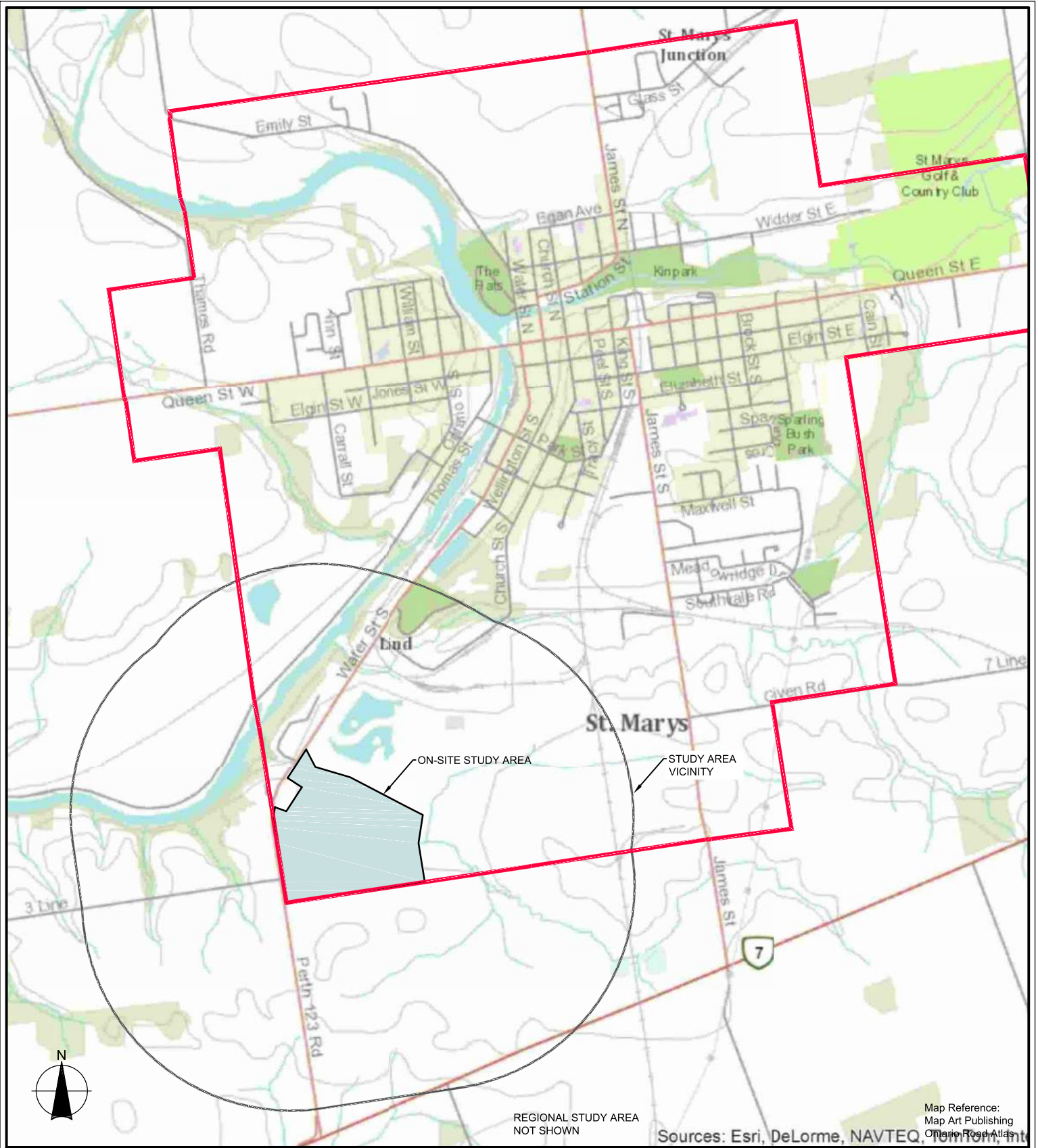
The EA process will be fully documented and available for public, Aboriginal and agency review at various stages throughout the process. It is anticipated that the EA will be supplemented with Technical Reports, covering disciplines such as air quality, hydrogeology, terrestrial and aquatic environment, cultural and archaeological resources and social and economic conditions, among others. Each Technical Report will be prepared in accordance with the Work Plans, described in Section 5.4.5. Applicable agencies will be contacted throughout the preparation of Technical Reports to ensure they are adequate to fully document and assess conditions.

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Work Plans and Technical Reports will be made available for public, Aboriginal and agency review, as described in Section 6.0. Input received through consultation activities will be considered in the preparation of Work Plans and Technical Reports.

A draft EA report will be submitted to the MOE, Government Review Team and other interested stakeholders, if applicable, prior to final submission in order to ensure that it meets all requirements. Any comments received during the draft review will be considered and, where appropriate, included in the final EA submission. Additional details regarding consultation are provided in Section 6.0.





REGIONAL STUDY AREA  
NOT SHOWN

Sources: Esri, DeLorme, NAVTEQ, TomTom, Int  
Map Reference:  
Map Art Publishing  
Ontario Road Atlas



Figure Title  
**TOWN OF ST. MARYS  
TERMS OF REFERENCE  
STUDY AREAS**

Client  
**THE CORPORATION OF THE  
TOWN OF ST. MARYS**

Drawn AE	Checked JRH	Date 13/06/25
Scale 1:25,000	Project No. 300032339	

Figure No.  
**5.2**

**Table 5.4 Evaluation Criteria, Indicators and Data Sources.**

<b>Environmental Component</b>	<b>Environmental Sub-component</b>	<b>Rationale</b>	<b>Indicator</b>	<b>Potential Data Sources</b>
Atmosphere	Air Quality	Landfill site expansion and landfilling operations can produce contaminants during their operation with potential off-site impacts (including methane, NMOCs, dust and other particulates).	<ul style="list-style-type: none"> <li>Emissions modelling outputs (source emissions?)</li> <li>Number of people potentially impacted</li> </ul>	Manufacturers, Google Maps, MTO, MNR, climate models, emission summaries,
	Odours	Landfilling and transfer operations may generate odours during waste movements. If not controlled adequately these can lead to off-site impacts.	<ul style="list-style-type: none"> <li>Amount generated by existing operations</li> <li>Number of potential impacts</li> <li>Predicted boundary operations</li> </ul>	Town, MOE, emission summaries, models
	Noise	Noise impacts from construction and operations have the potential to be heard off site.	<ul style="list-style-type: none"> <li>Amount generated by existing operations</li> <li>Times noise is anticipated during operations</li> <li>Number of impacts</li> <li>Boundary conditions</li> </ul>	Town, MOE, Similar operations, acoustic assessment
Geology and Hydrogeology	Groundwater Impacts	Landfills have the potential to generate leachate plumes and groundwater impacts during operations. These contaminants can move off site following existing groundwater flow pathways or creating their own (new) pathways	<ul style="list-style-type: none"> <li>Contaminating lifespan</li> <li>Hydraulic head, local and regional hydrogeology</li> <li>Nearby groundwater receivers</li> <li>Number and severity of potential impacts</li> <li>Potential Drinking Water Source Impacts</li> </ul>	- Conducted studies, Town, MOE, Conservation Authority (CA), existing studies including source water protection plans.
	Geology – Aggregate Extraction Considerations	Portions of the site are subject to an existing aggregate extraction licence. Review of existing records or a 'mineral aggregate study' may be required to determine if the portion of the site has any value as an aggregate extraction operation.	<ul style="list-style-type: none"> <li>Remaining reserves in the vicinity of the landfill property</li> <li>Status of the license and any attached conditions</li> </ul>	St. Marys Cement records, MNR, existing geological studies
Surface Water	Quality	Operations have the potential to impact surface runoff quality due to surface material changes and storm runoff generation	<ul style="list-style-type: none"> <li>Number of watercourses in study area</li> <li>Size of watercourses in area</li> <li>Predicted impacts to offsite quality</li> </ul>	Town, MOE, CA, MNR, Environment Canada
	Quantity	Site development can alter the storm generated quantities through loss of soil sorption and channeling	<ul style="list-style-type: none"> <li>Duration/frequency/severity of potential on and off site impacts</li> </ul>	MOE, UTRCA, Town, Conducted Studies, Storm models
Biology	Terrestrial	Site development and waste movements have the ability to cause impacts on the terrestrial environment through habitat changes as well as through negative human/animal interactions.	<ul style="list-style-type: none"> <li>Impact and duration of site changes on habitat</li> <li>Number and populations of species at risk present</li> <li>Potential for interactions</li> </ul>	CA, MNR, Site reconnaissance, Site staff discussions
	Aquatic	Site development may alter the aquatic environment either directly through drainage changes, or indirectly through changes to surface water run-off or stream shading.	<ul style="list-style-type: none"> <li>Quantity and variety of SAR present</li> <li>Changes as a result of site development</li> </ul>	CA, MNR, MOE, fish studies

Environmental Component	Environmental Sub-component	Rationale	Indicator	Potential Data Sources
Cultural Heritage Resources	Buildings	Development has the potential to impact historic or culturally significant structures	<ul style="list-style-type: none"> <li>Number of significant buildings present in the local area</li> <li>Potential impacts to buildings</li> </ul>	Town registers, local interest groups, site investigations
	Viewscapes	Waste disposal activities can negatively impact scenic, or otherwise significant viewscapes	<ul style="list-style-type: none"> <li>Presence of significant viewscapes</li> </ul>	Local interest groups, site reconnaissance work
	Archaeological Resources	Development has the potential to impact artifacts or other archaeological resources	<ul style="list-style-type: none"> <li>Presence of or likelihood of archaeological resources</li> </ul>	Town and provincial registers, Aboriginal groups, Stage I Archaeological Assessment
Transportation	Local	Local traffic rerouting has the potential to disrupt residences and businesses along travel corridors	<ul style="list-style-type: none"> <li>Amount/type of traffic generated</li> </ul>	Town, MTO
	Regional	Regional changes to traffic flows (excluding 400-series highways) as a result of transport has the potential to disrupt residences and businesses along travel corridors	<ul style="list-style-type: none"> <li>Amount/type of traffic generated</li> </ul>	Town, MTO Traffic studies, regional plans
Land Use	General	Changes in existing land uses to accommodate disposal or transfer facilities can reduce the availability of lands for other purposes, as well as may affect other local land uses.	<ul style="list-style-type: none"> <li>Amount of land required</li> <li>Current land use</li> <li>Presence of sensitive lands within study areas</li> </ul>	Review of official plan, Zoning information, MOE, MNR, CA
	Agriculture	Changes in land use through site development or off site impacts can result in the loss of productive farmlands.	<ul style="list-style-type: none"> <li>Number and type of farms in study area</li> </ul>	OMAFRA, Town, Ontario Federation of Agriculture, Ontario Farm Fresh
	Aggregate Resources	Previous development of the site as part of the St. Marys Cement extraction operations indicates the expansion site may be subject to plans as part of the <i>Aggregate Resources Act</i> . The areas directly adjacent to the site are also licensed under the Act.	<ul style="list-style-type: none"> <li>Conditions and Status of the Aggregate License relevant to this site.</li> <li>Potential for interference with aggregate extraction operations on-site and within the study area vicinity.</li> </ul>	St. Marys Cement, MNR
Socio-economic	Employment	The development of a landfill or other waste disposal option will have an impact on local employment including potential for short term (construction) and longer term (operations) jobs.	<ul style="list-style-type: none"> <li>Number, type, duration of changes to local workforce</li> </ul>	Town, Business Associations
	Financial	Developing the selected option will have some cost impact to the Town, the duration of the time period targeted (40 years) implies a significant total cost will be incurred over the duration. The distribution of these costs will vary between capital, operating and long term liability with various solutions.	<ul style="list-style-type: none"> <li>Short, medium, long term financial costs to the Town, Present Value assessment</li> </ul>	Town, Ratepayers groups
	Economic	Development of a solid waste solution may have indirect effects to local businesses depending on the solution chosen, these may include changes to revenues based on local employment changes, changing tax rates, as well as varying waste disposal costs	<ul style="list-style-type: none"> <li>Changes to revenues, costs, taxes anticipated to local businesses</li> </ul>	Business owners, ratepayer groups, municipal agencies (BBA, Rotary?)



Environmental Component	Environmental Sub-component	Rationale	Indicator	Potential Data Sources
	Social	There is the potential for social impacts as a result of solution development. Either directly through displaced residences or communal space, or indirectly through opportunity costs or community image.	<ul style="list-style-type: none"> <li>Number of residences impacted, type/ area of impacted land uses etc.</li> </ul>	Property owners, ratepayer groups, public consultation
	Environmental	Due to the potential risks with waste disposal operations both in intensity and in duration. First Nation groups often express concern with preservation of the natural environment.	<ul style="list-style-type: none"> <li>Includes activities as discussed in the above sections, with additional emphasis placed on the items brought forward as concerns.</li> </ul>	First Nations Communities,
Aboriginal	Cultural	Historical land uses may have included culturally significant sites or features.	<ul style="list-style-type: none"> <li>Presence of known sites within the area. Records of previous site disturbances.</li> <li>Distance to established communities</li> <li>Expressed concerns</li> </ul>	First Nations Communities, Town, Archaeological Assessment, local interest groups
	Land Use	As discussed waste disposal operations may result in land use changes. As these changes may impact traditional uses. These should be discussed.	<ul style="list-style-type: none"> <li>Existing land use focusing on first nation's significance, size of area, presence of any sensitive uses.</li> </ul>	First Nations Communities, town, town zoning maps, official plans

## **6.0 EA Consultation Program**

### **6.1 Consultation Goals**

The EA will include a consultation program based on the following principles:

1. The EA consultation program will be open by making all reasonable efforts to ensure that potentially affected or interested parties have full information made available to them and are given the opportunity to make their views known.
2. The EA consultation program will be transparent by documenting the consultation process that is carried out for the development of the EA so that the process can be understood and traced.
3. The EA consultation program will be responsive by providing opportunities for interested parties to comment on the EA at key stages and by ensuring that such comments are addressed in the EA.
4. The EA consultation program will be meaningful by identifying how comments and concerns have been considered throughout the EA process.
5. The EA consultation program will be flexible by allowing response to new issues that emerge as the EA proceeds.
6. The EA consultation program will include meetings and/or discussions with Aboriginal communities that have expressed an interest during the TOR review or during the EA.

### **6.2 Contact List**

The following list provides the specific agencies and departments of the federal, provincial and municipal governments that will be consulted during the EA.

#### **Federal Agencies**

- Canadian Environmental Protection Agency;
- Environment Canada (“EC”);
- Health Canada;
- Canadian Transportation Agency;
- Transport Canada;
- Department of Fisheries and Oceans Canada (“DFO”);
- Aboriginal Affairs and Northern Development Canada (“AANDC”).

### **Provincial Agencies**

- Ministry of Natural Resources (“MNR”);
- Ministry of the Environment (“MOE”);
- Ministry of Agriculture, Food and Rural Affairs;
- Ministry of Tourism, Culture and Sport (“MCL”);
- Ministry of Municipal Affairs and Housing;
- Ministry of Infrastructure;
- Ministry of Transportation;
- Ministry of Aboriginal Affairs;
- Ontario Power Generation;
- Infrastructure Ontario.

### **Municipal Contacts**

- Town of St. Marys;
- Township of Perth South;
- Perth County.

### **Conservation Authority**

- Upper Thames River Conservation Authority

### **First Nations**

The following First Nations were listed by the Ontario Secretariat for Aboriginal Affairs (OSAA):

- Association of Iroquois and Allied Indians;
- Métis Nation of Ontario;
- Caldwell First Nation;
- Walpole Island First Nation;
- Chippewas of Kettle and Stony Point First Nation;
- Oneida Nation of the Thames First Nation;
- Chippewas of the Thames First Nation;
- Munsee Delaware First Nation;
- Six Nations of the Grand River Territory;
- Haudenosaunee Development Institute;
- Mississaugas of New Credit First Nation;
- Moravian of the Thames Delaware Nation;
- Chippewas of Sarnia 45 First Nation (Aamjiwnaang First Nation); and,

- Windsor Essex Métis Community Council.

### **Utilities/Services**

- Hydro One Networks Inc.;
- Festival Hydro;
- Enbridge Gas Distribution Inc.;
- TransCanada Pipeline;
- Trans-Northern Pipeline Inc.;
- Rogers Communications;
- Bell Canada;
- Blink Communications Inc.;
- Telus;
- Allstream;
- Union Gas;
- Canadian Pacific Railway.

Other agencies, authorities, utilities, etc. may be contacted through the course of the EA.

## **6.3 Consultation Activities**

Activities will include:

- Public Notices;
- Public Information Centres;
- Project information posted to the Town's website;
- Agency consultation; and
- Aboriginal consultation.

### **6.3.1 Public Notices**

Public Notices will be published at the following project milestones:

- Notice of Acceptance of the Terms of Reference and Commencement of the EA;
- Notice of Public Information Centre #1;
- Notice of Public Information Centres #2;
- Notice of Draft EA for Inspection;
- Notice of Public Information Centre #3; and
- Notice Submission of the EA.

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Some notices may be combined, subject to timing of project milestones. Each notice will be published in the following newspapers:

St. Marys Journal Argus  
115 Queen Street  
St. Marys, ON  
Phone: (519) 284-2440

St. Marys Independent  
36 Water Street  
St. Marys, ON  
Phone: (519) 284-0041

Copies of all notices will also be mailed to:

- Landowners/members of the public who declare an interest during the TOR process, or subsequently;
- Applicable agencies (see Agency Contact List in Appendix E);
- Potentially affected Aboriginal communities (see Aboriginal Contact List in Appendix E); and
- Landowners within the *Study Area Vicinity*.

### 6.3.2 Public Information Centres

Three Public Information Centres (“PICs”) will be held at the project milestones noted in Table 6.1. Timing of the PICs corresponds to the Phases described in Section 5.0 and in Figure 5.1.

**Table 6.1 Proposed Public Information Centres**

<b>PIC</b>	<b>Timing</b>	<b>EA Phase*</b>
PIC #1	Upon completion of the draft evaluation of <i>Alternatives to the Undertaking</i>	Phase 1
PIC #2	Upon completion of draft Work Plans	Phase 4
PIC #3	Upon completion of the draft EA document (prior to submission)	Phase 5

\*Refer to Section 5.0 and Figure 5.1

PICs will be conducted in a drop-in format and will include:

- A series of display boards describing the EA process and work conducted to date;
- Sign-in sheets to document participation;
- Comment forms to allow participants to submit comments;
- Knowledgeable staff on hand to answer questions; and
- Copies of draft documents and supplementary information available for review.

### 6.3.3 Project Information Posted to the Town's Website

Project information, including notices and draft documents will be posted to the Town's website: <http://www.townofstmarys.com>.

### 6.3.4 Agency Consultation

Agency consultation will include:

- Initial meeting with MOE;
- Email/mailing of all notices;
- One on-site meeting with interested agencies, once an *Alternative to the Undertaking* has been identified, if applicable (e.g. UTRCA, Perth County, MNR etc.); and
- Agency conference calls, as required to review EA methodologies and work plan etc.

### 6.3.5 Aboriginal Consultation

Aboriginal consultation will include:

- Mailing of all project notices;
- Follow-up phone calls and/or emails to confirm level of interest;
- Responses to comments and questions posed by Aboriginal communities; and
- Additional consultation (e.g. meetings with Chief and Council, community meetings, etc.), as required based on interest.

### 6.3.6 Interested Persons

Consultation with Interested Persons will include:

- Mailing of all project notices to residents within the *Study Area Vicinity* as well as anyone who expressed an interest in the project during the TOR stage;
- Notices placed in newspapers, as described in Section 6.3.1;
- Public Information Centres as described in Section 6.3.2;
- Compilation of a list of Interested Persons based on correspondence received in response to notices and PICs;
- Responses to comments and questions from Interested Persons; and
- Additional consultation as required to address concerns and comments.

## 6.4 Incorporation of Consultation Findings into the EA

All comments from the public, agencies, Aboriginal communities and other interested persons will be documented and summarized in the EA. All other consultation activities, such as PICs and agency and Aboriginal meetings, will also be documented.

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Documentation will include any sign-in sheets, copies of presentation boards, display materials and hand-outs. Information protected under the *Freedom of Information and Privacy Act* will not be included.

The EA Report will include a discussion of how all comments were addressed in the EA and what, if any, changes or commitments were made as a result of comments. A rationale for any comments, questions, issues or concerns that did not result in changes to the draft EA will also be provided.

## **6.5 Conflict Resolution**

The Town is committed (e.g., through implementation of the EA Consultation Program) to ensuring that the proposed waste management undertaking, resulting from this EA process, is in the best interests and reflects the values and priorities of the Town's residents, the general public, government agencies, Aboriginal communities and other interested persons. The Town is committed to working with all interested parties to address and resolve concerns to the greatest extent possible.

## 7.0 EA Compliance Monitoring

An Environmental Assessment Compliance Monitoring Plan will be developed and included in the EA.

The EA Compliance Monitoring Plan will cover all phases of the implementation of the undertaking (e.g., planning, detailed design, tendering, construction, operation and decommissioning) and will provide for regular review and reporting to MOE, as required, of the following key areas:

- Any conditions applied by the Minister in approving the EA undertaking.
- Action on commitments made by the Town made during preparation of the EA. The EA will include a list of specific commitments made during preparation of the EA, including, but not limited to: impact management measures (such as mitigation measures); additional works and studies to be carried out; monitoring; public consultation and contingency planning.
- Documentation and correspondence.
- Results of environmental effects monitoring and a comparison of those actual effects with the potential effects predicted during preparation of the EA and, where actual effects exceed predicted effects, an assessment, in consultation with MOE, of whether additional mitigation measures may be needed.
- Implementation of additional mitigation measures, as necessary.



## 8.0 Other Approvals

In addition to approval of the EA under the *Environmental Assessment Act*, additional approvals under a number of provincial statutes may also apply. The nature and number of approvals will depend on the alternative selected during the EA process. Approvals may include:

- *Environmental Protection Act* (e.g., ECA amendment);
- *Ontario Water Resources Act* (e.g., ECA amendment);
- *Conservation Authorities Act* (e.g., conformity with UTRCA regulations and policies);
- *Aggregate Resources Act* (e.g., amendments to any existing Aggregate Licence/Site Plan);
- *Planning Act* (e.g., Official Plan/Zoning By-Law conformity); or,
- Others as applicable depending on the Alternative selected.

During the preparation of the EA, any federal agencies that may have interests applicable to the proposed undertaking will be identified by way of consultations with relevant federal agencies and any necessary approvals under federal statutes will be identified.

While the Town's proposed undertaking is subject to the requirements of the Ontario *Environmental Assessment Act*, other EA processes may also apply.

Although it is not anticipated at this time that the *Canadian Environmental Assessment Act, 2012 (CEAA, 2012)* will apply, any significant changes to the proposed undertaking may necessitate a re-evaluation of federal EA requirements. If application of the *Canadian Environmental Assessment Act, 2012*, is effected by one or more aspects of the proposed undertaking the Town will work in a coordinated way with the Ontario Government and the Government of Canada, both governments having formally agreed to coordinate their respective EA processes pursuant to the Canada-Ontario Agreement on EA Cooperation (November 2004), and the guidance document: "Federal/Provincial Environmental Assessment Coordination in Ontario - a Guide for Proponents and the Public" (Canadian Environmental Assessment Agency and MOE, June 2007).

A specific list and description of other approvals required for the undertaking will be provided in the EA.

## 9.0 Terms of Reference Consultation

As noted in Section 1.2 of this report, the consultation program during the TOR process was managed by CRA, in coordination with the Town. A detailed record of the consultation is provided in the Record of Consultation (CRA, November 2012). Prior to Burnside taking on the remainder of the EA work, the MOE questioned if the revised TOR had been approved by the Town. Rather than altering CRA's report, Burnside is providing minutes of Town meetings in Appendices A and B of this report to address this question. The full Consultation Record is presented in Appendix E.

A summary of the consultation program undertaken during the TOR is presented below.

The Town completed a consultation program during the preparation of this TOR. The program consisted of:

- TOR initiation communication with MOE, during which the Town's waste management situation was reviewed and the proposed approach to the TOR and EA was discussed and agreed upon.
- Publication of a notice in the *St. Marys Journal Argus* announcing the commencement of the TOR process and the date, place and time and subject matter for a TOR public information open house.
- Direct distribution of letters, e-mails and/or faxes to review agencies announcing the commencement of the TOR process, advising of the date, place and time and subject matter for the TOR public information open house and inviting attendance at the Open House.
- Distribution by regular mail, e-mail and/or fax of draft TOR to government agencies, including, but not limited to, the following:
  - Ministry of Aboriginal Affairs;
  - Aboriginal Affairs and Northern Development Canada ("AANDC");
  - Upper Thames River Conservation Authority ("UTRCA");
  - Ministry of Natural Resources ("MNR");
  - Ministry of Transportation ("MTO");
  - Transport Canada;
  - Ministry of Tourism, Culture and Sport;
  - County of Perth;
  - Township of Perth South; and,
  - Perth County Health Unit.
- Distribution by regular mail, e-mail and/or fax of the draft TOR to Aboriginal communities, including the following:
  - Caldwell First Nation;
  - Walpole Island First Nation;
  - Kettle and Stoney Point First Nation;

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- Oneida Nation of the Thames;
  - Chippewas of the Thames;
  - Munsee Delaware First Nation;
  - Six Nations of the Grand River Territory;
  - Mississaugas of New Credit First Nation;
  - Moravian of the Thames Delaware Nation;
  - Chippewas of Sarnia 45 First Nation;
  - Métis Nation of Ontario (“MNO”); and
  - Windsor-Essex Métis Community Council.
- Availability of copies of draft TOR on the Town's website and in printed form at the Town's municipal office, the MOE Southwestern Region Office (London), the offices of the Upper Thames River Conservation Authority and the St. Marys Public Library.
  - Conduct a TOR public information centre (“PIC”), in St. Marys. The purpose of the PIC was to provide information and invite questions/comments on the draft TOR.
  - Revision of the draft TOR in response to any questions/comments received during the PIC and the follow-up circulation.
  - Conduct of follow-up communication with MOE, during which the Town's revised draft TOR was reviewed and suggested changes discussed and agreed upon.
  - Revision and formal submission to MOE of the TOR, taking into consideration all comments received.

Copies of documentation, including a list of comments/concerns made during preparation of this TOR (and the Town's responses to those comments/concerns) pertaining to the public, agency and Aboriginal community consultation conducted during preparation of this TOR may be found in the document "Record of Consultation".

In accordance with Section 4.3.1 of the "Code of Practice - Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario" (MOE, October 2009) the TOR Record of Consultation includes information about the consultation process, including copies of all letters, e-mails, faxes and other correspondence by the Town and its consultants sent to and received from members of the public, government agencies, other interested parties and Aboriginal communities; records of public information events, including information about the event locales and layout/programs, copies of materials provided at the events, sign-in sheets, comment sheets, news media communications, notices published, etc. The Record of Consultation also describes how those comments, questions, issues and concern were responded to by the Town and its consultants, and how the draft TOR was affected (i.e., amended or not) by those comments, questions, issues and concerns. A rationale for any comments questions issues or concerns that did not result in changes to the draft TOR is also provided.

## 10.0 Flexibility of These Terms of Reference

If approved by the Minister of the Environment, this TOR will provide the framework for preparing the EA Report and will serve as a benchmark for reviewing the EA Report.

It is understood that, given the nature of TOR, it is not intended to present every detail of all the activities that will occur when preparing the EA. It is therefore possible that as a result of changing circumstances between the time of writing the terms of reference and preparation of the EA it may become evident that certain modifications to this TOR may be necessary. It is important to note that the commitments described in this TOR are a minimum that must be met although more effort may be required. It is envisioned that such changes may include:

- Requirements for additional or expanded evaluations, studies or work, (e.g., in the areas referred to in Section 5.0), to ensure that the nature and magnitude of potential positive and negative environmental effects are fully and accurately identified.
- Changes in methodology of the studies referred to in Section 5.0. This may be in response to studies that showed environmental effects to be greater or less than previously estimated.
- Modifications to the consultation program.
- Any other modifications required or available through changes to Acts or Regulations.

This list is not intended to be exhaustive. Rather, it sets out by example, the types of changes that will be considered routine and therefore can be accommodated within the framework of the approved TOR.

In the event of uncertainty as to whether a proposed change should be considered routine or of note, the MOE will be consulted through the MOE EA project officer.

## **11.0 Summary**

This TOR provides the framework for a process to be followed by the Town of St. Marys for preparation of an individual environmental assessment to address the Town's future municipal solid waste disposal needs. The final description of the undertaking will be included in the EA Report.

The Proponent of the EA is the Town of St. Marys, which currently owns and operates the existing landfill site.

This TOR outlines the basis for conduct of a program of consultation with the Ministry of the Environment and other provincial and federal government agencies, the public, Aboriginal communities and other interested persons.

The TOR "Record of Consultation" provided in Appendix E accompanies and supports this TOR.

Respectfully submitted,

**R.J. Burnside & Associates Ltd.**

St. Marys Solid Waste Disposal Environmental Assessment Terms of Reference (Amended)  
December 2013

## 12.0 References

Conservation Ontario and Department of Fisheries and Oceans. 2013. [Aquatic Species at Risk Distribution Maps](http://www.conservation-ontario.on.ca/projects/DFO.html). Retrieved September 23, 2013 from <http://www.conservation-ontario.on.ca/projects/DFO.html>

Hoffman, D.W. and N.R. Richards. 1952. [Soil Survey of Perth County. Report No. 15 of the Ontario Soil Survey](http://sis.agr.gc.ca/cansis/publications/surveys/on/index.html). Retrieved September 23, 2013 from <http://sis.agr.gc.ca/cansis/publications/surveys/on/index.html>

Upper Thames River Conservation Authority. 2012. [Plover Mills Watershed Report Card](http://www.thamesriver.on.ca/Watershed_Report_Cards/Watershed_Report_Cards-2012.htm). Retrieved September 23, 2013 from [http://www.thamesriver.on.ca/Watershed\\_Report\\_Cards/Watershed\\_Report\\_Cards-2012.htm](http://www.thamesriver.on.ca/Watershed_Report_Cards/Watershed_Report_Cards-2012.htm)



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**Appendix A**  
**Minutes – Committee of the Whole,**  
**September 18, 2012**



**MINUTES:  
OF THE COMMITTEE OF THE WHOLE DAY 2**

**September 18, 2012**

**5:30 P.M.**

**Council Chambers, Town Hall**

**Mayor Grose  
Councillor Van Galen  
Councillor Pope  
Councillor McCotter  
Councillor Winter  
Councillor Hainer  
Councillor Osborne**

**K. McIlwain, CAO/Clerk  
N. Atlin, Deputy Clerk  
J. Kelly, Interim Manager of Public  
Works  
J. Brown, Treasurer**

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**1. CALL TO ORDER**

by Mayor Grose at 5:31 p.m.

**2. DECLARATIONS OF PECUNIARY INTEREST**

Bill Osborne has declared conflict of interest on item 8.1 - Monthly Report regarding any discussion of Thamescrest Farms.

**3. APPROVAL OF AGENDA**

**3.1. Amendments to Agenda**

Councillor Van Galen asked to add items regarding the Master Servicing Plan as 6.2 and Heritage Conservation District as 9.1.



## **4. DELEGATIONS**

### **4.1. Church and Station Street - Sharon and Don Cameron**

Don Cameron introduced his concerns with the intersection of Church and Station Street. A four way stop at the intersection will not solve the problem in his and other residents opinion. The problem is east and west traffic and not the north/south traffic. He then discussed the Burnside report regarding the installation of a four-way stop at the intersection. He would like the issue of getting up the hill in the winter time addressed. Additionally, there is a concern with the location of the stop sign.

Peter Rice introduced himself and his concerns with the traffic survey conducted. He believes that the Burnside Report is incorrect. Education for the East/West drivers is the most important issue. Additionally, a larger stop sign should be put in as well there should be rumble strips and paint put in before the stop as well.

Mayor Grose thanked the speakers.

P. Rice asked if more than one solution can be implemented.

Mayor Grose replied that many different options can be implemented.

Councillor Osborne discussed his experiences with the hill.

### **4.2. Landfill Expansion - Conestoga-Rovers & Associates - James Yardley**

Ron Schwark introduced himself. He then outlined the landfill site environmental assessment (EA).

J. Yardley presented the landfill expansion process and EA terms of reference.

Councillor Winter asked about the references to communication and how information should be sent to both papers. He then asked about the criteria in selecting the aboriginal bands which would be notified.

J. Yardley replied that the groups selected were done so through the suggestion of the Ministry.

Councillor Van Galen asked what issues could derail the final opening day process.

J. Yardley replied that there are many options for things that will lengthen the time. Approvals may take longer than anticipated for instance. However, some construction options can help cut down on the time that these delays cost.

Councillor Van Galen asked if there are extra fees should the EA be delayed.

J. Yardley replied that extra fees won't be assessed unless the Ministry requires extra work from the EA. However, the geology and hydrogeology can sometimes create unanticipated issues.

Councillor Van Galen asked what the budget on this study is.

Mayor Grose asked to see the full estimate.

K. McIlwain clarified the estimates to be for construction to be \$1.2 to \$1.7 million dollars over and above that.

Councillor Pope discussed the possible entrance change for the landfill.

K. McIlwain asked about the consolidation of landfills and whether it may be beneficial to work with other municipalities.

J. Yardley replied that this effort only focuses on the Town of St. Marys. Changing the service area of a landfill will require an approval process unless it is a private landfill.

Moved By: Councillor Hainer

Seconded By: Councillor Osborne

That Council approves the Proposed Terms of Reference for the St. Marys Landfill Site Expansion Environmental Assessment, the Record of Public Consultation and additional supporting documentation and directs staff to submit these documents to the Ministry of the Environment for approval.

**CARRIED**

## **6. TECHNOLOGY**

## **6.2. Master Servicing Plan**

K. McIlwain asked R. Schwark to stay a few minutes to answer any possible questions.

Councillor Van Galen discussed the infiltration issues with the water treatment plant.

K. McIlwain replied that a few system penetration sites have been identified. However, there are other issues with capacity at the plant.

R. Schwark discussed BOD problems. He then explained the significance of the inflow to this plant. Flow meters should be implemented to find the inflow at strategic sub-watersheds. These monitoring devices will be able to help zero-in on these major inflows.

Councillor McCotter asked how the monitoring devices work.

R. Schwark explained the process of the devices.

Councillor Van Galen asked staff how an inspection system could be implemented with respect to sump pumps.

K. McIlwain explained that staff are working on a method to identify infiltration and inflows.

## **5. FINANCE**

### **5.1. Finance Monthly Report**

No questions.

### **5.2. Fire Monthly Report**

None.

### **5.3. Additional Items**

J. Brown discussed the audited financial statements which have become available. These will be sent to Council and the public.

J. Brown then discussed that funding options have been announced by the province and that a resolution will be brought to the next weeks

Council meeting. This will be for an infrastructure management plan.

Mayor Grose asked if the funding will cover the total cost of the plan.

J. Brown replied that it may not, but the plan will be prepared for the 2013 budget.

## **6. TECHNOLOGY**

### **6.1. Monthly Report**

Councillor Winter asked about the scrap yard drainage requirements mentioned in the report.

D. Blake discussed how the drainage from surface runoff is being addressed.

Mayor Grose asked for an information report once the study is done.

Councillor Pope discussed the LED retrofit at the PRC.

K. McIlwain discussed the potential path from Emily Street. Town staff may be able to create the path for cheaper than the contractor. It will be a gravel path.

Mayor Grose asked if the property owners have been notified.

K. McIlwain replied that they will be contacted soon if Council's direction is to proceed.

The Committee directed staff to contact the property owners and proceed with the path.

## **7. OPERATIONS**

### **7.1. Monthly Report**

Councillor Pope discussed the Cemetery sketch.

Councillor Pope discussed the tree grinding price and asked what last year's price is.

Councillor McCotter asked if there is a policy on notifying commercial tenants.

J. Kelly replied that the contractor is being asked to communicate much more effectively.

## **7.2. Church and Station Street**

Mayor Grose discussed the reported accidents for Church and Station Street. This intersection is ranked 7th in the Town. The main intersection for accidents is Queen and Wellington Street. If we put up a larger sign it will not stop the recurrent inattentive drivers. This section does not seem to warrant the high cost of the flashing lights.

Councillor Osborne discussed the severity of accidents rather than numbers. A light may be a good idea however. Larger stop signs are also a good idea.

Councillor McCotter discussed his opposition to the 4 way stop sign..

Councillor Winter discussed the support for a flashing light.

Councillor Hainer discussed her opposition to the 4-way stop.

Councillor Van Galen discussed his support for larger stop signs. Rumble strips will be too disturbing for neighbours however.

K. McIlwain discussed the warning sign and its merits. The main issues arise from the design of the intersection. The speed coming down the hill may need to be reduced.

Mayor Grose discussed the need to end discussion of this item as this intersection does not seem to require a large amount of money.

The Committee directed staff to increase the stop sign size, implement the yield sign, prepare a speed limit reduction and investigate the road painting.

Mayor Grose asked when this could be completed.

K. McIlwain replied that it may take 4-6 weeks.

Mayor Grose asked to see an information report regarding this issue in 4 weeks.

### **7.3. Fleet Purchase**

K. McIlwain discussed the options for a new fleet purchase.

Councillor Van Galen discussed why these vehicles were not included in the budget.

Councillor Osborne asked what the fleet replacement fund is at.

J. Brown replied that that information is not in front of him.

Councillor Winter discussed the fleet purchase schedule.

K. McIlwain discussed the underfunding of the previous garbage truck.

Councillor Osborne asked what budget effects the purchases would have.

K. McIlwain discussed that further discussion of the purchase would need to be made in-camera as it affected labour relations.

The Committee agreed to go in-camera at the end of the meeting.

### **7.4. Hospital Fundraiser Road Closure**

Councillor Hainer asked if the state of the road will continue to be safe where it is proposed.

J. Kelly replied that the excavation is not in the proposed road closure area.

Moved By: Councillor Winter

Seconded By: Councillor McCotter

That Council allow the St. Marys Memorial Hospital Foundation to hold their annual CKNX Radiothon occupying a section of Wellington Street from Queen to Station Street on Saturday, October 20, 2012 from 11:00 a.m. to 12 noon.

**CARRIED**

## **8. ADMINISTRATION**

### **8.1. Monthly Report**

Councillor Winter asked about the internal labour trend study.

K. McIlwain explained the purpose of the study.

Councillor McCotter asked about the upcoming budget meeting and if information will be prepared in advance.

J. Brown that the information is still being gathered, but at this point draft budget numbers are not fully prepared. The meeting will be a larger overview of the budget.

Councillor Pope asked about the tennis court lights information will come back and about downtown lighting.

K. McIlwain replied that G. Brouwer is working on this report for the tennis court lights.

Councillor Pope discussed the skate park.

K. McIlwain replied that that topic is moving at the moment.

## **9. OTHER BUSINESS**

### **9.1. Heritage Conservation District Public Meeting**

Councillor Pope declared a pecuniary interest on this item as she owns property in the proposed district.

Councillor Van Galen would like to know how Council will make a decision on the HCD.

K. McIlwain suggested that this discussion be held on Committee of the Whole Day 1 when T. McKibbin can be present.

Councillor Osborne discussed that the Heritage Committee hopes to bring this item to the October Council meeting as well.

The Committee directed staff to bring this item to COTW Day 1.

**10. In-Camera**

Moved By: Councillor Pope

Seconded By: Councillor Hainer

That the Committee of the Whole move in-camera to discuss items of labour relations related to the fleet purchase.

**CARRIED**

Moved By: Councillor Osborne

Seconded By: Councillor McCotter

That the Committee of the Whole return to open session at 08:03 PM

**CARRIED**

**10.1. Fleet Purchase**

Moved By: Councillor Van Galen

Seconded By: Councillor Hainer

That Council give approval for staff to proceed with the municipal fleet purchase for a truck or loader depending on availability and potential discounts due to available stock in the market place.

**CARRIED**

**11. ADJOURNMENT**

Moved By: Councillor Osborne

Seconded By: Councillor McCotter

That the Committee of the Whole adjourn at 8:04 PM

**CARRIED**





**BURNSIDE**

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**Appendix B**  
**Minutes of Council Meeting,**  
**September 25, 2012**



**MINUTES:  
OF A REGULAR MEETING OF THE COUNCIL  
OF THE TOWN OF ST. MARYS**

**September 25, 2012  
6:00 P.M.  
Council Chambers, Town Hall**

**MEMBERS IN ATTENDANCE:**

**Mayor Grose  
Councillor Hainer  
Councillor Winter  
Councillor Van Galen  
Councillor Pope  
Councillor McCotter**

**REGRETS:  
Councillor Osborne**

**STAFF IN ATTENDANCE:  
K. McLlwain, CAO/Clerk  
N. Atlin, Deputy Clerk**

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**1. CALL TO ORDER**

By Mayor Grose at 6:00 p.m.

**2. OPENING PRAYER**

Councillor Winter led proceedings in prayer.

**3. DECLARATIONS OF PECUNIARY INTEREST**

None.

**4. COUNCIL MINUTES**

**4.1.Regular Meeting of Council - August 28, 2012**

**4.2.Special Meeting of Council - September 17, 2012**

**5. CONSENT AGENDAS**

**5.1.General Items**

Councillor Winter discussed the letter from Perth South. He is looking forward to the presentation from the UTRCA.

Councillor Hainer asked when the timing would be best to support the motion.

K. McLlwain replied that the best opportunity to provide input to the UTRCA is at this point.

Councillor Van Galen asked to remove item 5.1.4 from the consent agenda.

**Motion No. 114-2012**

**Moved By:** Councillor Van Galen

**Seconded By:** Councillor Pope

That the General Consent Agenda items 5.1.1 to 5.1.5 excluding 5.1.4 be adopted by Council.

**CARRIED**

5.1.1. Regular Meeting of Council - August 28, 2012

That Council approves the minutes of the Regular Meeting of Council of August 28, 2012.

**CARRIED**

5.1.2. Special Meeting of Council - September 17, 2012

That Council approves the minutes of the Special Meeting of Council of September 17, 2012.

**CARRIED**

5.1.3. Proclamation Request - Early Childhood Educator Appreciation Day

The Council declare October 24, 2012 “ECE Appreciation Day” in the Town of St. Marys.

**CARRIED**

5.1.5. Restorative Justice Week Proclamation Request

That Council receive the letter from the Correctional Service of Canada as information.

**CARRIED**

5.1.4. Letter from Perth South - UTRCA Memo Concern

Councillor Van Galen discussed the memo from the UTRCA. He then discussed the substantial contribution from municipalities to the UTRCA for the new office building that recently occurred.

Councillor Winter discussed the need for the UTRCA to lower their budget outlook.

Councillor Pope discussed the need to request a business plan to outline each new initiative.

**Motion No. 114a-2012**

**Moved By:** Councillor Van Galen

**Seconded By:** Councillor Pope

That Council receive the correspondence from the Township of Perth South and lend our support to Perth Sound in expressing our concern and request UTRCA make further reductions to their budget. .

**CARRIED**

## **5.2. Committee of the Whole**

### **Motion No. 115-2012**

**Moved By:** Councillor Winter

**Seconded By:** Councillor Hainer

That the Committee of the Whole Consent Agenda items 5.2.1 to 5.2.6 be adopted by Council.

**CARRIED**

#### 5.2.1. Minutes - COTW Day 1 - September 4, 2012

That Council accepts the draft minutes of the Committee of the Whole Day 1 dated September 4, 2012.

**CARRIED**

#### 5.2.2. Minutes of COTW Day 2 - September 18, 2012

That Council accepts the draft minutes of the Committee of the Whole Day 2 dated September 18, 2012.

**CARRIED**

#### 5.2.3. Proclamation Request - *inmotion* Month

That Council declare the month of October 2012 “in motion” month in the Town of St. Marys.

**CARRIED**

#### 5.2.4. Proclamation Request - Community Support Month

That Council declare October as Community Support Month in the Town of St. Marys.

**CARRIED**

#### 5.2.5. Landfill Expansion Environmental Assessment Terms of Reference

That Council approves the Proposed Terms of Reference for the St. Marys Landfill Site Expansion Environmental Assessment, the Record of Public Consultation and additional supporting documentation and directs staff to submit these documents to the Ministry of the Environment for approval.

**CARRIED**

#### 5.2.6. Hospital Fundraiser Road Closure

That Council allow the St. Marys Memorial Hospital Foundation to hold their annual CKNX Radiothon occupying a section of Wellington Street from Queen to Station Street on Saturday, October 20, 2012 from 11:00

a.m. to 12 noon.

**CARRIED**

## **6. BY-LAWS**

### **6.1. Benefits Consortium**

Councillor Van Galen discussed this item from the Spruce Lodge meeting and asked whether Spruce Lodge would also be able to join the consortium.

K. McLlwain replied that if the experience rating is similar to the consortium then they may consider it.

**Moved By:** Councillor Van Galen

**Seconded By:** Councillor Pope

That Council read by-law 58 of 2012 a first and second time. By-law 58 of 2012 being a by-law to authorize the Town of St. Marys to enter into an Agreement with the Huron County Benefits Consortium.

**CARRIED**

**Moved By:** Councillor Van Galen

**Seconded By:** Councillor Pope

That we take by-law number 58 of 2012 as read a third time and finally passed.

**CARRIED**

### **6.2. Corporate Document Approvals Policy**

Councillor McCotter asked the Clerk how to show that his vote will be a negative for this item.

K. McLlwain replied that a recorded vote is the official method but that some items may be recorded in the minutes.

Councillor Van Galen asked what Councillor McCotter's concerns are.

Councillor McCotter discussed that he does not understand fully why this document is needed.

K. McLlwain discussed the need to firmly define how some documents are brought forward and approved by Council.

Council discussed reporting requirements under the Municipal Act.

**Moved By:** Councillor Pope

**Seconded By:** Councillor Van Galen

That Council read by-law 59 of 2012 a first and second time. By-law 59 of 2012 being a by-law to adopt the Corporate Document Approvals Policy for the Town of St. Marys

**CARRIED**

**Moved By:** Councillor Pope

**Seconded By:** Councillor Hainer

That we take by-law number 59 of 2012 as read a third time and finally passed.

**CARRIED**

## **7. UNFINISHED BUSINESS**

Councillor Van Galen discussed the need to add item 8.3 Council Activity reports.

**Motion No. 116-2012**

**Moved By:** Councillor Van Galen

**Seconded By:** Councillor Winter

That Council add item 8.3 - Council Activity Reports.

**CARRIED**

**8.1. MIII Asset Management Funding Application**

Councillor Hainer asked if the plan will remain a priority should the funding not be received.

K. McLlwain replied that this plan would still be a priority as future funding opportunities will require it.

**Motion No. 117-2012**

**Moved By:** Councillor Winter

**Seconded By:** Councillor Hainer

That Council certify that the information contained in the Expression of Interest is factually accurate. Additionally, Council hereby declares that the development of an asset management plan which includes all of the information and analysis described in Building Together: Guide for Municipal Asset Management Plans to be a priority.

**CARRIED**

**8.2. Picnic Table Fee Waiver**

**Motion No. 118-2012**

**Moved By:** Councillor Winter

**Seconded By:** Councillor Hainer

That Council waive the single instance of the picnic table fees for the Army Navy Air Force and Nic and Dan's Collision as both events benefitted the community in the Town of St. Marys during the Stonetown Heritage Festival.

**CARRIED**

**8.3. Council Activity Reports**

Councillor Van Galen discussed the item of the contraband tobacco which was discussed at the Perth District Health Unit. This letter of support is being further circulated.

Councillor Hainer discussed her attendance at the second Drug Strategy Task Force.

**8. NOTICE OF MOTIONS**

None.

**9. QUESTION PERIOD**

Frank Doyle - asked if the By-law Enforcement officer has been reduced to two days a week.

K. McLlwain replied that that is correct.

Frank Doyle asked which by-laws he is enforcing.

N. Atlin discussed the by-laws which are currently being enforced.

Stew Slater asked how many parking tickets had been issued.

N. Atlin replied that he will investigate that question and reply directly.

## **10. IN-CAMERA**

**Moved By:** Councillor Hainer

**Seconded By:** Councillor Winter

That Council move in-camera to discuss items subject to solicitor-client privilege

**CARRIED**

**Moved By:** Councillor Pope

**Seconded By:** Councillor Hainer

That Council return to open session at 7:02 PM

**CARRIED**

**Moved By:** Councillor Van Galen

**Seconded By:** Councillor Winter

That Council move in-camera to discuss an item pertaining to an identifiable individual

**CARRIED**

**Moved By:** Councillor Winter

**Seconded By:** Councillor Hainer

That Council return to open session at 7:16 PM

**CARRIED**

### **6.3 CBHFM Agreement**

#### **Motion No. 119-2012**

**Moved By:** Councillor Van Galen

**Seconded By:** Councillor McCotter

That Council remove item 6.3 CBHFM Agreement from the Agenda.

**CARRIED**

## **11. CONFIRMING BY-LAW**

### **11.1. Confirmatory By-law**

**Moved By:** Councillor Van Galen

**Seconded By:** Councillor Pope

That Council read by-law 61 of 2012 a first and second time. By-law 61 of 2012 being a by-law to confirm all actions and proceedings of Council.

**CARRIED**

**Moved By:** Councillor Van Galen

**Seconded By:** Councillor Pope

That we take by-law number 61 of 2012 as read a third time and finally passed.

**CARRIED**

## **12. ADJOURNMENT**

### **Motion No. 120-2012**

**Moved By:** Councillor McCotter

**Seconded By:** Councillor Pope

That this meeting of Council adjourn at 7:19 p.m.

**CARRIED**



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**Appendix C**  
**Technical Memo – Energy from**  
**Waste Option**





**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Technical Memorandum

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**Date:** April 9, 2013 **File No.:** 300032339  
**Project:** St. Marys Future Solid Waste Disposal Needs  
Environmental Assessment  
**From:** Andrew Evans, James Hollingsworth  
**Re:** Thermal Waste Treatment Processes; Applicability

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### 1.0 Introduction

As part of the efforts being undertaken to update the Town of St. Marys solid waste disposal solutions in preparation for their existing site reaching its approved capacity in 2015, several alternative options have been considered. This document is intended to serve as a review of the suitability for the Town to adopt some type of thermal waste treatment, commonly referred to as waste-to-energy or incineration. This memo outlines some of the available thermal waste treatment processes to determine their suitability for a community of this size and reviews available literature surrounding their implementation.

### 2.0 General Scope

The Town of St Marys is considering alternative sources of energy and waste disposal methods. To properly evaluate these we refer to six guiding principles prepared by the Resource Recovery Committee of the Ontario Waste Management Association<sup>1</sup>. These allow for the evaluation of thermal technologies when considering long term waste management options. They are not intended to be prescriptive, but rather to support system and technology evaluation processes and to provide a baseline from which community and developer specific needs can be incorporated.

In summary these principles are:

1. The waste hierarchy<sup>2</sup> shall be the guiding principle for management of wastes.
2. Resource management options should reflect community needs and be based on the fundamental principles of sustainability.

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<sup>1</sup> OWMA's *Guiding Principles, Integrated Solid Waste Resource Recovery and Utilization*, <http://www.owma.org/Publications/OWMAReportsandPolicies/tabid/180/ctl/DisplayAttachment/mid/624/AnnotationId/794cb615-d7d9-e211-9cac-00155d607900/Default.aspx> (retrieved June 20, 2012).

<sup>2</sup> OWMA's hierarchy can be found at <http://www.owma.org/Issues/WasteHierarchy.aspx> (retrieved June 20, 2012), though other hierarchies may be considered as well.

3. Resource Recovery and Efficiency should be recognized to incent construction and operation.
4. Use of Facilities should be consistent with best economic, environmental and public health practices and implement Best Available Technology.
5. Emissions requirements should be science based and subject to change only at pre-determined intervals.
6. Facility owners/operators shall be committed to the investigation and implementation of continuous improvement initiatives.

For principles 2, 3 and 4 in particular to be satisfied, the quantity and quality of an available waste stream would have to meet minimum requirements for the technology in question. Particular to this case the size of St. Marys (~6,500 people) is relatively small, and impacts its ability to reliably supply a high quantity of waste. Further, the small town size implies that there is a similarly sized tax base, limiting the Town's ability to implement either a higher cost, or a higher risk solution.

### **3.0 Applicability of Typical Technologies**

Typically, traditional mass burn technologies (incineration) have been limited to higher population centers that possess significant quantities of waste to provide the required economy of scale. Generally, they require a population of about 250,000 households, or roughly 720 t/d of waste<sup>3</sup>.

More recent established technologies tend to be applicable to smaller scale communities (5,500 households to 20,000 households) with some technologies estimated to be suitable as low as 2,500 households, as is the case with a batch operated two-staged combustion system being suitable for as low as 10 tonnes per day<sup>4</sup>. St. Marys most recent landfill weigh scale data indicates they received approximately 4,150 tonnes of waste in 2012 or approximately 11.4 tonnes per day. This makes the Town suitable for the small scale systems, namely the two stage combustion batch/ semi-batch operated system.

There is some evidence indicated that fluidized bed technology may also be applicable at this scale. However, there has not been sufficient demonstration of this technology to date to warrant the risk of adopting it as the preferred solution. The limiting factor is the significant operational costs from an energy standpoint to fluidize the waste.

Based on the above the remainder of this document will focus primarily on the two stage batch/ semi-batch type process.

### **4.0 Summary of Technology**

The two stage incineration is a widely used technology which allows combustion of wastes on a smaller scale. An excerpt from the document entitled '*Solid Waste as a*

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<sup>3</sup> Federation of Canadian Municipalities, '*Solid Waste as a Resource Guide for Sustainable Communities*', 2004, accessed June 19, 2013.

[http://www.fcm.ca/Documents/tools/GMF/Solid\\_waste\\_as\\_a\\_resource\\_en.pdf](http://www.fcm.ca/Documents/tools/GMF/Solid_waste_as_a_resource_en.pdf)

<sup>4</sup> ibid

*Resource, Review of Waste Technologies'* providing a relevant summary of this technology has been included as Appendix A.

A note on this technology is the high heat required in the second combustion stage to minimize the formation of combustion by-products. This requires an additional fuel feed.

#### **4.1 Operational Considerations**

Depending on the feed method chosen (batch or semi-continuous) the operational considerations will vary. In the case of a semi-continuous feed, staff will be required to monitor the system and periodically load the hopper when the system is running (depending on selected size and generation rates this could be up to 24 hours per day, 365 days per year).

Also noted in the summary was that the pollution control technology adapted varies. It is presumed that for a municipal project the Town will be pushed by its residents to adopt one of the more conservative technologies in terms of performance capability, likely at a higher cost than the minimum requirements.

#### **4.2 Energy Recovery**

It should be noted that one of the typical driving forces behind the adaptation of an incineration technology is the potential for energy recovery. Larger scale systems are typically able to be operated to produce both electricity and heat, while smaller systems tend towards steam, or heated water<sup>5</sup>. The scale of this project limits the generation to low pressure steam or hot water. The Town itself would have limited use for this type of energy, in part due to the location of the landfill on the edge of Town. However, the St. Marys cement facility located adjacent to the landfill may be a potential user; this would likely require additional equipment being installed to transport as well as utilize the steam. In addition if a project was undertaken, there would potentially be contractual implications regarding the quantity of heat supplied which could limit the Town's future options.

#### **5.0 Products of Combustion**

As with any waste management technology, several by-products are created as a result of the incineration technologies.

##### **5.1 Solid Products**

###### **5.1.1 Bottom Ash**

Typically bottom ash ranges from about 20-30% of the original mass of the waste with an increased volume reduction (up to 90%)<sup>6,7</sup>. This is important as it means the Town

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<sup>5</sup> Eco Solutions Inc, '*Energy From Waste*'

[http://www.ecosolutions.com/index.php/screen/energy\\_recovery](http://www.ecosolutions.com/index.php/screen/energy_recovery), accessed June 19, 2013

<sup>6</sup> Department for Environment Food & Rural Affairs, '*Incineration of Municipal Solid Waste*' February 2013. Accessed June 19, 2013.

would require ash disposal. There are claims that this material can be reused for road construction but this is typically done only on site or if there are commercial buyers available within a reasonable hauling distance. Alternatively the ash is disposed of to a landfill, subject to MOE approval and a local landfill being willing to accept the ash. The ash may, in some cases, be used as an alternative cover material, however if this is not approved, they Town may still be required to undertake an EA to build a landfill for the ash or pay surcharge fees to deposit it at other sites.

### **5.1.2 Fly Ash**

Fly or top ash is the particulate matter removed by the air pollution control systems. Typically for larger scale systems it is expected that the mass is about 2-6% of the input mass<sup>8</sup>, although this number is smaller for the two-stage incineration due in part to both a reduced production rate as a result of incinerator design, and a typically lower capture efficiency due to the small systems not possessing extensive pollution control systems.

A concern with the top ash is that this ash is often defined as a *hazardous* material and then required to be shipped to an appropriate receiver. There are limited Ontario options for such receivers, resulting in a higher tipping fee. The ash may not be hazardous but requires testing to ensure that is the case, and results in a liability risk if an incorrect test comes back and removal of materials is required. This was an issue which occurred recently in British Columbia surrounding heavy metal levels in the ash.

## **5.2 Air Emissions**

### **5.2.1 Particulate Air Emissions**

Particulate emissions occur as airborne solids that are generated as part of the combustion process, and are not captured as ash. Particulate materials are currently regulated at the 2.5 or 10 micron level. Particulate matter emissions will vary with location based on waste characteristics as well as emission control technology.

The ability of a particle to cause an effect is inversely related to particle size typically 2.5 micron particles are referred to as posing a greater risk of impact, although claims exists that the emissions are not being effectively regulated.<sup>9</sup>

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[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/181825/pb13889-incineration-municipal-waste.pdf.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/181825/pb13889-incineration-municipal-waste.pdf.pdf)

<sup>7</sup> Eco Solutions Inc, 'Performance'

[http://www.ecosolutions.com/index.php/screen/technology\\_performance](http://www.ecosolutions.com/index.php/screen/technology_performance), accessed June 19, 2013

<sup>8</sup> Department for Environment Food & Rural Affairs, 'Incineration of Municipal Solid Waste' February 2013. Accessed June 19, 2013.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/181825/pb13889-incineration-municipal-waste.pdf.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/181825/pb13889-incineration-municipal-waste.pdf.pdf)

<sup>9</sup> Town of Oakville. *The Need for a new Act or Regulation to Protect Public Health From PM<sub>2.5</sub> in Ontario Air*. April 2010. Accessed June 19, 2013. <http://www.oakville.ca/assets/general%20-%20environment/EBRAApplication-Supplimentary-2010Apr.pdf>

### 5.2.2 Dioxins and Furans

Dioxins and Furans are a commonly discussed issue with incinerators as they are considered to be highly toxic, readily bio-accumulate in animal fats, and are further bio-accumulated in newborns during fetal development and nursing. They are produced during non-ideal combustion conditions that result from the formation of temperature gradients and low temperature pockets.

There is some discussion of the applicability of current air quality testing for dioxins. Currently this is done once annually, under ideal operating conditions<sup>10</sup>. This means that the time period when emissions normally peak (during startup and shutdown<sup>11</sup>) are not captured during testing. The use of the semi continuous or batch processes which cycle temperatures by nature are particularly susceptible to this, although the fired heating of the second stage is designed to minimize the impact. Operational loadings will need to be tuned in order to minimize both the potential production rates of by-products as well as the consumption of secondary fuels.

### 5.2.3 Nanoparticles

Nanoparticles are also a contaminant of emerging concern. As such their potential for environmental damage is not well understood. They are also currently unregulated, and have become a hot button issue for opposition groups. The concern here is that they can readily cross the lung membranes, as well as the blood brain barrier – and are comprised of heavy metals (lead, cadmium, etc.). Currently and past uses for these materials have been as biocides (such as silver for odour reducing clothing) which serves to support the potential for environmental risk.

## 6.0 Economics

Based on the technology summary economics for these types of systems can vary significantly, presumably based significantly on selected emission controls, throughput considerations, and ash disposal. It was highlighted that the technology applied at the required sizings tends to be favoured in more remote areas where no alternatives exist such as landfilling being unsuitable due to ground conditions. This is somewhat supported by the higher rate of adaptation in Europe, where land prices are typically much higher than in rural Ontario. The potential requirement of the construction of a landfill (although potentially smaller), to be able to handle the produced ash could be significant. Additionally, the capital costs for both the incineration technology and landfill construction would be likely required within a short time period. This would be a significant concern based on the community size of St. Marys.

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<sup>10</sup> Ontario Ministry of the Environment. 'Guideline A-8 – Guideline for the Implementation of Canada-wide Standards for Emissions of Mercury and of Dioxins and Furans and Monitoring and Reporting Requirements ...' August 2004. Accessed June 19, 2013.  
[http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01\\_079113.pdf](http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01_079113.pdf)

<sup>11</sup> Tejima H, *Characteristics of dioxin emissions at startup and shutdown of MSW incinerators*, **Chemosphere**. 2007 Jan;66(6):1123-30. Epub 2006 Jul 24.

The only similar environmental approval process in Ontario in the past twenty years or so has been the Durham-York Energy Centre. It cost \$15 million and took six years to complete the environmental approval process<sup>12</sup>. This excludes the cost to construct and operate the facility.

Other facilities are currently in the planning stage, primarily by private developers whom do not release their costing information. At the OWMA "Resource Recovery 101" seminar on September 28, 2012, several of the developers indicated that air pollution control technology costs for these thermal treatment systems were such that they were only considering facilities that could process a minimum of 100,000 tonnes/year (about 275 tonnes/day). A facility for St. Marys would be about 20 times too small.

## **7.0 Conclusion**

Based on a review of the material presented in this memo there are several factors that indicate thermal treatment technologies are not well suited for the Town of St. Marys.

From a financial perspective, the requirement for the capital purchase for an incinerator, with additional Air Pollution Controls presents a prohibitively large hurdle. Additionally the requirements for a fuel supply to ensure proper combustion, as well as securing capacity for ash disposal (both fly and bottom) indicate that this type of system may not provide optimal performance for a community of this size. Particularly when it is considered that limited opportunities for energy recovery exists when compared to larger applications of the same technology.

From an environmental and health perspective the current indication is that the relevant parameters may not be currently regulated at an appropriate level. While this does not present a technical hurdle to obtaining an approval presently, it is possible that future site alterations may result in required upgrades to technology. It should also be noted that in the case of incineration, the typical community opposition that occurs as a result of questions existing regarding the perceived health risks is a significant hurdle for a municipally funded project.

Based on the above factors it is unlikely that a thermal treatment technology will prove to be an appropriate solution for St. Marys. As such there is sufficient information to eliminate the option from proceeding further through the EA process.

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6/21/2013 8:45 AM

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<sup>12</sup> Durham Region presentation to OWMA "Resource Recovery 101" seminar, Sep. 28, 2012.



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**Appendix D**  
**Technical Memo – Criteria for the**  
**Identification of a New Landfill Site**



## Technical Memorandum

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**Date:** June 21, 2013 **File No.:** 300032339  
**Project:** St. Marys Future Solid Waste Disposal Needs  
Environmental Assessment  
**From:** Andrew Evans, James Hollingsworth  
**Re:** Candidate Landfill Site Areas

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### 1.0 Introduction

As part of the evaluation of options to serve the Town of St. Marys solid waste needs, Burnside has evaluated the potential for locating either a new landfill or expanding an existing landfill within the Town. To do this, we have undertaken the following steps:

- Footprint size determination to indicate the minimum area required to accommodate such a landfill site.
- Constraint mapping of the Town to find areas where a landfill site may be accommodated.

We note that this initial constraint mapping and site sizing exercise merely identifies areas that warrant additional consideration.

### 2.0 Footprint Size Determination

The disposal needs for St. Marys are being assessed with a 40 year planning period. The landfill size was determined from the Environmental Assessment criteria and based on the selected 40 year site life span design criteria, the population growth and existing waste generation rates, result in a total volume being required of 535,000 m<sup>3</sup>

A model was used to determine the approximate size of the required landfill based on Ministry guidelines<sup>1</sup>. We also considered the approximate local construction extents for existing landfills with respect to ultimate height and depth of excavation. Two simple footprint geometries, a square and a rectangle with a length to width ratio of 2:1 were used to determine the initial screening area.

The design criteria used within the model are described in Table 1, and the resulting area requirements are shown in Table 2. These area requirements represent the

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<sup>1</sup> *Landfill Standards: A Guideline on the Regulatory and Approval Requirements for New or Expanding Landfilling Sites*, dated January 2012.



minimum area required to accommodate the waste footprint, and the recommended buffer area. As such any property with a total available area of less than these values can be deemed to be unsuitable for landfill development as it does not provide sufficient space to accommodate the required lifespan.

**Table 1 – Design Parameters**

Parameter	Value
Volume Required	535,000 m <sup>3</sup>
In-Situ Waste Density <sup>†</sup>	450 kg/m <sup>3</sup>
Waste to Cover Ratio	4:1
Maximum Landfill Height Above Grade	9 m
Maximum Depth of Excavation	4 m
Minimum Buffer	100 m
Maximum Slope (Above Ground)	4:1
Maximum Slope (Above Ground)	20:1
Minimum Slope (Below Ground)	3:1

<sup>†</sup> In-Situ Waste Density is the mass of waste per volume of airspace. It ignores the mass of cover materials, but includes the volume occupied by cover materials.

**Table 2 – Resulting Required Footprints**

Geometry	Footprint Area
Square	20.9 ha
Rectangular with 2:1 Ratio	20.1 ha

### 3.0 Study Area and Exclusion Criteria

The study area for the landfill placement will be limited to the properties located within the Town of St. Marys. All areas within the Town will be considered initially without limitations as a result of municipal planning. In order to determine potential site areas, criteria have been developed which will eliminate areas of the Town based on various factors such as drinking water protection.

These initial criteria are proposed based on typical requirements of several previous landfill siting studies conducted in other Ontario municipalities. We have also considered regulatory criteria from elsewhere in Canada that are typically applied in Ontario. The exclusionary criteria are discussed in the following subsections.

As noted above on Table 1, the landfill property itself will include a minimum of 100 metres of buffer – measured from the ultimate limit of fill to the site’s property line.<sup>2</sup> Operational facilities, such as public drop-off areas, Municipal Hazardous and Special Waste (MHSW) depots, site stormwater controls, equipment storage/maintenance buildings, the weigh scale and scale house, and many other facilities are typically located within this landfill buffer area. The exclusionary constraints discussed below add to this buffer. Figure 1 depicts the results of applying the constraints to the St. Marys area.

<sup>2</sup> *Landfill Standards: A Guideline on the Regulatory and Approval Requirements for New or Expanding Landfilling Sites*, dated January 2012.

### 3.1 Source Water Protection Areas

The Town of St. Marys relies on groundwater as a drinking water supply for its residents. Several different levels of wellhead protection areas have been previously established in order to minimize the risks due to various activities within these zones.

Due to the increased levels of risk to the municipal water supply the landfill site will not be located within a wellhead protection area (WHPA) with any of the following vulnerability ratings<sup>3</sup>:

- WHPA-A: Radius=100m @centre of well
- WHPA-B: Time of Travel (ToT)  $\leq$  2yr (excluding WHPA-A)
- WHPA-C: Time of Travel (ToT)  $>$  2yr but  $\leq$  5yr
- WHPA-D: Time of Travel (ToT)  $>$  5yr but  $\leq$  25yr
- WHPA-E: at the interaction point between GW and SW or at the point that SW connects to GW

WHPA-E areas are noted to lie within an intake protection zone, in this case consisting of areas surrounding significant surface water bodies upstream of the well area, where surface water quality is likely to influence groundwater quality. Due to the potential of an increased risk to community health, the landfill will not be located within the WHPA-E area.

### 3.2 Surface Water

The Thames River which travels through the community is a significant surface water body to several communities within the area. The river is fed by several tributaries located within the area. In addition, the river serves as a habitat for several species. Surface water bodies tend to have significant flow rates. In order to minimize any risk to the environment from site operation, it is recommended that the landfill be constructed with a setback of at least 100 m of natural water features (i.e. not man made stormwater ponds). This will overlap with much of the floodplain area, which is covered under a separate constraint.

### 3.3 Floodplain

The St. Marys area has historically experienced significant flooding events. Due to the environmental risks that can result from a landfill experiencing flooding O.Reg. 157/06 specifies the 1:250 year return serves as the flood standard for the Upper Thames Region. As a result the 250 year floodplain will act as a location constraint for any candidate sites.

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<sup>3</sup> Ministry Technical Bulletin dated July 2009, [http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01\\_079535.pdf](http://www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/std01_079535.pdf), retrieved June 21, 2013.

### **3.4 Aggregate Extraction**

Aggregate Extraction is a vital part of the local economy with related activities employing a significant number of people in the surrounding the area. As a result, this means that the location of a landfill site which interferes with existing aggregate extraction operations should be avoided. To ensure there is no interference with short-term extraction plans, we have selected a setback of an additional 0 m from active operations. This results in a minimum buffer existing between the landfills active area and extraction activities of 100 m the on-site buffer.

### **3.5 Residential Developments**

It is not the Town's intention to displace, or devalue the properties of any local residences with the construction of the landfill. The small size of the community means that landfill construction near to established residences will likely have a significant impact on the town from an economic and public feedback perspective.

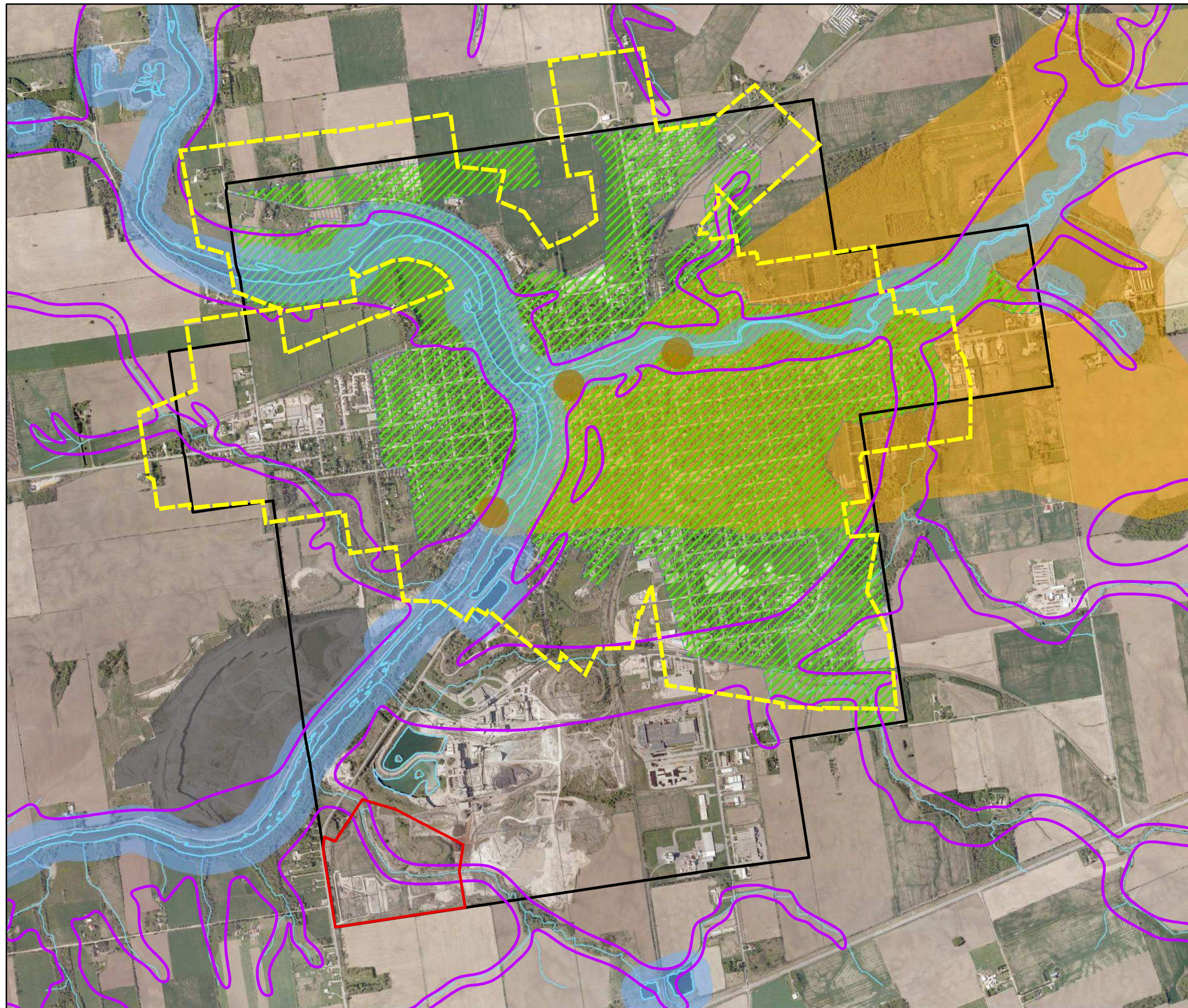
Existing landfills similar in size, daily waste receipts and overall operations to those expected for the future St. Marys landfill, nuisance impacts – noise, dust, litter and odour – are typically controlled within 300 to 400 metres of the waste footprint. Using 300 metres, and subtracting the 100 m buffer proposed for the site results in a need for a setback of an additional 200 metres from existing residential properties. While there is no specific Ontario requirement or guideline in this regard, we note the Manitoba criteria under MB Reg.150/91.

It is not the intention of this setback to limit future development within the 200 metre zone of this constraint. This constraint is to protect existing residents from potential landfill impacts that were unanticipated at the time of their property purchase. Purchasers of future residential developments (homes) would be aware of the landfill site and could judge the potential nuisances against the sale value of the home.

### **4.0 Conclusion**

Based on the presented criteria the largest suitable area to support the development is a roughly triangular shaped area 17.6 hectares in size located adjacent to the northern edge of town, east of the Thames River. The size of the parcel mean that the site is unable to provide the amount of capacity required by the town and is thus unsuitable.

The absence of any sites large enough to support the development of a new footprint in the area of the Town indicates that the development of a new footprint within the Town's borders is an unsuitable alternative for inclusion as part of the EA studies.

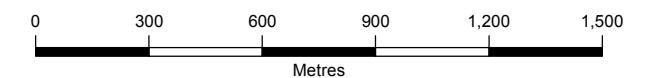
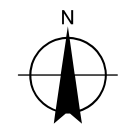


**FIGURE 1**  
**TOWN OF ST. MARY'S**  
**ST. MARY, ONTARIO**  
**LANDFILL ASSESSMENT**  
**CONSTRAINTS MAPPING**  
**TO DETERMINE**  
**CANDIDATE AREAS**

**Legend**

- EXISTING LANDFILL
- LOT LINE
- TOWN LIMIT
- WATERCOURSE
- 200m BUFFER AROUND RESIDENTIAL AREA
- 100m BUFFER AROUND OPEN WATER
- FLOOD PLAIN
- WHPA A
- WHPA B
- WHPA C
- WHPA D
- WHPA E
- OPERATING AGGREGATE EXTRACION OPERATIONS

***DRAFT***



1:20,000  
 June 2013  
 Project Number: 300032339

Projection: UTM Zone 17  
 Datum: NAD83

Prepared by: S. Ker

Verified by: J. Hollingsworth





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**Appendix E**  
**Record of Consultation**



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

**Town of St. Marys  
Solid Waste Disposal  
Individual Environmental  
Assessment**

**Terms of Reference**

**Consultation Summary**

*Prepared By:*

---

R.J. Burnside & Associates Limited  
1465 Pickering Parkway Suite 200 Pickering ON L1V 7G7

*Prepared for:*

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Town of St. Marys

December 2013

File No: 300032339

The material in this report reflects best judgement in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. R.J. Burnside & Associates Limited accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

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**Attachments**

- E1 CRA Consultation Record (2006-2010)
- E2 CRA Consultation Summary (2010-2013)
- E3 Additional Aboriginal Consultation Undertaken by Burnside (2013)
  - E3a Aboriginal Consultation Summary
  - E3b Consultation with HDI and HCCC
  - E3c Project Re-Introduction Letters
  - E3d TOR Submitted for Review and Comments
- E4 Additional Agency Consultation Undertaken by Burnside (2013)
  - E4a Agency TOR Review
- E5 Additional Landowner Consultation Undertaken by Burnside (2013)

## 1.0 Introduction

The Town of St. Marys has initiated an environmental assessment process to review options to address their solid waste disposal needs for the next 40 years.

Preparation of the Terms of Reference (TOR) for the Environmental Assessment (EA) commenced in 2006 and included an initial public information open house on October 30, 2006 followed by another on December 3, 2009. The Town decided to put its EA process temporarily on hold while land ownership issues were resolved. The St. Marys Landfill Site is now owned by the Town. Town Council has therefore decided to move forward with the environmental assessment and so has resumed the TOR preparation process.

Conestoga-Rovers & Associates Ltd. (CRA) was originally retained by the Town to undertake the TOR process between 2006 and the early part of 2013. As such, much of the consultation work associated with the TOR was undertaken and documented by CRA.

In March 2013 the Town retained R.J. Burnside & Associates (Burnside) to finalize any remaining work on the TOR and complete the EA process. Given the length of time since the TOR was initiated and the updates that have been made to environmental assessment legislation and guidance documents since that time, it was deemed prudent to review the consultation contact lists to ensure that all interested stakeholders have been made aware of the project and have been given an opportunity to participate. Through this review, it was found that some additional consultation with Aboriginal communities should be undertaken.

In addition to Aboriginal consultation, Burnside was in close contact with MOE staff throughout their 2013 involvement in the project. Several meetings were held in addition to email and mail correspondence.

This document summarizes all consultation activities that have occurred throughout the life of the TOR, including:

- Consultation undertaken by CRA between 2006-2010;
- Consultation undertaken by CRA between 2010-2013;
- Additional Aboriginal consultation undertaken by Burnside (2013); and,
- Additional agency consultation undertaken by Burnside (2013).



## **2.0 Consultation Completed by Conestoga-Rovers & Associates Ltd.**

Throughout its involvement in the TOR, CRA completed a variety of consultation activities, including:

- Mailing out project notices;
- Holding two Public Information Centres; and,
- Corresponding with the public, agencies and Aboriginal communities.

A summary of all consultation activities undertaken by CRA is provided in the CRA report entitled *Record of Consultation*, dated November 2012. A copy of this report is included as a PDF file on CD in Attachment E1. However, Tables F1 and F2 in CRA's *Record of Consultation* only summarize comments received up to October 2010. Additional comments received by CRA since that time were documented in tabular format only and are presented in Attachment E2 of this report.

### **3.0 Additional Aboriginal Consultation Undertaken by Burnside**

Additional consultation with Aboriginal communities and organizations included:

- Mailing out project re-introduction letters;
- Undertaking follow up by telephone and email; and,
- Hosting a site visit.

Details are summarized in the following sections and in Appendix E3a.

#### **3.1 Aboriginal Consultation List**

The Aboriginal contact list was updated in 2013 to ensure all communities with a potential interest in the project were notified and given the opportunity to participate. The full list is as follows:

- Oneida Nation of the Thames;
- Munsee-Delaware First Nation;
- Chippewas of the Thames First Nation;
- Delaware Nation, Moravian of the Thames;
- Walpole Island First Nation (Bkejwanong Territory);
- Aamjiwnaang First Nation (Sarnia First Nation);
- Chippewas of Kettle and Stony Point First Nation;
- Mississaugas of the New Credit First Nation;
- Caldwell First Nation;
- Six Nations of the Grand River;
- Haudenosaunee Development Institute;
- Haudenosaunee Confederacy Chiefs Council;
- Windsor Essex Métis Council;
- Métis Nation of Ontario;
- Association of Iroquois and Allied Indians.

#### **3.2 Contact with Haudenosaunee Development Institute and Haudenosaunee Confederacy Chiefs Council**

The Haudenosaunee Development Institute (HDI) and Haudenosaunee Confederacy Chiefs Council (HCCC) were not contacted by CRA during the early TOR stages. As such, letters were sent on July 11, 2013 to inform both organizations of the project. Paper and electronic copies of the updated draft TOR prepared by Burnside were included. The letters were followed up by phone calls and emails. The HCCC was also sent an additional follow up letter on July 29, 2013.

Solid Waste Disposal EA TOR Consultation Update  
December 2013

Chief Allen MacNaughton was reached by telephone on Aug 9, 2013. He indicated that HDI would act on behalf of HCCC for such matters and no further follow up with HCCC would be required.

Ms. Hazel Hill of the HDI responded by email and in a written letter sent August 14, 2013. The letter included an indication of the HDI's interest in the project, the *Haudenosaunee Development Protocol*, the *Haudenosaunee Green Plan*, and HDI's *Application for Consideration and Engagement for Development*. This letter also indicates that the HCCC have legislated responsibility to HDI relative to HCCC's interests in this project – in keeping with Chief Allen MacNaughton's comments.

Copies of all correspondence with the HCC and HDI are provided in Attachment E3b and are summarized in Attachment E3a.

### 3.3 Project Re-Introduction Letters

Due to the lengthy history of the project and the time that has elapsed since the original Notice of Commencement, a project re-introduction letter was mailed to each Aboriginal group listed in Section 3.1. Letters were mailed August 15, 2013 and included a Confirmation of Interest Form which asked each contact to confirm their community's interest, indicate whether they would like to remain on the project mailing list and whether they would like to be sent a copy of the updated TOR.

Communities that did not provide an immediate response received follow up phone calls in August and September, 2013.

To date, the following responses have been received:

- Chippewas of the Thames First Nation indicated an interest in the project and a desire to be kept on the mailing list as the site is within their traditional territory; however, did not wish to receive a copy of the updated TOR;
- Aamjiwnaang First Nation responded with phone calls indicating their interest. The Confirmation of Interest Form was returned along with a formal letter noting their specific interests.
- Munsee-Delaware First Nation indicated in a telephone call that they have an interest in the project and would like to remain on the mailing list and receive a copy of the TOR.
- Delaware Nation, Moravian of the Thames indicated in a telephone call that they have an interest in the project and would like to remain on the mailing list and receive a copy of the TOR.
- Walpole Island First Nation indicated their interest through telephone and personal contact. A copy of the revised TOR was requested.

Solid Waste Disposal EA TOR Consultation Update  
December 2013

- Mississaugas of the New Credit First Nation indicated in a telephone call that they have an interest in the project and would like to remain on the mailing list and receive a copy of the TOR.
- Chippewas of Kettle and Stony Point First Nation responded by telephone and indicated their interest. They said that they will be sending their protocol to our attention, though this has not yet been received.
- Caldwell First Nation indicated through email that they would like to remain on the mailing list and receive a copy of the TOR.

Copies of all written responses and Burnside's telephone log are provided in Appendix E3c. Should any additional replies be received, by mail, fax, email or telephone, Burnside will track such replies and include them in subsequent EA documentation.

### **3.4 Site Visit**

During the work managed by CRA, three First Nation communities expressed an interest in meeting to discuss the TOR. Due to project delays and breaks a meeting with CRA did not occur. The following communities had expressed an interest in a site visit and were invited by email and phone calls to attend a meeting on either August 20 or 22, 2013:

- Walpole Island First Nation;
- Six Nations of the Grand River; and,
- Caldwell First Nation.

The meeting was scheduled on short notice to meet timelines associated with the EA process. As such, the representative from Walpole Island was the only person able to attend. In recognition of the short notice, an additional site visit will be scheduled early in the EA process to accommodate other interested communities.

The site visit with Walpole Island's Mr. Jared Macbeth occurred on August 20, 2013. Items discussed included:

- Site history (former clay quarry for St. Marys Cement);
- Existing landfilling operations;
- Current construction of Cell 8 (per existing landfill approvals); and,
- Scope of the work proposed for the EA as part of Burnside's revised TOR.

During the visit Mr. Macbeth noted that his community would be interested in:

- Knowing the name(s) of the original surveyors of the Town and surrounding area;

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- Receiving any historic maps, property surveys or air photos;
- Knowing the history of the existing landfill property, and accounting for the change in land use over time.

Mr. Macbeth said that the St. Marys area may be part of the "Treaty of London" territory. This has not yet been confirmed.

Burnside and the Town committed to providing the requested documentation, if available. However, this information may not be incorporated into the TOR or the subsequent EA work program.

Finally, Mr. Macbeth indicated that WIFN would like:

- To be informed of and perhaps participate in the field work that is undertaken during the EA process; and,
- Remain a part of the EA process.

### **3.5 TOR Resubmission**

- A copy of the amended draft TOR was issued to all First Nations (other than those who had opted out of receiving comments) in November 2013. See Attachment E3d for copies of this correspondence and Attachment E3a for a summary.

### **3.6 Next Steps**

The Town of St. Marys has committed to ongoing consultation with Aboriginal communities throughout the TOR and EA process, specifically:

Terms of Reference Stage:

- Follow up phone calls will be made to all Aboriginal contacts who have not responded to the re-introduction letter to confirm interest.
- A copy of the most recent TOR version will be sent to any Aboriginal community that expresses an interest in receiving it.
- All contacts will receive a copy of the Notice of Submission of the TOR (with the exception of any who indicate they have no further interest in the project).

Environmental Assessment Stage:

- Consultation with Aboriginal communities will be ongoing during the EA process.
- Subject to interest, consultation activities may include:
  - Meetings with consultation staff and/or Chief and Council;

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- An additional site visit;
- Regular project updates;
- Participation in field inventory programs;
- Other activities as deemed necessary.

#### 4.0 Additional Agency Consultation Undertaken by Burnside

Burnside staff consulted regularly with the MOE starting in March 2013. Consultation included:

- On March 21, 2013 a transfer of consultant meeting with the Town of St. Marys and Burnside staff. During this meeting, the MOE's Project Officer was contacted by telephone and briefly participated by providing a status on the background of the project from the Ministry's perspective. No meeting minutes were prepared as it was agreed to have a face-to-face meeting the following week.
- On March 28, 2013 a meeting with Town of St. Marys, MOE and Burnside staff was convened to discuss the current status of the TOR work program and efforts to finalize the TOR.
- On April 16, 2013 a conference call was held between the Town, the MOE and Burnside to discuss Burnside's plans to address MOE comments on the TOR. A table was prepared, showing the MOE comments and Burnside's response, to document the conference call. This table is included in Attachment E4.
- Email and telephone correspondence was undertaken between Burnside and the MOE, primarily focused on additional Aboriginal consultation requirements, clarifications of process needs, and requests for Time Outs to facilitate the revision of the TOR. In an email of July 9, 2013, the MOE provided a complete Aboriginal contact list for the project, which Burnside reviewed and incorporated into our consultation efforts (documented here). This email is provided in Attachment E4. The remainder of these records are not included in this report.
- A draft of the revised TOR was provided to the MOE on June 27, 2013, with a slightly modified version of the TOR (noting that it was "amended") being submitted on August 6, 2013. MOE comments on the modified TOR were received on August 26, 2013.
- A notice of the amended draft TOR and a DVD copy of the report was issued to all agency's (other than those who had opted out of receiving comments) during November 2013.
- Email and telephone discussion occurred with MNR after receiving comments on November 21, 2013. The comments primarily surrounded the aggregate extraction licenses and extraction operations surrounding the site. Modifications were made to Table 5.4 as a result.
- Comments were received from the MOE groundwater staff on December 4, 2013, no action required.
- Comments were received from the UTRCA on December 9, 2013, as a result information on the source water protection plan was added to Table 5.4, and a response email was sent December 19, 2013.

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- Comments were received from the MOE Air, Pesticides and Environmental Planning Department on December 17, 2013. In response to these comments a note on communicating and seeking opportunities for partnerships with other related/ upper tier municipalities was added.
- Comments received from the MOW London Office on December 17, 2013. No action required.
- Comments received from the MOE Surface Water group on December 17, 2013. No action required.
- An email outlining comments was received from the MTCS on December 17, 2013. As outlined in a response email, Table 5.4 and section 5.4.6 were modified to address these comments.
- Comments received from the MOE Solid Waste group on December 18, 2013. No action required.
- 

Copies of all formal correspondence are provided in Attachment E4.



## 5.0 Landowner Consultation

As the TOR had been revised since the public open house, the Town has undertaken additional consultation efforts for landowners within the local study. Landowners were notified of the availability for review of the revised TOR via the Town's web site or hard copy at Town offices.

- During November 2013, landowners within the site study area were provided with instructions to access the amended draft TOR.
- Comments were received from Passmore Farms on December 9, 2013 relating to a concern that odours may increase if the landfill is expanded. A response was sent via fax December 10, 2013.
- The delivery to Barbara McCurdy was not completed. Additional contact attempts will be made during the EA process.

Copies of all formal correspondence are provided in Attachment E5

## **6.0 Summary and Conclusions**

The Town of St. Marys has committed to ongoing and meaningful participation and consultation with the public, Aboriginal communities and agencies throughout the TOR and EA processes and beyond.

The complete consultation program undertaken during the TOR process and the proposed consultation program for the ongoing EA are documented the main Terms of Reference document.



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**Attachment E1**  
**CRA Record of Consultation**  
**(2006-2010)**  
**Provided on CD**



**BURNSIDE**

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**Attachment E2  
CRA Consultation Summary  
(2010-2013)**

**SUMMARY OF REVIEW COMMENTS**  
**PROPOSED TERMS OF REFERENCE FOR ST. MARYS LANDFILL CAPACITY INCREASE ENVIRONMENTAL ASSESSMENT**  
**TOWN OF ST. MARYS**

Source	Comment	ToR Reference	Proponent Response
<b>PROVINCIAL AGENCIES</b>			
Header Merza, Noise Section, EAB, Ministry of the Environment - Nov. 27/12	1. The following noise study items should be considered when preparing the Environmental Assessment for the St. Marys Landfill Site Capacity Expansion:  (1) Noise limits shall comply with the MOE noise limits in: a) Noise Guidelines for Landfill Sites, October 1998 b) Publication NPC-115 - Construction Equipment c) Publication NPC-118 - Motorized Conveyances d) Publication NPC-205 - Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban), October 1995 as amended e) Publication NPC 232 - Sound Level Limits for Stationary Sources in Class 3 Areas (Rural), October 1995 as amended.  (2) Noise Reports shall be prepared in accordance with: a) Publication NPC-233 - Information to be Submitted for Approval of Stationary Sources of Sound, October 1995 as amended, b) Supporting Information for the Preparation of an Acoustic Assessment Report, Prepared by the Air and Noise Unit, EAAB, November 2003	Section 9.1.1.4 and 9.2.1.4	1. Noise will be assessed as part of the Air Quality/ Noise assessment in accordance with the publications and guidelines noted. It is not appropriate to list specific specific guidelines for each section.  The following paragraph will be added to Section 9.0 - "The Site Study Area and Local Study Area studies and evaluations will be conducted in accordance with applicable regulations and guidelines for the relevant environmental component."
Mark Harris, Hydrogeologist - Southwestern Region, Ministry of the Environment - Dec. 3,2012	2. The ToR document provides little information on either the local hydrogeologic setting or the potential environmental effects to ground water resources . My brief read through the Ministry's "Code of Practice. Preparing and Reviewing ToR for EA in Ontario" (October 2009) suggests that only a general level of description is necessary. I assume that a much more significant overview of site hydrogeology and potential impacts of the proposal will be provided in the EA document .	Section 9.1.1.1 and 9.2.1.1	2. Comment noted. As presented in the ToR, a more detailed and extensive geologic and hydrogeologic investigations, assessment and reporting will be conducted as part of the EA.  No change to the ToR is required to address this comment.
As per above	3. Similar to the above comment, there is no description of any impacts resulting from the existing landfill operations at the site . This would have been useful. For example, if the existing landfill site is known to be causing unacceptable impacts, it could help to guide the scope of study necessary to complete studies for the EA. Are there any unresolved issues pertaining to ground water impacted by the current landfill site? If there is any site-specific knowledge of the functioning of the existing site, can it be used to inform the hydrogeological investigation at the proposal expansion site ?	NA	3. The Site is currently in compliance with regard to groundwater conditions. The existing geologic and hydrogeologic information will be part of the overall assessment conducted as part of the EA.  No change to the ToR is required to address this comment.
As per above	4. The site's geology can be generalized by envisioning a silt/clay till aquitard over a carbonate bedrock aquifer. In this setting, it is often expected that the significant or even dominant ground water flow path will be downwards towards the bedrock aquifer. Thus, in addition to an assessment of off-site impacts through the clay/silt till overburden, particular attention should be paid to the potential for longer-term contamination of the underlying bedrock aquifer. Are numerical or analytical simulations to be performed? If so, will sufficient data be made available to have confidence in their results? If not, how can we be confident that the proposed expansion will not result in unacceptable impacts to bedrock ground water resources?	Section 9.1.1.1 and 9.2.1.1	4. Comment noted. As presented in the ToR, a more detailed and extensive geologic and hydrogeologic investigations, assessment and reporting will be conducted as part of the EA. As indicated in Response 1, the assessments will be completed in accordance with applicable regulations and guidelines.  No change to the ToR is required to address this comment.
As per above	5. A significant outcome of the EA Study should be to show that the Site can meet the Reasonable Use Guideline (RUG). This is the standard by which groundwater protection will be measured. How does the proponent plan to achieve this. Is groundwater modeling to be employed? If not, how can we be confident that the proposed expansion will not result in unacceptable impacts to ground water resources?	Section 9.1.1.1 and 9.2.1.1	5. See Response # 4.
As per above	6. The ToR does not identify the type of ground water protection strategy to be employed at the site . eg. natural attenuation, site-specific design, or generic design options. This is probably not entirely necessary at the ToR stage, but it may impact the scope of studies undertaken to support the EA. An overview of planned additions to the monitoring strategy would have been helpful . This would not need to identify specific well locations but at least provide , in general terms, the planned scope of additional investigations. This would help the Ministry to identify any concerns ahead of time , and help the proponent to optimize the installation of new instrumentation.	Section 9.1.2.1	6. The types of landfill design will be considered as Alternative Methods and assessed during the EA.  No change to the ToR is required to address this comment.
As per above	7. An overview of the planned additions to the monitoring strategy would have been helpful. This would not need to identify specific well locations but at least provide, in general terms, the planned scope of additional investigations. This would help the Ministry to identify any concerns ahead of time, and help the proponent to optimize the installation of new instrumentation	Section 9.1.1.1 and 9.2.1.1	7. See Response # 4.
As per above	8. The EA should ensure that leachate management is addressed. This is not only form the standpoint of minimizing impacts to groundwater, but also to whether or not the existing infrastructure can handle the additional wastewater.		8. See Response # 6.
Jack Colonnello, Surface Water Ministry of the Environment - Dec 3,2012	9. On page 15 of this document it states, that this surface water feature " will be modified in consultation with the Upper Thames River Conservation Authority. " It is understood that this modification will involve a relocation of this drain outside the landfill boundary, or at least the landfill footprint. If the latter is correct, this will alleviate many of the surface water concerns that this expansion could potentially have.	Section 9.1.1.2	9. Comment noted.  No change to the ToR is required to address this comment.
As per above	10. Is the drain to be relocated?	Section 9.1.1.2	10. The ditch/swale is proposed to be relocated as noted in Section 9.1.1.2  No change to ToR is required to address this comment.
As per above	11. If the drain is to be relocated, what will its position be in relation to the landfill footprint and the landfill boundary?	Section 9.1.1.2	11. Proposed alterations to the ditch/swale location will all be on Site. Site landfill footprint design configurations (i.e. Alternative Methods), as they relate to the proposed redesign of the ditch/swale, will be described and assessed in the EA.  No change to the ToR is required to address this comment.

**SUMMARY OF REVIEW COMMENTS  
PROPOSED TERMS OF REFERENCE FOR ST. MARYS LANDFILL CAPACITY INCREASE ENVIRONMENTAL ASSESSMENT  
TOWN OF ST. MARYS**

Source	Comment	ToR Reference	Proponent Response
Stefanos Habtom, Surface Water, EAB, Ministry of the Environment - Dec. 6/12	12. The outline provided in the above noted proposed terms of reference is acceptable with respect to the mandate of the Environmental Approval Services Section, EAB, under Section 53 of the Ontario Water Resources Act (OWRA), and we will provide review comments on the Environmental Assessment Report when submitted.	Section 9.1.1.2	12. Comment noted.  No change to the ToR is required to address this comment.
Jennifer Arthur, Planner, Source Protection Programs Branch, Ministry of the Environment - Dec 12, 2012	13. The location of the proposed landfill expansion does fall within a Significant Groundwater Recharge Area which does indicate a potential for there to be impacts on the groundwater recharge in the area. As such this vulnerable area should be carefully considered during the development of the landfill expansion and appropriate actions taken where necessary to minimize the potential effects on groundwater. Should the results of the pending hydrogeological studies indicate a higher potential for unmitigatable impact please don't hesitate to circulate the final studies to SPPB for further assessment. However, should the results of the studies indicate there is no potential to impact sources of drinking water there is no need to further circulate SPPB	Section 9.1.1.1	13. Comment noted. The hydrogeologic system will be assessed as part of the EA and the groundwater recharge/ source water protection issue will be addressed as part of the hydrogeologic assessment. See Response to Comment 4.  Section 9.1.1.1 has been amended to include the following statement "The Source Water Protection program studies will be considered during the EA as part of the hydrogeologic evaluation and assessment."
Gerald Diamond, Air Quality, Southwestern Region, Ministry of the Environment - Dec 14, 2012	14. On page 1, the authors suggest that the expansion will provide sufficient additional capacity for 40 years. However based upon a 1% annual growth in the waste stream, the correct number is probably closer to 35 years. The authors note, on page 4, that the local population is growing at approximately 2.1% per year. Thus to keep the landfill input at the same level, the fraction of waste diversion will have to increase each year.	Section 1 and 3	14. The estimate of the landfill capacity was calculate based on a 1 %/year increase on the current landfill fill rate (volume consumed) over a 40 year period. The undertaking is proposed to provide waste disposal capacity for approximately 40 years. The EA will review the population growth, waste generation and recycling information and provide a summary of the projections for the planning period. The Town of St. Marys will continue to assess methods of reducing the amount of waste landfilled.  Additional information has been provided in Section 3.0 to address this comment.
As per above	15. On page 5, the proponent notes that the area includes facilities for municipal hazardous and special waste. An evaluation of emissions from this should be included, especially in light of the previous comment.	Section 4	15. The MHSW Depot is an approved facility and accepts sealed containers. No bulking of material occurs. The facility will be relocated as part of the landfill development. Any air quality concerns will be addressed as part of the overall air quality assessment.  No change to the ToR is required to address this comment.
As per above	16. On page 9, the proponent says that "...the existing environment with the Site Study Area and Local Study Area will be studied and described ...". This should include characterization of the air quality and measurements of the emissions or ambient air contaminant levels. In particular, the ministry has published a target list for VOC monitoring at landfills. It is composed of the following: ♦ Carbon Tetrachloride ♦ Chloroform ♦ 1,2-Dichloroethene ♦ Ethylene Dibromide ♦ Ethylene Dichloride ♦ Methylene Chloride ♦ Perchloroethene ♦ Trichloroethene ♦ 1,1,1-Trichloroethane ♦ Vinylidene Chloride ♦ Vinyl Chloride ♦ Total NMOCs If the local soil is known to contain significant quantities of metals, silicates, or other substances that may have associated air standards or are believed to cause adverse health effects, these should be assessed as well.	Section 9.1.1.4	16. See Response # 1.
As per above	17. On page 12, the proponent lists several areas that will not be consider including transportation "except as they may pertain to the proposed relocation of the Site entrance..." Since the landfill has been in place for some time, and the acceptance rate is modeled to change only slowly, this may not be an issue. However, persons who see increases in truck traffic often worry about the effect of the emissions on their health. Thus it may be fruitful to include some estimate of the effects of the truck traffic and include projections that reflect the impact of possible increases.	Section 8	17. The proposed relocated of the Site entrance to the industrial side of the Site and away from the residential locations that are in the adjacent township will be described and assessed aspart of the Alternative Methods (i.e. alternative site design) in the EA. The landfill entrance is on the one of the two main roads into the community from a provincial highway. The majority of the landill related traffic is from the north and the revised Site entrance will decrease traffic in front of the residential locations.  No change to the ToR is required to address this comment.

**SUMMARY OF REVIEW COMMENTS  
PROPOSED TERMS OF REFERENCE FOR ST. MARYS LANDFILL CAPACITY INCREASE ENVIRONMENTAL ASSESSMENT  
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<b>Source</b>	<b>Comment</b>	<b>ToR Reference</b>	<b>Proponent Response</b>
As per above	18. On page 13, the proponent suggests that the investigation will be confined to area within one kilometre of the Study Site boundaries. Why? How did they arrive at this value? For instance, in the right circumstances could not odour from the landfill travel further than a kilometre?	Section 8	18. A 1 km Local Study Area radius is considered appropriate for this Site. If a study indicates a potential environmental effect may occur outside the Local Study Area, the boundary will be expanded for that environmental component.  Section has been amended to address this comment.
As per above	19. On page 16, they suggest that noise from the site may, if anything, decrease as waste diversion improves. However, the site also houses other waste-related activities such as a hazardous and special waste facility. Given the increasing pervasiveness of modern electronics, this facility may come into greater use in the future. Thus a more thorough examination is warranted.	Section 9.1.1.4	19. The comment is noted. The assessment of Alternative Methods will address comments related to landfill operations. In general, the size of the Site must be considered. The Site currently accepts about 5,000 to 6,000 tonnes of waste per year and is considered by MOE (LIO) to be a small landfill.  No change to the ToR is required to address this comment.
Dale Gable, Approval Services Section, Environmental Approvals Branch, Ministry of the Environment - Dec. 18/12	20. The Site is currently not mandated by O. Regulation 232/98. As the Site will be expanding, the Site expansion and the Site's operational requirements will have to meet this regulation.	Section 9.0	20. Agreed. See Response # 1.
As per above	21. In general, when considering a new landfill or expanding an existing landfill, the Town should consult the document entitled "Landfill Standards: A Guideline to the Regulatory and Approval Requirements for New and Expanding Landfills, specifically Section 6, to identify assessments that are required to be addressed in the supporting documentation should the ToR be approved.	Section 9.0	21. See Response # 1.
As per above	22. As part of the assessment criteria for Design and Operations component, the Town should ensure contaminating lifespan is included in the assessment.	Section 9.1.2.1	22. The contaminating lifespan will be dealt with during the detailed design phase of the project (EPA level work) that is proposed to be conducted after the EA. A general assessment will be considered as part of the Design and Operations Assessment.  No change to the ToR is required to address this comment.
As per above	23. Section 6.3 is entitled Potential Effect and indicates that these will be identified and described. This section should provide some additional insight on the expected types of effects.	Section 6.3	23. Potential effects will be identified in consultation with agencies, the public and Aboriginal communities. It is premature to include potential effects in the ToR.  No change to the ToR is required to address this comment.
As per above	24. As part of the hydrogeological evaluation, the Town should refer to Regulation 232/98 for the requirements for the type of information required. In addition, the Town should indicate whether the Site will be a Generic 1, Generic 2 or site specific design for expansion.	Section 9.1.1.1	24. See Response # 1.
As per above	25. Section 9.1.2.1 discusses the Design and Operations considerations. As indicated above, The Town should use the Landfill Standards Guide to ensure all the required operations are addressed in the EA. This will include leachate treatment, landfill gas collection and storm water management.	Section 9.1.2.1	25. See Response # 22.
As per above	26. In Section 11, the list of groups that will be consulted as part of the process was identified. It does not appear that there is a public liaison committee for the site. However, if one exists, it should be added to the list of stakeholder groups for consultation.	Section 11	26. A PLC does not exist for the Site.  No change to the ToR is required.
As per above	27. The Town should be made aware that starting in 2013, landfills will be added to the list of facilities that need to comply with O.Reg. 419. The Town will have to model the air quality from the facility to ensure that it meets the air quality requirements at the point of impingement.	Section 9	27. Comment noted.  No change to the ToR is required.
As per above	28. Section 9.2.4.1 indicates that there will be no excavation or other physical disturbance in the local area. The Town should indicate the type of expansion that will be occurring (i.e. pigging backing the existing landfill or whether the footprint of the limit of landfilling will be expanded. If it is the latter, which will involve some form of excavation for landfill preparation, then the statement in this section should be amended.	Section 9.2.4.1	28. Section 9.2.4.1 refers to the Local Study Area and not the Site Study Area. The landfill is located in the Site Study Area.  No change to the ToR is required related to this comment.
Bob Aggerholm, Regional EA Coordinator, Ministry of the Environment, Southwestern Region, Dec. 24/12	29. The interest of APEP Unit in the sphere of land use planning are recognized in the draft ToR in the following sections: a) Tab C Record of Consultation, Page 3 of the EAAB Memorandum of December 16, 2006 b) Sections 9.2.5, 10 and 12 of the Proposed Terms of Reference (November 2012)  With respect to Section 9.2.3.1.2, I have included our GoogleEarth imagery of the location of two Official Plan amendments that have come to the attention of the Region (There may be more). The consultant should review the Perth County Planning Department Files and speak with the Regional Planner of the APEP Unit to determine if the implementation policies for the assessment of land use proposals are adequate or in need of amendment (to protect the operational flexibility of the landfill and guard against encroachment of sensitive land use).	Section 9.2.5.1.2	29. Comment noted. The item will be dealt with during the Existing and Planned Land Use part of the EA.  No change to the ToR is required to address this comment.

**SUMMARY OF REVIEW COMMENTS  
PROPOSED TERMS OF REFERENCE FOR ST. MARYS LANDFILL CAPACITY INCREASE ENVIRONMENTAL ASSESSMENT  
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<b>Source</b>	<b>Comment</b>	<b>ToR Reference</b>	<b>Proponent Response</b>
Dan Minkin, Heritage Planner, Ministry of Tourism, Culture & Sport - Dec 21, 2012	30. <b>8.0 Study Area</b> The undeveloped portion of the site is described here as having "been completely disturbed over many decades by clay removal and related activities, including the temporary stockpiling of unused/waste mineral aggregate materials". Based on this, the section concludes that cultural heritage and archaeology do not require description and assessment within the Site Study Area. The stockpiling of such materials would not, by itself, render a site "disturbed" for purposes of archaeological potential, as the undisturbed soil beneath these stockpiles could hold archaeological resources. As such, we recommend that the proponent apply the MTCS's Criteria for Determining Archaeological Potential checklist and, if necessary, make provision in the Terms of Reference for an archaeological assessment on the site study area. This checklist is available for download from <a href="http://www.mtc.gov.on.ca/en/archaeology/archaeology_assessments.shtml#a1">http://www.mtc.gov.on.ca/en/archaeology/archaeology_assessments.shtml#a1</a> .	Section 9.1	30. A section will be added to Section 9.1 to add a Cultural Heritage and Archaeological Assessment.
As per above	31. <b>9.1 Site Study Area</b> Pursuant to our comments on Section 8.0 above, a cultural environment subsection should be added within Section 9.1, explaining whether archaeological potential has been identified according to the Criteria for Determining Archaeological Potential.	Section 9.1	31. See Response # 30.
As per above	32. <b>9.2.4.1 Cultural Heritage and Archaeology (Local Study Area)</b> We suggest that the title of this section, and references to "cultural heritage and archaeological features" throughout the Terms of Reference, be replaced with "cultural heritage resources". This term includes built heritage resources, archaeological resources, and cultural heritage landscapes. This section states that "cultural heritage and archaeological features and conditions in the Local Study Area will be identified and described in accordance with the requirements of the Ontario Heritage Act and its associated regulations, policies and guidelines". It is in fact the Environmental Assessment Act, not the Ontario Heritage Act, that mandates the identification and description of cultural heritage resources as part of the EA process.	Section 9.2.4.1	32. The ToR has been reworded to reflect the comment.
Dave Marriot-Ministry of Natural Resources-Guelph Division-Jan 8, 2012	33. The TOR (Sections 9.1 and 9.2) has generally described the natural heritage features within the Site and Local Study Areas. It is understood that a Surface Water Condition Study and a Biological Features and Conditions Study will be completed in support of the EA (Section 12). Please note that the Ministry has several known records (e.g. species at risk) within the Local Study Area. MNR staff can also advise that there is the potential for other unknown records/features to be present within the study areas. It is recommended that prior to commencing these studies the Ministry be contacted for detailed natural heritage information and advice that may be relevant to the EA.	Sec. 9.1 and 9.2	33. Comment noted. See Reponse # 1.
As per above	34. Section 14 of the TOR has indicated that approval may also be required under the Aggregate Resources Act. MNR staff notes that the existing Rehabilitation Plan for the licensed portion of the site states that the area will be rehabilitated to an agricultural use. Please be advised that the licensee is required to operate their site in accordance with the Site Plans upon which the license is based. A major site plan amendment would be required to support the landfill expansion, or this portion of the license would have to be partially surrendered in accordance with the Act. It is recommended that a meeting be scheduled with the Ministry to review the licensee's existing Site Plans, and the potential implications of the legislation.	Section 14 and Section 9.4.1.2	34. The Aggregate License is held by St. Marys Cement. It was the Town's understanding that the property that was transferred to the Town was to be removed from the Aggregate License. The Town will discuss this matter with St. Marys Cement. Pending the result of that, further discussion with MNR may be required.  The following will be added to the Section 9.1.4.2 of the ToR: "As part of the planning assessment, the Aggregate License for St. Marys Cement that relates to the lands adjacent to and related to the Study Area will be assessed. Discussions with Ministry of Natural Resources are proposed should the Study Area be identified as still being part of the St. Marys Cement Aggregate License".
As per above	35. As noted above, the area(s) surrounding the site are also currently licensed under the Aggregate Resources Act. In keeping with the Provincial Policy Statement (PPS), mineral aggregate operations shall be protected from development and activities that would preclude or hinder their expansion or continued use. It is recommended that Section 12 in the TOR include a 'Mineral Aggregate Study' to ensure that the EA appropriately considers the impact the expansion may have on the current or future operations of these licensed areas.	Section 9.2.5.1.2	35. See Response # 34.
Ken Teasdale, Corridor Management Section, Ministry of Transportation	36. The proposal has been considered and reviewed in accordance with the requirements of MTO's highway access policies, criteria, and the Public Transportation and Highway Improvement Act (PTHIA). The landfill site falls outside of MTO's permit control area as defined in the PTHIA. Therefore MTO permits for the landfill site expansion itself are not required.	General	36. Comment noted.  No change to the ToR is required to address this comment.
As per above	37. Should a traffic impact study be required, MTO will require that it be circulated with the Study for its review and approval. MTO would be glad to meet with the Town to discuss matters required to be considered if a Traffic Impact Study is required.	General	37. Comment noted.  No change to the ToR is required to address this comment.
Chris Stack, Ministry of Citizenship and Immigration, Ministry of Tourism, Culture and Sport - Jan. 4/12	38. We have no comments or concerns from a regional perspective,	General	38. Comment noted.  No change to the ToR is required to address this comment.
Ministry of the Environment-Trevor Robak-APEP Supervisor-Southwestern Region-April 6, 2010	39. <b>Basis for Scoping</b> • The draft TOR documents the transfer of ownership of the site from St. Marys Cement and the recent acquisition of additional lands from this company. It could be argued that land acquisition has predetermined the outcome of the process. • We will defer to EAAB to decide if the Town's actions were appropriate in advance of the EA process. The Town's actions could be viewed as a precedent by others. Proponents may cite land acquisition (not optioning) as an acceptable "pre-EA" practice and an approach that can be employed to diminish the weight given to other alternatives. • In any event, we recommend that any discussion in the TOR relating to the Town's acquisition decision be confined strictly to the facts (as background or narrative). We question whether the TOR should be the vehicle that acts to limit the Town's identification and consideration of other options. The preference given to the expanded area (the acquisition area) should be examined and weighed against other available options (e.g. a new site) within the body of the EA. This includes the draft TOR's conclusions about the prohibitive nature of land use planning controls in Perth County.	General	39. The proposed expansion area of the Site has been part of the Site (by way of lease from St. Marys Cement Inc.) for many years. Acquisition (i.e. transfer of ownership) of the lands from St. Marys Cement Inc. to the Town has been discussed for many years and was concluded after the "scoping" decision during early stages of the ToR. The land ownership issue is not relevant as it did not prejudice the decision to pursue a "focused" expansion of the Site capacity.  No change to the ToR is necessary to address this comment.
As per above	40. <b>Methodology</b> • This is a full (individual) EA. We will defer to EAAB for its opinion on whether the proponent should be referencing the process set by Regulation 101/07.	General	40. No reponse necessary.



**SUMMARY OF REVIEW COMMENTS  
PROPOSED TERMS OF REFERENCE FOR ST. MARYS LANDFILL CAPACITY INCREASE ENVIRONMENTAL ASSESSMENT  
TOWN OF ST. MARYS**

Source	Comment	ToR Reference	Proponent Response
As per above	41. Land Use Planning Controls <ul style="list-style-type: none"> <li>• The TOR references the Provincial Policy Statement. The TOR should elaborate on the relationship between the land use compatibility policies of the PPS and MOE's Land Use Planning Guideline D-4. This guideline outlines the Ministry's expectations for land use control in the periphery of landfill sites. The landfill site and the peripheral areas deemed to be affected (including any Contaminant Attenuation Zone) will need to be designated by the local official plan. In light of this office's recent experiences in Perth County's planning program we recommend that the consultant produce draft policies for an Official Plan Amendment. This information will inform government agencies and property owners of the controls that enacted in the future (the policies will define the geographical extent and the type of land use). The EA's conclusions for land use control will represent a requirement of the EA process and will instruct the municipality on what it must do to implement the EA under the Planning Act.</li> </ul>	Section 9.2.5.1.2	41. See Response # 29, above. Land Use Planning Controls will be addressed in the Existing and Planned Land Use portion of the EA.
As per above	42. Possible Provincial and Federal Approvals (Section 11.0 of the TOR) <ul style="list-style-type: none"> <li>• This is a recurring issue in the Class EA process. Many government approvals, permissions and certificates are evaluated on the basis of some rather significant and fundamental policy considerations. The proponent should be required to: <ul style="list-style-type: none"> <li>o Identify all government approvals and permissions to implement the alternative (Provincial, Federal, municipal, conservation authority, etc.)</li> <li>o comment on the policy directives that the issuing authorities will use to adjudicate an application</li> <li>o identify and evaluate any major potential policy encumbrance or obstacle</li> </ul> </li> </ul>	Section 14	42. Section 14.0 of the ToR commits the Proponent to identifying other approvals that may apply to the Undertaking. The ToR has been amended to provide additional clarification of what such approvals may be and details will be provided in the EA once the Undertaking has been better defined.
As per above	43. Service Area of the Facility <ul style="list-style-type: none"> <li>• The prospect of receiving waste from sources beyond the municipal boundaries should be documented and evaluated.</li> </ul>	Section 3	43. Section 3.0 states that the purpose of the Undertaking will be "...the expansion of the capacity of the existing Site so that it is capable of receiving post-diversion municipal solid waste from the Town.....". The service area is currently and will continue to be the Town of St. Marys. No change to the ToR is required to address this comment.
As per above	44. Waste Management Planning <ul style="list-style-type: none"> <li>• The description and purpose of the undertaking could be more broadly represented as a "waste management plan" and not a facility site selection process. To that end, the municipality – as part of this process – could be called upon to examine the adequacy of its arrangements to retire or restore sites that have received waste in the past. The TOR should direct the municipality to consult the Ministry's 1991 Waste Site Inventory Report and provide a plan to "sunset" any waste management facility or site that is no longer in use.</li> </ul>	General	44. Closed landfill sites in the Town were eliminated from consideration during the early stages of the ToR and are therefore not part of the EA. No change to the ToR is required to address this comment.
As per above	45. The following comments are offered from the Air Program perspective: <ul style="list-style-type: none"> <li>• Section 7.1.5 outlines how the current situation will be described and notes that there has been extensive measurements in the past but the proponent does not speak to what these measurements were. More detail on what species were examined, what measurement techniques were used (equipment, placement, etc) and how often such measurements were made, would be useful. If the measurements have been made in the past, it should be relatively easy to add more detail to this section.</li> <li>• The proponents suggest that the landfill will continue to be used exclusively for the town of St Marys and that it will continue to receive approximately the same volume of waste per year. The town will likely experience an increase in size over the life of the landfill and, if this is the case, the proponents should not rely exclusively on this increase being offset by improved waste diversion. It is therefore suggested that they present air results based upon some reasonable growth scenarios.</li> <li>• Section 7.2.10 repeats these assumptions and concludes with the following statement: Current air quality conditions and potential effects on air quality within the Local Study Area will be identified and described. There needs to be more detail as to how the air quality conditions and effects of the landfill will be assessed. For example, operational plans could be presented to show how they will deal with waste to ensure that air emissions do not worsen. Problems have occurred in the past when, for instance, insufficient cover was used. Future emissions should be modeled to show that under worst case growth scenarios air emissions will not become a problem.</li> <li>• The Ministry has prepared an interim guide on monitoring landfill gases. This report suggests that at least the following substances should be monitored to properly assess emissions.  Carbon Tetrachloride, Trichloroethene, Chloroform, 1,1,1-Trichloroethene, 1,2-Dichloroethene, Vinyl Chloride, Ethylene Dibromide, Vinylidene Chloride, Ethylene Dichloride, Total NMOCs, Methylene Chloride, Total Suspended Particulate, Perchloroethene</li> </ul> <p>We would further suggest that fine particulate be evaluated. As well, if a worst case analysis of the landfill's future suggests significant truck traffic, then diesel emissions should also be considered to ensure they do not pose an environmental hazard.</p>	Section 9.1.1.4	45. Historic air quality data will be reviewed as part of the existing air quality condition (i.e. ambient conditions) during the EA. It is not appropriate to include the level of detail suggested in the comment, in the ToR. Regarding the service area comment, see Response # 43, above.

**SUMMARY OF REVIEW COMMENTS**  
**PROPOSED TERMS OF REFERENCE FOR ST. MARYS LANDFILL CAPACITY INCREASE ENVIRONMENTAL ASSESSMENT**  
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Source	Comment	ToR Reference	Proponent Response
<b>FEDERAL AGENCIES</b>			
Dave Bell, Canadian Environmental Assessment Agency - Nov.21/12	46. On page 33, the ToR says the project may be subject to CEAA 2012. I would like to see analysis by the Municipality and a rationale on whether in their opinion the expansion is or is not on the CEAA 2012 Project List.	Section 14	46. Response e-mailed to D. Bell - Nov. 27/12  In that the ToR is a framework for the preparation and review of the ensuing EA the CEAA statement in the Proposed ToR (in Section 13.0 - Other Approvals) is a ToR phrase normally required by MOE that provides for the <i>possibility</i> that some aspect of the undertaking <i>may</i> result in the need for an environmental assessment under the CEAA 2012.  With CEAA 2012, and the disappearance of "triggers" and the promulgation of the "Regulations Designating Project Activities", it is our view that the proposed landfill expansion would not be subject to CEAA 2012. Nevertheless the ToR includes the phrase to keep the door open for the remote possibility of CEAA 2012 involvement, to be discussed with the Canadian Environmental Assessment Agency during preparation of the EA, when more detail is known about the full scope and substance of the proposed undertaking. (For example, under Section 14 (2) the Minister may designate a physical activity not prescribed by the regulations. However, in our landfill EA experience this has not occurred.)  The Proposed Terms of Reference merely sets out that if an environmental assessment is required under CEAA 2012, the proponent will work with MOE and the Agency in a co-ordinated way as set out in the EA co-ordination guideline.  No change to the ToR is required to address the comment.
Environmental Coordinator, Transport Canada - Ontario Region - Nov. 27/12	47. Does the project cross or affect a potentially navigable waterway? If so, (1) please confirm that a NWPA request for work approval application will be submitted and (2) is the project considered to be of a minor nature?	NA	47. Responses to the 3 Transport Canada comments were provided to Wesley Wright in Nov. 28/12 email.  The project does not cross or affect a potentially navigable waterway.  No change to the ToR is required to address this comment.
As per above	48. Will the project affect/impact on any railway works?	NA	48. The project will not affect/ impact any railway work.  No change to the ToR is required to address this comment.
As per above	49. The Town of St. Marys committing to operating the landfill as a bird-free site. (general guidance is provided below) We will expect to see this further discussed, along with mitigating measures/efforts made to ensure that this commitment is met, in the EA documentation. Please note the request that once a preferred alternative is know, Transport Canada suggests that the proponent follow the advice of a consultant having experience in conducting bird hazard assessments for projects of a similar nature	Section 9.1.2.1	49. The volume of waste received per day will be similar for the proposed expansion. Bird control program will be discussed as part of the EA with the object to create a bird-free Site. Bird issues will be considered as part of the design and operations consideration.  No change to the ToR is required to address this comment.
Alison Berman, Consultation and Accommodation Unit, Aboriginal Affairs and Northern Development Canada - Nov. 22/12	50. Please omit AANDC from public information notification for the project since the project does not intersect with reserve lands.	NA	50. AANDC has been removed from Government Review List for the project as requested.
<b>ABORIGINAL COMMUNITIES</b>			

**SUMMARY OF REVIEW COMMENTS  
PROPOSED TERMS OF REFERENCE FOR ST. MARYS LANDFILL CAPACITY INCREASE ENVIRONMENTAL ASSESSMENT  
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Source	Comment		ToR Reference	Proponent Response	
Jared MacBeth, Walpole Island First Nation - Phone call - Dec. 4/12	51.	Would like to have a meeting to discuss the project.	Section 11.2	51.	<p>Jim Yardley of CRA spoke with Jared MacBeth regarding the project on Dec. 6/12 (Jared MacBeth of Walpole Island First Nation (jared.macbeth@wifn.org) (519-627-1475)).</p> <p>The overall process regarding the development of the terms of reference was discussed. Mr. MacBeth joined WIFN about the time of the previous review and as such this is his first involvement in the file. He indicated that WIFN interest is in the areas of surface water, groundwater and air and potential impacts related to the Thames River. He indicated that WIFN will be involved as the project moves forward and at this time would like to meet at the Site prior to the assessment work be completed at that Site. Based on this, he would like to contact in the early part of 2013 to set-up an appropriate time for a site meeting based on the assessment work schedule. He indicated that WIFN may want to be at the Site during portions of the technical work program. Mr. MacBeth looks at this as an opportunity to commence relationships with the Town of St. Marys and to work with the Town of matters of mutual interest in the future.</p> <p>Jim Yardley agreed to touch base with the him in on this matter. The following has been added to EA Consultation Program, Item 6 of the principles:</p> <p>6. The EA consultation program will include meetings and/or discussions with Aboriginal communities that have expressed an interest during the ToR review or during the EA.</p>
Stacey Phillips, NRF Core Consultation, Oneida Nation of the Thames, Dec. 14/12	52.	Review report forwarded to Oneida Chief and Council.	NA	52.	No comments have been received.
Joanne Thomas, Consultation Point Person, Six Nations Land and Resources - Dec. 14/12. (same request was emailed on January 8, 2013 directly to CRA)	53.	Six Nations would like a representative from St. Marys Landfill to come to a meeting to give us more information on the expansion. Due to capacity issues, I do not think we can get our comments in by Dec. 24, 2012. But still like to meet to discuss the expansion.	NA	53.	<p>Jim Yardley of CRA replied in an email on December 19, 2012 as follows:</p> <p>Your request for a meeting has been forwarded to me and I have discussed this with the Town staff. The Town is willing to discuss the Terms of Reference with you and that once the Terms of Reference have been approved and the Environmental Assessment is commenced, consultation is a key element to the program.</p> <p>Walpole Island First Nation has made a similar request for additional information regarding the Environmental Assessment. At this time, a meeting has not been set-up, but a commitment has been made to meet with Walpole Island First Nation in late March or early April and prior to the start of the field work at the Site. This meeting would most likely occur in St. Marys and would include a site visit/ tour.</p> <p>I am willing to discuss this project with you at anytime, as well as to discuss and determine the appropriate time and place for a meeting on this matter.</p> <p>See addition noted in Response # 51.</p>

**SUMMARY OF REVIEW COMMENTS  
PROPOSED TERMS OF REFERENCE FOR ST. MARYS LANDFILL CAPACITY INCREASE ENVIRONMENTAL ASSESSMENT  
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Source	Comment	ToR Reference	Proponent Response
Sharilyn Johnston and Wilson Plain Jr., Aamjiwnaang First Nation - Dec. 20/12	54. The project location is located within Aamjiwnaang First Nation's Traditional Territory. The primary concern Aamjiwnaang has concerns the potential for the landfill and proposed expansion to affect the Thames River. As you may be aware, the Thames is already stressed with various agricultural and industrial operations taking place along the banks of the river. This would also include contaminants that may enter the river by any towns or cities that are also located along the river. We would like to ensure that groundwater directly from the site and area of the site is properly processed to reduce or eliminate any potential contamination.  At the present time, we are unable to provide further comment on the project but would like to continue to receive updates for our review. Any comments or concerns that we may have will be forwarded accordingly for consideration.	Sections 9.1.1.1 and 9.2.1.1	54. Aamjiwnaang First Nation will be kept informed as the EA proceeds. The issues with groundwater and surface water will be considered as part of the EA.  See addition noted in response to Response # 51
Carrie Ann Peters, Caldwell First Nation - January 11, 2013	55. Our main concern will be the effects this will have on habitats, the water, any animal that may be in the area for food/shelter. Once ToR and EA are established, if we could set up a meeting for consultation to better get an idea of Project details and processes.	General	55. Comment noted.  See addition noted in response to Response # 51.
<b>MUNICIPALITIES AND LOCAL AGENCIES</b>			
Karen M. Winfield-Land Use Regulations Officer - Upper Thames River Conservation Authority - Dec 18, 2012	56. At a minimum every EA should consider: a. Whether the existing or proposed activity or alternatives (subject of the EA) are or would be located within an area identified as vulnerable in an approved Assessment Report. The zones and vulnerability (is) of the area(s) should be identified in the EA. b. Whether the subject of the EA would be considered a significant drinking water threat . c. Whether the subject of the EA would be considered a moderate or low drinking water threat. d. Whether the subject of the EA would contribute to any issues identified in an approved Assessment Report e. In evaluation of the alternatives, the risk to drinking water sources included in the Assessment Report should be considered in the selection of the preferred alternative. f. Recommendations as to how the Source Protection Plan should be reflected in the design, approval or operation of the subject of the EA.  It is important that any EA consider all environmental impacts of the subject of the EA. At a minimum the general items listed above should be considered and documented as part of the proposed St. Marys Landfill Site Capacity Expansion EA. Even if, as in this case, the Source Protection Plan may not have any substantive bearing on the proposed project, consideration of the impacts or lack thereof should be documented in the EA.	Section 9.1.1.1	56. As part of the geology and hydrogeological assessment, the source water protection assessment for the Upper Thames will be assessed and specifically the noted items, a through f will be assessed as it relates to the undertaking.  See Response # 13
As per above	57. On another note, one additional item that was not specifically addressed in the ToR was the location of the outlet for the proposed swale. We would suggest that alternative outlet locations and designs be explored as part of the EA process. This is not stated explicitly in the ToR.	Section 9.1.1.2	57. The swale noted is proposed to be relocated on the Site with both the inlet and outlet locations to remain as per the existing locations. As noted in Section 9.1.1.2, consultation with the UTVCA is proposed regarding the swale re-location. As part of the consultation, the swale configuration (cross-section) will be discussed.  No change to the ToR is required to address this comment.
<b>INDIVIDUALS AND LOCAL GROUPS</b>			

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**Attachment E3  
Additional Aboriginal Consultation  
Undertaken by Burnside (2013)**

Agency/Organization	Title	First Name	Last Name	Position	Address 1	Address 2	City	Province	Postal Code	Email	Telephone	Fax
Aamjiwnaang First Nation (Formerly Chippewas of Sarnia FN)	Chief	Chris	Plain	Chief	Aamjiwnaang Administration Office	978 Tashmoo Avenue	Sarnia	ON	N7T 7H5	cplain@aamjiwnaang.ca; Aamjiwnaang.chief@gmail.com	(519) 336-8410	336-0382
Aamjiwnaang First Nation (Formerly Chippewas of Sarnia FN)	Ms.	Sharilyn	Johnston		Aamjiwnaang Administration Office	978 Tashmoo Avenue	Sarnia	ON	N7T 7H5			
Aamjiwnaang First Nation (Formerly Chippewas of Sarnia FN)	Mr.	Wilson	Plain Jr.		Aamjiwnaang Administration Office	978 Tashmoo Avenue	Sarnia	ON	N7T 7H5			
Caldwell First Nation	Chief	Louise	Hillier	Chief	P.O. Box 388		Leamington	ON	N8H 3W3	lmh@porchlight.ca; cfnchief@live.com	(519) 678-3831	(519) 322-1533
Caldwell First Nation	Ms.	Carrie Anne	Peters		P.O. Box 388		Leamington	ON	N8H 3W3	health@caldwellfirstnation.com		
Chippewas of Kettle and Stony Point FN	Chief	Thomas	Bressette	Chief	Kettle and Stony Point FN, 6247 Indian Lane	RR#2	Forest	ON	N0N 1J0	Thomas.bressette@kettlepoint.org; Toni.george@kettlepoint.org	(519) 786-2125	(519) 786-2108
Chippewas of Kettle and Stony Point FN	Ms.	Suzanne	Bressette	Communications Relations Officer	Kettle and Stony Point FN, 6247 Indian Lane	RR#2	Forest	ON	N0N 1J0	sue.bressette@kettlepoint.org		
Chippewas of the Thames First Nation	Chief	Robert, 'Joe'	Miskokomon	Chief	320 Chippewa Road	RR#1	Muncey	ON	N0L 1Y0	chief@cottfn.ca; cdeleary@cottfn.com	(519) 289-5555	(519) 289-2230
Chippewas of the Thames First Nation	Ms.	Rolanda	Elijah	Director of Lands and Environment	4 Anishinaabeg Drive		Muncey	ON	N0L 1Y0	reljah@cottfn.com	(519) 289-2662 ext. 209	
Chippewas of the Thames First Nation	Ms.	Fallon	Burch	Consultation Coordinator	320 Chippewa Road	RR#1	Muncey	ON	N0L 1Y0	fburch@cottfn.com	(519) 289-2662 ext. 213	
Delaware Nation (Moravian of the Thames)	Chief	Greg	Peters	Chief	14760 School House Line	RR# 3	Thamesville	ON	N0P 2K0	gcpeters@mnsi.net	(519) 692-3936	(519) 692-5522
Delaware Nation (Moravian of the Thames)	Ms.	Tina	Jacobs	Lands and Resources Consultation Manager	14760 School House Line	RR# 3	Thamesville	ON	N0P 2K0	tnajay@xplornet.com	(519) 692-4920	
Delaware Nation (Moravian of the Thames)	Mr.	Justin	Logan	Lands and Resources Consultation Assistant	14760 School House Line	RR# 3	Thamesville	ON	N0P 2K0	loganju@xplornet.com	(519) 692-4920	
Haudenosaunee Development Institute	Ms.	Hazel	Hill	Interim Director, Six Nations of the Grand River Territory	16 Sunrise Court	Suite 407, PO Box 714	Oshweken	ON	N0A 1M0	hd2@bellnet.ca	(519) 445-4222, 755-2769	(519) 445-2389
Mississaugas of New Credit First Nation	Ms.	Margaret	Salt	Director of Lands, Resources and Management	Consultation and Outreach Office, R.R. #6	2789 Mississauga Road	Hagersville	ON	N0A 1H0	margaret.salt@newcreditfirstnation.com	(905) 768-7632	768-1255
Mississaugas of the New Credit First Nation	Chief	Bryan	LaForme	Chief	Consultation and Outreach Office, R.R. #6	2789 Mississauga Road	Hagersville	ON	N0A 1H0	bryanlaforme@newcreditfirstnation.com; www.newcreditfirstnation.com	(905) 768-1133	(519) 768-1225
Mississaugas of the New Credit First Nation	Ms.	Carolyn	King	Geomatics Environmental Technician	Consultation and Outreach Office, R.R. #6	2789 Mississauga Road	Hagersville	ON	N0A 1H0	carolyn.king@newcreditfirstnation.com; send cc to bryanlaforme@newcreditfirstnation.com	(905) 768-7632	(519) 768-1225
Munsee-Delaware First Nation	Chief	Roger	Thomas	Chief	RR#1	1289 Jubilee Road	Muncey	ON	N0L 1Y0	rthomas@munsee.on.ca	(519) 289-5396	(519) 289-5156
Munsee-Delaware First Nation	Mr.	Dan	Miskokoman	Band Manager	Administration Office, RR#1	289 Jubilee Road	Muncey	ON	N0L 1Y0	band.manager@munsee-delaware.org; drskoke@hotmail.com		
Oneida of the Thames First Nation	Chief	Joel	Abram	Chief	2212 Elm Avenue		Southwold	ON	N0L 2G0	Joel.abram@onieda.on.ca	(519) 652-3244	(519) 652-2930
Six Nations of the Grand River	Chief	William K.	Montour		2498 Chiefswood Road,	P.O. Box 5000	Oshweken	ON	NOA 1M0	wkm@sixnations.ca; arleenmaracle@sixnations.ca	(519) 445-2201	(519) 445-4208
Six Nations of the Grand River	Ms.	Caron	Smith		2498 Chiefswood Road,	P.O. Box 5000	Oshweken	ON	NOA 1M0	csmith@sixnations.ca (copy in all correspondence to Chief)		
Six Nations of the Grand River	Ms.	Joanne	Thomas	Consultation Point Person	2498 Chiefswood Road,	P.O. Box 5000	Oshweken	ON	NOA 1M0	jthomas@sixnations.ca		
Walpole Island First Nation (Bkejwanong Territory)	Chief	Burton	Kewayosh Jr.	Chief	Bkejwanong Territory, 117 Tahgahoning Road	RR#3	Wallaceburg	ON	N8A 4K9	burton.kewayash@wifn.org; Terri.george@wifn.org	(519) 627-1481	(519) 627-0440
Walpole Island First Nation (Bkejwanong Territory)	Mr.	Dean	Jacobs	Consultation Manager	Bkejwanong Territory, 117 Tahgahoning Road	RR#3	Wallaceburg	ON	N8A 4K9	dean.jacobs@wifn.org	(519) 627-1475	

Agency/Organization	Title	First Name	Last Name	Position	Address 1	Address 2	City	Province	Postal Code	Email	Telephone	Fax
Walpole Island First Nation (Bkejwanong Territory)	Mr.	Jared	Macbeth	Consultation Manager	Bkejwanong Territory, 117 Tahgahoning Road	RR#3	Wallaceburg	ON	N8A 4K9	<a href="mailto:jared.macbeth@wifn.org">jared.macbeth@wifn.org</a>	(519) 627-1475	
Windsor Essex Metis Council	Mr.	Andrew	Good	President	4745 Huron Church Line		Windsor	ON	N9H 1H5	<a href="mailto:andrew_j_good@hotmail.com">andrew_j_good@hotmail.com</a> ; <a href="http://www.windsor.essex.ca">www.windsor.essex.ca</a>	(519) 300- 6008 (cell); (519) 962-5300	(519) 974-3739
Metis Nation of Ontario	Mr.	James	Wagar	Manager of Natural Resources	Lands, Resources and Conservation	311-75 Sherbourne Street	Toronto	ON	M5A 2P9	<a href="mailto:jamesw@metisnation.org">jamesw@metisnation.org</a> ; <a href="http://www.metisnation.org">http://www.metisnation.org</a>	(416) 977-9881 ext. 107	(416) 977-9911
Metis Nation of Ontario	Mr.	Gary	Lipinksi		500 Old St. Patrick Street	Unit 3	Ottawa	ON	K1N 9C4		(613) 798-1488	(613) 722-4225
Association of Iroquois and Allied Indians	Ms.	Denise	Stonefish	Deputy Grand Chief	387 Princess Avenue		London	ON	N6B 2A7	<a href="mailto:dstonefish@aiaj.on.ca">dstonefish@aiaj.on.ca</a>	(519) 434-2671	(519) 679-1654

Contact Information					Consultation Carried Out by CRA						
Aboriginal Community	Title	First Name	Last Name	Address	Contact Information	Received Invite to First PIC (Oct 2006)	Received Invite to PIC #1 (Nov 2006)	Follow up Phone Call/Email (Dec 2006)	Sent Copy of Draft TOR (Feb 2010)	Comments Received by CRA	Response by CRA
Oneida Nation of the Thames	Chief	Randall	Phillips	2212 Elm Avenue Southwold ON N0L 2G0		Y	Y				
Oneida Nation of the Thames		Dawn		Chief@oneida.ca				Y			
Oneida Nation of the Thames	Chief	Joel	Abram	2212 Elm Avenue Southwold ON N0L 2G0	E-mail: Joel.abram@oneida.on.ca  Phone: (519) 652-3244 Fax: (519) 652-2930				Y	Stacey Phillips, NRF Core Consultation, Oneida Nation of the Thames, Dec. 14, 2012  Review report forwarded to Oneida Chief and Council.  No comments have been received.	
Oneida Nation of the Thames		Vacant		Consultation Coordinator	Email:						
Munsee-Delaware First Nation	Chief	Patrick	Waddlove	RR# 1 Muncey ON N0L 1Y0			Y				
Munsee-Delaware First Nation	Chief	Roger	Thomas	Administration Office RR# 1, 289 Jubilee Road Muncey ON N0L 1Y0	Phone: (519) 289-5396 Fax: (519) 289-5156  E-mail: rthomas@munsee.on.ca			Y	Y		
Munsee-Delaware First Nation	Mr.	Ryan	Barberstock	Band Manager Administration Office RR# 1, 289 Jubilee Road Muncey ON N0L 1Y0	Email: band.manager@munsee-delaware.org						
Chippewas of the Thames First Nation	Chief	Kelly	Riley	RR #1 Muncey ON N0L 1Y0			Y				
Chippewas of the Thames First Nation		Bula			Email: Chippewa@mnsi.net			Y			
Chippewas of the Thames First Nation	Ms.	Rolanda	Elijah	Director of Lands and Environment Department 4 Anishinaabeg Drive, Muncey ON N0L 1Y0	Email: relijah@cotfn.com Phone: (519) 289-2662 ext. 209						
Chippewas of the Thames First Nation	Mr.	Fallon	Burch	Consultation Coordinator 77 Anishinaabeg Road, Muncey ON N0L 1Y0	Email: fburch@cotfn.com Phone: (519) 289-2662 ext. 213						
Chippewas of the Thames First Nation	Ms.	Mary	Alkakos	Senior Environment Officer 77 Anishinaabeg Road, Muncey ON N0L 1Y0	Email: malikakos@cotfn.com Phone: (519) 289-2662 ext. 212						
Delaware Nation, Moravian of the Thames	Chief	John	Stonefish	14760 School House Line RR #3 Thamesville ON N0P 2K0			Y				
Delaware Nation, Moravian of the Thames	Chief	Gregory	Peters	14760 School House Line RR #3 Thamesville ON N0P 2K0	Phone: (519) 692-3639 Fax: 692-5522 E-mail: gcpeters@mnsi.net				Y		
Delaware Nation, Moravian of the Thames	Ms.	Tina	Jacobs	Lands and Resources Consultation Manager 14760 School House Line RR #3 Thamesville ON N0P 2K0	Phone: (519) 692-4290 Email: tnajay@plormet.ca						
Delaware Nation, Moravian of the Thames	Mr.	Justin	Logan	Lands and Resources Consultation Assistant 14760 School House Line RR #3 Thamesville ON N0P 2K0	Phone: (519) 692-4290 Email: loganju@plormet.ca						
Walpole Island First Nation (Bkejwanong Territory)	Chief	Joseph	Gilbert	RR #3 Wallaceburg ON N8A 4K9					Y		
Walpole Island First Nation (Bkejwanong Territory)	Chief	Burton	Kewayosh	117 Tahgahoning Road, RR #3 Wallaceburg ON N8A 4K9	Phone: (519) 627-1481 Fax: 627-0440 E-mail: Burton.kewayosh@wifn.org; Terri.george@wifn.org					Jared MacBeth, Walpole Island First Nation - Phone call - Dec. 4, 2012  Jim Yardley of CRA spoke with Jared MacBeth regarding the project on Dec. 6, 2012 (jared.macbeth@wifn.org) (519-627-1475).  The overall process regarding the development of the ToR was discussed. Mr. MacBeth joined WIFN about the time of the previous review and as such this is his first involvement in the file. He indicated that WIFN interest is in the areas of surface water, groundwater and air and potential impacts related to the Thames River. He indicated that WIFN will be involved as the project moves forward and at this time would like to meet at the Site prior to the assessment work being completed. Based on this, he would like to connect in the early part of 2013 to set-up a Site meeting. He indicated that WIFN may want to be at the Site during portions of the technical work program. Mr. MacBeth looks at this as an opportunity to commence relationships with the Town of St. Marys and to work with the Town of matters of mutual interest in the future.	Jim Yardley agreed to touch base with the F.N. in on this matter.  The following has been added to EA Consultation Program, Item 6 of the principles:  6. The EA consultation program will include meetings and/or discussions with Aboriginal communities that have expressed an interest during the ToR review or during the EA.



Consultation Carried Out by Burnside

Aboriginal Community	Received Project Re-Introduction Letter (August 15, 2013)	Follow up Phone Call/ Email (July/ August 2013)	Returned COI Form	Site Visit (August 21, 2013)	Comments Received by Burnside	TOR Receipt Follow up Calls December, 2013	Related to Revised TOR
Oneida Nation of the Thames							
Oneida Nation of the Thames							
Oneida Nation of the Thames	Y	Aug 26- spoke with Stacy Phillips. Currently is a vacancy in consultation position. He will call back with an alternate contact.  AG spoke with Stacy Phillips September 9, 2013. Mr. Phillips noted that Consultation Coordinator position currently vacant. <b>Send all future correspondence to Chief.</b>				December 4, 2013 1:08 pm: AG left voicemail for Chief Joel Abram. Noted that following up regarding receipt of TOR sent about 2 weeks ago. Left James Hollingsworth's phone number to confirm if have received TOR and/or if any questions or comments	X
Oneida Nation of the Thames							
Munsee-Delaware First Nation		Removed from list September 9, 2013 as per conversation with Roger Thomas confirming that Mr. Thomas now chief.					
Munsee-Delaware First Nation	Y	TR Left message Aug 26, 2013.  AG spoke with Roger Thomas Sept 9, 2013. Confirmed that he is the chief, not Patrick Waddlow. Unsure if received Project Re-Intro letter sent Aug 25, 2013, but would like to remain on mailing list and receive ToR.  <b>Email copy of Re-Intro letter, ToR and keep on mailing list as requested.</b>				December 4, 2013 1:14 pm: AG spoke with Chief Roger Thomas. Chief notes that as received TOR. AG mentioned that if any questions or concerns can contact either Dave Blake or James Hollingsworth. Also asked if Chief to be main contact, or if Dan Muskokoman should also be contacted. Chief provided Ryan Barberstock's contact information, as the replacement for Dan Muskokoman's role, and noted that Chief to be main contact, but CC Ryan in correspondence.	X
Munsee-Delaware First Nation						Contact added to replace Dan Muskokoman on December 9, 2013 as per conversation with Roger Thomas on December 4, 2013. To be CC'd in correspondence sent to Chief.	X
Chippewas of the Thames First Nation							
Chippewas of the Thames First Nation							
Chippewas of the Thames First Nation						Removed from correspondence list on December 9, 2013 as per conversation with Rolanda Elijah on December 4, 2013 noting that Chief does not need to be on correspondence list	
Chippewas of the Thames First Nation						December 4, 2013 1:18 pm: AG spoke with Rolanda Elijah. Ms. Elijah not sure if had received TOR. Noted that chief does not need to be contacted, and that Fallon Birch should be main contact. Requested to be copied in correspondence to Ms. Birch. Asked AG for email address to confirm when TOR received. Confirmed Ms. Birch's phone number and provided updated mailing address.	X
Chippewas of the Thames First Nation			Y - Keep on mailing list - Do not send TOR		Signed confirmation of interest received August 22, 2013 (see notes in COF Form column)	Phone number and address updated December 9, 2013 as per contact with Rolanda Elijah on December 4, 2013. To be main point of contact with CC to Rolanda Elijah.	X
Chippewas of the Thames First Nation						Email received December 17, 2013 indicating commetns would be delayed Email sent December 20, 2013 responding to the previous email.	X
Delaware Nation, Moravian of the Thames							
Delaware Nation, Moravian of the Thames	Y					To be copied in correspondence as per conversation with Justin Logan on December 4, 2013.	X
Delaware Nation, Moravian of the Thames		Called Aug 26, 2013. She is off for next month.				December 4, 2013 2:26 pm: AG left message with Tina Jacobs. Noted that following up with receipt of TOR. Provided James Hollingsworth's phone # in case any questions or concerns.  To be main point of contact, with CC to Chief as per correspondence with Justin Logan on December 4 <sup>th</sup> , 2013.	X
Delaware Nation, Moravian of the Thames	N	Called Aug 26, 2013. No voicemail. Try back in afternoon.  AG spoke with Justin Logan Sept 9, 2013. Did not receive Project Re-Intro letter; <b>please forward RE-Intro letter along with ToR.</b> Requested to remain on mailing list.				December 4, 2013 3:30 pm: AG spoke with Justin Logan. Mr. Logan confirmed that had received TOR and that Tina Jacobs to be main contact, Chief to be CC'd in correspondence. AG noted to contact either project manager if any concerns.	X
Walpole Island First Nation (Bkejwanong Territory)							
Walpole Island First Nation (Bkejwanong Territory)	Y						

Walpole Island First Nation (Bejwanong Territory)	Mr.	Dean	Jacobs	Consultation Manager 117 Tahgahoning Road, RR #3 Wallaceburg ON N8A 4K9	Phone : (519) 627-1475 Email : dean.jacobs@wifn.org						
Walpole Island First Nation (Bejwanong Territory)	Mr.	Jared	Macbeth	117 Tahgahoning Road, RR #3 Wallaceburg ON N8A 4K9	Phone : (519) 627-1475 Email : Jared.macbeth@wifn.org						
Aamjiwnaang First Nation	Chief	Chris	Plain	Aamjiwnaang Administration Office 978 Tashmoo Avenue Sarnia ON N7T 7H5	Phone: (519) 336-8410 Fax:336-0382 E-mail: CPlain@aamjiwnaang.ca Aamjiwnaang.chief@gmail.com				Y	Sharilyn Johnston and Wilson Plain Jr., Aamjiwnaang First Nation - Dec. 20, 2012  The project is located within Aamjiwnaang First Nation's Traditional Territory. The primary concern Aamjiwnaang has is the potential for the landfill and proposed expansion to affect the Thames River. As you may be aware, the Thames is already stressed with various agricultural and industrial operations taking place along the banks of the river. This would also include contaminants that may enter the river by any towns or cities that are also located along the river. We would like to ensure that groundwater directly from the site and area of the site is properly processed to reduce or eliminate any potential contamination.  At the present time, we are unable to provide further comment on the project but would like to continue to receive updates for our review. Any comments or concerns that we may have will be forwarded accordingly for consideration.	Aamjiwnaang First Nation will be kept informed as the EA proceeds.  Groundwater and surface water issues will be considered as part of the EA.
Aamjiwnaang First Nation	Ms.	Sharilyn	Johnston	Aamjiwnaang Administration Office 978 Tashmoo Avenue Sarnia ON N7T 7H5							
Aamjiwnaang First Nation	Mr.	Wilson	Plain, Jr.	Aamjiwnaang Administration Office 978 Tashmoo Avenue Sarnia ON N7T 7H5							
Chippewas of Kettle and Stony Point First Nation	Chief	Liz	Cloud	RR #2, 6247 Indian Lane Forest ON N0N 1J0					Y		
Chippewas of Kettle and Stony Point First Nation	Chief	Thomas	Bressette	6247 Indian Lane Kettle Point First Nation ON N0N 1J1	Phone : (519) 766-2125 Fax : 766-2108 Email : Toni.george@kettlepoint.org <a href="mailto:Thomas.bressette@kettlepoint.org">Thomas.bressette@kettlepoint.org</a>						
Chippewas of Kettle and Stony Point First Nation	Ms.	Suzanne	Bressette	Communications Relations Officer 6247 Indian Lane Kettle Point First Nation ON N0N 1J1	Phone (519) 766-2125 ext. 115 Email : sue.bressette@kettlepoint.org						
Mississaugas of the New Credit First Nation	Chief	Bryan	LaForme	2789 Mississauga Road Hagersville ON N0A 1H0	Phone : (905) 768-1133 Fax : 768-1225 Email : bryanalforme@newcreditfirstnation.com Send correspondence to Chief and Margaret Salt, CC Carolyn King				Y		
Mississaugas of the New Credit First Nation	Ms.	Margaret	Salt	Director of Lands, Resource and Management Consultation and Outreach Office 2789 Mississauga Road Hagersville ON N0A 1H0	Phone : (905) 768-7632 Cell : (905) 768-7632 Fax : 768-1225 Email : Margaret.salt@newcreditfirstnation.com Send correspondence to Chief and Margaret Salt, CC Carolyn King						
Mississaugas of the New Credit First Nation	Ms.	Carolyn	King	Geomatics Environmental Technician Consultation and Outreach Office 2789 Mississauga Road Hagersville ON N0A 1H0	Phone : (905) 768-7632 Fax : 768-1225 Email : Carolyn.king@newcreditfirstnation.com Send correspondence to Chief and Margaret Salt, CC Carolyn King						

Walpole Island First Nation (Bkejwanong Territory)						December 4, 2013 2:30 pm: AG left message with Dean Jacobs as reception noted that Mr. Jacobs and Mr. Macbeth both in a meeting. In message, asked Mr. Jacobs to confirm receipt of TOR and whether he is the main contact, or whether Jared Macbeth and/or chief to be contacted.	X
Walpole Island First Nation (Bkejwanong Territory)	Y	<p>Y Jamie Hollingsworth sent email letter suggesting August 22, 2013 10:30 am meeting date</p> <p>Jamie Hollingsworth called on August 15, 2013 and left message; call back received from Mr. Jared MacBeth (WIFN) August 15, 2013. Mr. MacBeth requested site meeting ASAP; suggested August 20, 2013 2:30 or 3pm.</p>		<p>Y</p> <p>- Invited Aug14</p> <p>- Jamie Hollingsworth attended on Aug 20, 2013 from 3-4:30 pm</p> <p>At August 20, 2013 meeting</p> <p>- site was reviewed from elevated position near site entrance</p> <p>Items discussed included:</p> <p>- current Cell 8 construction and history of operations</p> <p>- transition from CRA to Burnside that week and anticipated completion of ToR</p> <p>- inclusions of revised ToR</p> <p>WIFN interested in:</p> <p>- names of original surveyors of Town</p> <p>- maps, property surveys or air photos</p> <p>- history of existing landfill and change of land use over time</p> <p>- Mr. Hollingsworth to provide requested information, though not in ToR</p> <p>- WIFN interested in participation in field work and EA process (JH to look into waiver for field work)</p>	<p>Phone call between Jamie Hollingsworth and Jared MacBeth August 15, 2013:</p> <p>- Mr. MacBeth requested site meeting ASAP; suggested August 20, 2013 2:30 or 3pm.</p> <p>- Mr. MacBeth noted work experience with Kent Hunter (RJB) and comfort in know RJB involved in St. Mary's Project</p> <p>- Mr. MacBeth unsure how will complete his review work (from another consultant?)</p> <p>- Mr. MacBeth noted that wants to see the Town's landfill site including:</p> <p>- Existing conditions</p> <p>- historical ecology</p> <p>- types of restoration needed.</p> <p>- Mr. MacBeth noted that prefers alternative with little or no impacts</p> <p>- Mr. Hollingsworth noted that no current concerns with site from operations or monitoring perspective, and that well under way construction for Cell 8.</p>	<p>December 4, 2013 2:30 pm: AG left message with Dean Jacobs as reception noted that Mr. Jacobs and Mr. Macbeth both in a meeting.</p>	
Aamjiwnaang First Nation	Y		Y – received September 5, 2013		ToR needs to be sent.	To be secondary contact as per conversation on December 4, 2013 with Wilson Plain's Jr.	
Aamjiwnaang First Nation	Y	<p>Phone call from AFN Aug 22.</p> <p>Indicated interest in project, would complete COI form and return shortly.</p>				<p>December 4, 2013 3:05 PM: AG spoke with Wilson Plains Jr. As Ms. Johnson not in (according to reception).</p> <p>To be secondary contact as per conversation on December 4, 2013 with Wilson Plain's Jr</p>	
Aamjiwnaang First Nation	Y	<p>Phone call from AFN Aug 22.</p> <p>Indicated interest in project, would complete COI form and return shortly.</p>				<p>December 4, 2013 3:05 PM: AG spoke with Wilson Plains Jr. As Ms. Johnson not in (according to reception). Mr. Plains confirmed receipt of revised TOR and noted that currently reviewing. Said that would send information requests or comments soon. Confirmed that would be primary contact; that Ms. Johnson and Chief to be secondary contacts. Confirmed address. Was notified that could contact either PM if any questions or comments.</p>	
Chippewas of Kettle and Stony Point First Nation							
Chippewas of Kettle and Stony Point First Nation	Y					Reference only as per contact with Suzanne Bressette on December 4, 2013. Mailing address updated December 12, 2013 as per conversation on December 4, 2013.	
Chippewas of Kettle and Stony Point First Nation		<p>Phone call Aug 26, 2013.</p> <p>Follow up email sent Aug 26 to provide project info and request copy of consultation protocol.</p>			<p>On Aug 26 phone call, Sue noted that community has newly approved Consultation Protocol. Recommended sending email with project details and she will forward protocol to us.</p>	<p>December 4, 2013 3:26 PM: AG spoke with Suzanne Bressette. Ms. Bressette unsure if had received TOR but would send confirmation notification to project team when did. Confirmed that Thomas Bressette still Chief and provided updated mailing address. Confirmed Chief's and her contact information Said that she to be main contact; Chief reference only.</p>	
Mississaugas of the New Credit First Nation	Y						
Mississaugas of the New Credit First Nation		<p>Added to list Sept 9, 2013 as per AG conversation with Carolyn King. Send future correspondence to Chief and Margaret Salt. CC Carolyn King</p>				<p>December 4, 2013 3:40 PM: AG left message at Consultation and Outreach Office for Margaret Salt. Noted that confirming receipt of Revised TOR and who main contact should be for Mississaugas of the New Credit. Asked to email AG (provided email address) once received voicemail. Provided James Hollingsworth's phone number in case hadn't received TOR, or if had questions or comments.</p> <p>No call/email back to confirm contact details. Leave on consultation list until confirmation of main contact for agency.</p> <p>Cell # added December 12, 2013 as per # forwarded to by reception on December 4, 2013.</p>	
Mississaugas of the New Credit First Nation	Y	<p>Phone call Aug 26, 2013. No voicemail- got several busy signals. Will try again.</p> <p>AG spoke with Ms. King on Sept 9, 2013. Confirmed contact details and process. Received Project Re-Intro Letter and would like to remain on contact list and receive copy of ToR.</p> <p>Send copy of ToR, CC Chief Bryan Laforme and Margaret Salt.</p>				<p>December 4, 2013 3:40 PM: AG left message at Consultation and Outreach Office for Margaret Salt. No call/email back to confirm contact details.</p> <p>Leave on consultation list until confirmation of main contact for agency.</p>	

Caldwell First Nation	Chief	Louise	Hillier	P.O. Box 388 Lemington ON N8H 3W3	Phone : (519) 678-3831 Fax : 322-1533 Email : lmh@porchlight.ca;cfncchief@ive.com				Y (to old address: 10297 Talbot Trail, Blenheim, ON N0P 1A0)	Carrie Ann Peters, Caldwell First Nation - January 11, 2013  Our main concern will be the effects this will have on habitats, the water, and any animal that may be in the area for food/shelter. Once ToR and EA are established, if we could set up a meeting for consultation to better get an idea of Project details and processes.	Comment noted.  See addition noted in WIFN correspondence.
Caldwell First Nation	Ms.	Carrie Ann	Peters	P.O. Box 388 Lemington ON N8H 3W3	Email : health@caldwellfirstnation.com						
Six Nations of the Grand River	Chief	Ava	Hill	P.O. Box 5000 Ohsweken ON N0A 1M0	Phone : (519) 445-2201 Fax : 445-4208 Email : avahill@sixnations.ca;				Y (To old address: 1695 Chiefswood Road, Ohsweken, ON)	Joanne Thomas, Consultation Point Person, Six Nations Land and Resources - Dec. 14, 2012. (same request was emailed on January 8, 2013 directly to CRA)  Six Nations would like a representative from St. Marys Landfill to come to a meeting to give us more information on the expansion. Due to capacity issues, I do not think we can get our comments in by Dec. 24, 2012. But still like to meet to discuss the expansion.	Jim Yardley of CRA replied in an email on December 19, 2012 as follows:  "Your request for a meeting has been forwarded to me and I have discussed this with the Town staff. The Town is willing to discuss the Terms of Reference with you and that once the Terms of Reference have been approved and the Environmental Assessment is commenced, consultation is a key element to the program.  Walpole Island First Nation has made a similar request for additional information regarding the Environmental Assessment. At this time, a meeting has not been set-up, but a commitment has been made to meet with Walpole Island First Nation in late March or early April and prior to the start of the field work at the Site. This meeting would most likely occur in St. Marys and would include a site visit/ tour.  I am willing to discuss this project with you at anytime, as well as to discuss and determine the appropriate time and place for a meeting on this matter."  See addition noted in WIFN correspondence.
Six Nations of the Grand River	Ms.	Joanne	Thomas	Consultation Point Person P.O. Box 5000 Ohsweken ON N0A 1M0 Phone: (519) 445-2563	Email : jthomas@sixnations.ca						
Six Nations of the Grand River	Ms.	Caron	Smith	P.O. Box 5000 Ohsweken ON N0A 1M0 Phone: (519) 445-2563	Email : csmith@sixnations.ca						
Haudenosaunee Development Institute	Ms.	Hazel	Hill	Interim Director  Six Nations of the Grand River Territory 16 Sunrise Court Suite 407, PO Box 714  Ohsweken ON N0A 1M0	Phone : (519) 445-4222-755-2769 Fax : (519) 445-2389 Email : hsi2@bellnet.ca						
Haudenosaunee Confederacy Chiefs Council	Chief	Allen	MacNaughton	P.O. Box 714  Ohsweken ON N0A 1M0	Phone : 519-755-2769						
Windsor Essex Metis Council	Mr.	George	Johnson	President 145-600 Tecumseh Road East Windsor ON N8X 4X9					Y		

Caldwell First Nation	Y					December 4, 2013 3:47 PM: AG left message for Louise Hillier. Noted that following up with receipt of Revised TOR, and to contact James Hollingsworth (provided phone number) if had any comments or concerns.	
Caldwell First Nation	Jamie Hollingsworth sent email to Ms. Carrie Anne Peters August 14, 2013 proposing August 22, 2013 10:30 am site meeting			N - Sent invite Aug 14 - Unable to attend on Aug 21 - Invited to meeting August 20 3pm, 2103 via phone call August 15, 2013 - Meeting date yet TBD	Email received from Ms. Carrie Anne Peters August 14, 2013 noting that could not attend proposed August 22 date. Mr. Hollingsworth called Ms. Peters August 15, 2013: -Noted that August 20, 3pm available for meeting -Ms. Peters noted that chief away that week -Mr. Hollingsworth noted that construction on site means only one Caldwell FN rep needed. -Ms. Peters said would confirm if August 20, 2013 worked -Mr. Hollingsworth explained EA and TOR process and status of project -Mr. Hollingsworth noted that can send draft TOR if requested  Email comment received from Carrie Anne Peters September 16, 2013 as follow up to meeting; inquired whether any changes to project and whether TOR or EA available yet. -Email response sent by Mr. Hollingsworth September 23, 2013 noting that no significant changes & that team will finalize ToR based off of MOE and Town of St. Mary's comments, and send to Caldwell First Nation.		
Six Nations of the Grand River	Y			N - August 15, 2013 JH spoke with Joanne Thomas and proposed August 20, 2013 meeting. Ms. Thomas declined; date yet to be determined.	2 phone calls between Jamie Hollingsworth (RJB) and Joanne Thomas (Six Nations) on August 15, 2013. Items discussed: -potential meeting August 20, 2013  -Ms. Thomas noted that Six Nations has Consultation and Accommodation Policy, currently being updated  Email received from Ms. Thomas August 15, 2013:  -included link to Policy mentioned in call -declined proposed site meeting dates of August 20 and 22, 2013 -suggested that meeting date TBA soon.  Email received By Jamie Hollingsworth from Ms. Caron Smith November 8, 2013 in response to Capacity Expansion EA TOR. Noted that Six Nations is interested in project and would like to have a copy of the updated TOR.  Email response sent by Jamie Hollingsworth November 8 <sup>th</sup> noting that TOR to be sent in near future and that Ms. Smith will be added as primary contact for mailing list.  Email response received from Ms. Caron Smith November 8, 2013 requesting that the Chief continue to be primary contact with her copied. Ms. Smith's email address added as per this request.  Email response sent by Jamie Hollingsworth November 8, 2013 confirming that would continue to send to Chief and copy Ms. Smith in correspondence.	New Chief information added December 12, 2013 as per conversation between AG and Joanne Thomas on December 4, 2013. Ms. Thomas noted that new Chief as of November 2013 and that Chief to be main contact for correspondence with Copy to Joanne Thomas.	
Six Nations of the Grand River	Jamie Hollingsworth sent email letter to Joanne Thomas August 14, 2013 proposing meeting date of August 22, 2013 at 10:30 am.			N - Sent invite Aug 14 - Unable to attend on Aug 21	December 4, 2013 3:49 PM: AG spoke with Joanne Thomas. Confirmed that aware of project, but unsure if received Revised TOR as was sent to Chief's office. Noted to send correspondence to Chief but to put "ATTENTION: Joanne Thomas" so it's forwarded to her as well. Provided updated contact information for new Chief. AG noted that would update contact list, and reminded Ms. Thomas to contact either PM (provided Mr. Hollingsworth's contact information) if any questions or concerns.		
Six Nations of the Grand River	Email received from Joana indicating Caron Smith would be a contact regarding the archaeological findings.				December 20, Email sent to Caron Smith to arrange a meeting in the new year.		
Haudenosaunee Development Institute	Letter sent by courier to HDI July 11, 2013 informing them of TOR, included copy of draft TOR for review. (Different than re-intro letter as they had not been involved in project previously)  Letter received July 12, 2013 by HDO (as confirmed by Joanne General via email August 15, 2013).	July 22, 2013: attempted to reach by telephone (519-755-2769). Left message with receptionist.  <a href="mailto:hdi2@bellnet.ca">July 29, 2013: Attempted to reach by email (hdi2@bellnet.ca)</a>  Aug. 9, 2013: attempted to reach by telephone (519-445-4222). Left voicemail message.  Called August 12, 2013. Received email from Joanne General August 15, 2013 confirmed that letter (dated July 11) received as well as August 12, 2013 phone call.			Email received August 15, 2013 from Joanne General noting that she is the office manager at HDI, that sent mail to RJB in response to letter received July 12, 2013 (dated July 11), and call received August 12, 2013. Asked to disregard error in letter stating that RJB has a file number with HDI.  Email response sent by Jamie Hollingsworth August 15, 2013 requesting copy of letter, as hadn't been received.  Response email from Joanne General received August 15, 2013 with attached letter from Hazel Hill (HDI). Attached letter dated August 14, 2013 noted that Haudenosaunee have treaty rights in Project area, therefore RJB must adhere to Lands Rights Statement, Haudenosaunee Green Plan and Haudenosaunee Development Protocol. Application of Engagement to be submitted to HDI. Included attached Application Form.  Email and letter forwarded to Tricia Radburn on August 15, 2013 with notes on application details (regarding fees and strategy for application).	December 4, 2013 4:14 PM: AG spoke with Hazel Hill. Ms. Hill confirmed receipt of Revised TOR but still reviewing as short staffed. Ms. Hill concerned that more standard mode of consultation necessary to ensure compliance with HDI requirements and ensure that Treaty Rights and Impacts are addressed. Suggested meeting in future and review of online guidelines regarding Treaty Rights and consultation process. Noted confirmation that HDI had been engaged as per conversation, as has not been yet to date.	
Haudenosaunee Confederacy Chiefs Council	Letter sent by registered mail to HDI July 11, 2013 informing them of TOR, included copy of draft TOR for review. (Different than re-intro letter as they had not been involved in project previously)	July 22, 2013: attempted to reach by telephone (519-755-2769). Left voicemail message.  Follow up letter sent July 29, 2013.  Aug. 9, 2013: succeeded in reaching Chief Allen MacNaughton by telephone (519-755-2769).			Record of Telephone conversation between Jamie Hollingsworth and Chief as follows:  "I told him I was following-up on the proposed Terms of Reference (TOR) for the Town that had been sent to him (by registered letter) about a month ago. He said that he has not received anything, but in any event we should be communicating with HDI and not him. HCCC has passed a resolution that HDI acts on their behalf for such reviews. I asked him if he could send me a letter to this effect and he said no, he will not. He said that I should follow-up with HDI and get direction from them. He then asked if I had sent the TOR to HDI. When I told him that I have sent it to HDI he said that was good. I thanked him for his time and we disconnected the call."  Based on this, Burnside will remove HCCC from any further communications regarding the TOR and the subsequent EA efforts.		
Windsor Essex Metis Council							



						Removed from contact list December 12, 2013 as per conversation with Andrew Good on December 5, 2013. Andrew noted that no longer on Council. Forwarded to Peter Rivers (519-980-6369). Peter said that there was no need to contact him; that James Wagar to be main contact and would forward information to Mr. Rivers.	
Métis Nation of Ontario		<p>Left message Aug 26, 2013</p> <p>AG spoke with Mr. Wagar Sept 9, 2013. Has not received Project Re-Intro Letter; please forward <b>Re-Intro Letter along with ToR</b>. Wishes to remain on mailing list. <b>Email correspondence preferred.</b></p> <p><b>Call back in 2 weeks to confirm receipt of information</b></p>				<p>December 5, 2013 4:00 PM: AG spoke with James Wagar. Mr. Wagar said he had not received the Revised TOR yet, but likely on the way. Asked AG to update records and send consultation to Gary Lipinski (by mail), Mr. Wagar (email) and copy consultation email to allow processing. AG provided Mr. Hollingsworth's phone number if any concerns about project.</p> <p>AG added consultation email as per conversation.</p>	
Métis Nation of Ontario	Y					Send correspondence by mail to Mr. Lipinski and by email to James Wagar with CC to consultation email address (as per December 5, 2013 conversation with James Wagar).	
Association of Iroquois and Allied Indians							
Association of Iroquois and Allied Indians							
Association of Iroquois and Allied Indians	Y	<p>AG called and left message on Sept 9, 2013.</p> <p>AG emailed on September 13, 2013.</p>				<p>December 5, 2013 4:35 PM: AG called but not correct phone number (residential number). Phone number removed as incorrect.</p> <p>December 5, 2013 4:15 PM: AG sent email to Denise Stonefish to inquire whether had received Revised TOR and to confirm who main contact is. Provided contact information for James Hollingsworth and Dave Blake in case any concerns, or if had not received TOR.</p>	

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**Attachment E3a**  
**Aboriginal Consultation Summary**



Agency/Organization	Title	First Name	Last Name	Position	Address 1	Address 2	City	Province	Postal Code	Email	Telephone	Fax
Canadian Transportation Agency - Rail, Air and Marine Disputes Directorate	Mr.	Luc	Fortin	Senior Environmental Officer	15 Eddy Street		Gatineau	QC	K1A 0N9	luc.fortin@otc-cta.gc.ca	(819) 953-2238	(819) 953-8353
Department of Fisheries and Oceans Canada - Southern Ontario District	Mr.	Paul	Savoie	Regional Environmental Assessment Analyst	District Office, 3027 Harvester Road	Unit 304	Burlington	ON	L7R 4K3		(905) 639-8687	(905) 639-3549
Environment Canada - Ontario Region	Mr.	Rob	Dobos	Manager, Environmental Assessment Section	867 Lakeshore Road	P.O. Box 5050	Burlington	ON	L7R 4A6	rob.dobos@ec.gc.ca	(905) 336-4953	(905) 336-8901
Transport Canada - Ontario Region (PHE) Environment and Engineering				Environmental Coordinator	4900 Yonge Street		North York	ON	M2N 6A5	EnviroOnt@tc.gc.ca		(416) 952-0514
Hydro One Networks Inc.	Mr.	Walter	Kloostra	Sustainment Investment Planning	483 Bay Street	North Tower, 15th Flo	Toronto	ON	M5G 2P5	w.d.kloostra@hydroone.com	(416) 345-5114	(416) 345-5443
Ministry of Agriculture, Food and Rural Affairs- West-Central Region	Ms.	Carol	Neumann	Rural Planner	6484 Wellington Road 7	Unit 10	Elora	ON	N0B 1S0	carol.neumann@ontario.ca	(519) 846-3393	(519) 846-8178
Ministry of Infrastructure - Ontario Growth Secretariat, Growth Policy, Planning and Analysis Branch	Mr.	Andrew	Theoharis	Manager (A), Growth Policy	777 Bay Street	4th Floor, Suite 425	Toronto	ON	M5G 2E5	andrew.theoharis@ontario.ca	(416) 325-5794	(416) 325-7403
Ministry of Municipal Affairs and Housing- Western Municipal Service Office	Mr.	Bruce	Curtis	Manager, Community Planning and Development	659 Exeter Road	2nd Floor	London	ON	N6E 1L3	bruce.curtis@ontario.ca	(519) 873-4026	(519) 873-4018
Ministry of Natural Resources- Guelph (Southern Region)	Mr.	David	Marriot	District Planner (A)	1 Stone Road West		Guelph	ON	N1G 4Y2	mike.stone@ontario.ca; david.marriot@ontario.ca	4955; (519) 826-4912; (519) 826-4929 (David)	(519) 826-4929
Ministry of Tourism, Culture and Sport, Culture Services Unit	Ms.	Paula	Kulpa	Land Use Planning, Culture Services Unit	401 Bay Street	Suite 1700	Toronto	ON	M7A 0A7	paula.kulpa@ontario.ca	(416) 314-7137	(416) 314-7175
Ontario Power Generation	Ms.	Susan	Rapin	Director, Environment Services	700 University Avenue		Toronto	ON	M5G 1X6	susan.rapin@opg.com	(416) 592-6399	
Bell Canada, Municipal Operations Centre	Mr.	John	Lachapelle		100 Borough Drive	Floor 5 Blue	Scarborough	ON	M1P 4W2			
Enbridge Gas Distribution Inc.	Mr.	Vince	Cina	Supervisor, Planning and Design	500 Consumers Road		North York	ON	M2J 1P8			
MTS - Allstream					50 Worcester Road		Etobicoke	ON	M9W 5X2	utility.circulations@mtsallstream.com	(416) 649-7527	
Rogers Communications	Ms.	Marian	Wright	Planning Coordinator	3573 Wolfedale Road		Mississauga	ON	L5C 3T6	Marion.Wright@rci.rogers.com	(905) 897-3914; (888) 764-3771	
Upper Thames Conservation Authority				Planner	1424 Clarke Road		London	ON	N5V 5B9	info@thamesriver.on.ca	(519) 451-2800	(519) 451-1188
Union Gas Limited	Ms.	Lindsay	Robinson	District Engineer	PO Box 2001		Chatham	ON	N7M 5M1		(519) 352-3100	
Consultation and Accommodation Unit (CAU) Ontario Office										UCA-CAU@aadnc-aandc.gc.ca (use 'Aboriginal consultation information')		
Ministry of Aboriginal Affairs - Policy and Relationships Branch										MAA_EA_Review@ontario.ca		
Infrastructure Ontario	Mr.	Keith	Noronha	Environmental Management, Team Assistant						Keith.Noronha@infrastructureontario.ca	(416) 327-2755	
Environmental Assessment Coordination, Environment Unit, Lands and Trusts Services					25 St. Clair Avenue East	8th Floor	Toronto	ON	M4T 1M2	EACoordination_ON@aadnc-aandc.gc.ca		
Canadian Environmental Assessment Agency - Ontario Region	Ms.	Anjala	Puvanathan	Ontario Region Director	55 St. Clair Avenue East	Suite 907	Toronto	ON	M4T 1M2	anjala.puvanathan@ceaa-acee.gc.ca	(416) 952-1575	(416) 952-1573
Department of Fisheries and Oceans Canada - Fish Habitat Management	Ms.	Sara	Eddy	Senior Habitat Biologist, Ontario-Great Lakes Area	District Office	867 Lakeshore Road	Burlington	ON	L7R 4A6	sara.eddy@dfo-mpo.gc.ca	(905) 336-4535	(905) 336-6286
Hydro One Inc.	Mr.	Tony	Ierullo	Manager	483 Bay Street	North Tower, 14th Flo	Toronto	ON	M5G 2P5	ierullo@HydroOne.com	(416) 345-5213	(416) 345-5395
Hydro One Real Estate Management	Ms.	Joan	Zhao		185 Clegg Road		Markham,	ON	L6G 1B7	Joan.Zhao@HydroOne.com	(905) 946-6230	
Hydro One Networks Inc.	Mr.	Walter	Kloostra	Sustainment Investment Planning	483 Bay Street	North Tower, 15th Flo	Toronto	ON	M5G 2P5	w.d.kloostra@hydroone.com	(416) 345-5114	(416) 345-5443
Ministry of Environment - Environmental Assessment and Approvals Branch										MEA.NOTICES.EAAB@ontario.ca		
Ministry of the Environment - London Regional and Distict Office, Southwestern Region				Planner and Environmental Assessment Coordinator	733 Exeter Road		London	ON	N6E 1L3		code 519: 1-800-265-7672 (519) 873-5000	(519) 873-5020
Ministry of Transportation - Southwestern Region	Mr.	Kevin	Bentley	Manager- Engineering Office	659 Exeter Road		London	ON	N6E 1L3	kevin.bentley@ontario.ca	(519) 873-4373	(519) 873-4388
Ontario Provincial Police- Operations Policy and Strategic Planning Bureau	Ms.	Paula	Brown		777 Memorial Avenue	3rd Floor	Orillia	ON	L3V 7V3	Paula.Brown@ontario.ca	(705) 329-6903	
Ministry of Health and Long-Term Care	Mr.	Tony	Amalfa	Manager, Environmental Health Policy and Programs	393 University Avenue	21st Floor	Toronto	ON	M7A 2S1	tony.amalfa@ontario.ca	(416) 327-7634	(416) 327-0984
Bell Canada	Ms.	Wendy	Lefebvre	Design Manager, Access Network	5115 Creekbank Road West	3rd Floor	Mississauga	ON	L4W 5R1	wendy.lefebvre@bell.ca	(905) 219-4558	(416) 701-6489
Bell Canada	Mr.	Scott	Moon	Implementation Department	5115 Creekbank Road	3rd Floor, West Tower	Mississauga	ON	L4W 5R1	scott.moon@bell.ca	(905) 219-4558	(416) 701-6489
Festival Hydro	Ms.	Kathy	Pearson	Engineering	Head Office Attention:Kathy Pearson	P.O. Box 397	Stratford	ON	N5A 6T5		(519) 271 4700 ext. 203	(519) 271 7204
Rogers Business Solutions	Mr.	Tony	Basson	Director of Environment and Sustainability	1 Mount Pleasant Road		Toronto	ON	M4Y 2Y5		(416) 935-3140	
Telus												
Enbridge Pipelines Ltd.	Ms.	Ann	Newman	Crossing Co-ordinator	801 Upper Canada Drive	P.O. Box 128	Sarnia	ON	N7T 7H8			
Perth District Health Unit	Dr.	Miriam	Klassen	Medical Officer of Health & Chief Executive Officer	653 West Gore Street		Stratford	ON	N5A 1L4	Web: http://www.pdhu.on.ca	(519) 271-7600	(519) 271-2195

Agency/Organization	Title	First Name	Last Name	Position	Address 1	Address 2	City	Province	Postal Code	Email	Telephone	Fax
Trans Canada Corporation- Community, Safety and Environment					Community, Safety and Environment	450 - 1 Street SW	Calgary	AB	T2P 5H1	cs_e@transcanada.com	1.855.920.1909	1.403.920.2397
Trans-Northern Pipelines Inc.	Mr.	Satish	Korpal	Coordinator, Crossings and Facilities	45 Vogell Road	Suite 310	Richmond Hill	ON	L4B 3P6	skorpal@tnpi.ca	(905) 770-3353 ext. 211	(905) 770-8675
Ausable Bayfield Conservation Authority				Planner	R.R # 3	71108 Morrison Line	Exeter	ON	N0M 1S5	info@abca.on.ca	Toll Free: 1-888-288-2610; (519) 235-2610	(519) 235-1963
St. Marys Fire Department	Mr.	Dennis	Brownlee	Fire Chief	172 James St. S	P.O. Box 2975	St. Mary's	ON		dbrownlee@town.stmarys.on.ca	Tel: 519-284-1752	Fax: 519-284-1751
County of Perth Ambulance	Mr.	Cliff	Eggleton	EMS Deputy Chief/Operations Manager	187 Erie Street, 2nd Floor		Stratford	ON	N5A 2M6	www.perthcounty.ca	(519) 273-7382 ext. 224	
Heritage St. Marys	Mr.	Larry	Pfaff	Co-Chairperson	P O Box 998	St. Marys Town Hall	St. Marys	ON	N4X 1B6	Cultural Services Email:		
Heritage St. Marys	Ms.	Jan	Mustard	Co-Chairperson	P O Box 998	St. Marys Town Hall	St. Marys	ON	N4X 1B6		Tel: 519-284-3556	519-284-3881
Middlesex (London) OPP Dispatch	Mr.	Steve	Porter	Inspector	823 Exeter Road		London	ON	N6E 1W1		519-681-0300	519-680-2649
Avon Maitland District School Board				Planner	Board Education Centre	62 Chalk Street N.	Seaforth	ON	N0K 1W0	info@fc.amdsb.ca	(519) 527-0111 or 1-800-592-5437	(519) 527-0222
Huron Perth District Catholic School Board				Planner	Board Office, 87 Mill Street	P.O. Box 70	Dublin	ON	N0K 1E0		(519) 345-2440	(519) 345-2449
Conseil scolaire Viamonde				Planner	116 Cornelius Pkwy		North York	ON	M6L 2K5	www.csviamonde.ca/csviamonde	(416) 614-0844	(416) 397-2012
Conseil scolaire de district des écoles catholiques du Sud-Ouest					7575 Forest Glade Promenade		Windsor	ON	N8T 3P5	Website: vibe.csdecso.on.ca	(519) 948-9227	(519) 948-1091
Canadian Pacific Railway- Pension Real Estate/ Land Management Office					ATTN: Pension Real Estate/Land Management	1290 Central Parkway	Mississauga	ON	L5C 4R3			
CN Rail	Mr.	Stefan	Linder	Manager, Public Works Design and Construction	4 Welding Way (off Administration Road)		Vaughan	ON	L4K 1B9	stefan.linder@cn.ca	(905) 669-3264	(905) 760-3406
The Corporation of the Town of St. Marys	Mr.	David	Blake	Environmental Coordinator	408 James Street South	P.O. Box 998	St. Marys	ON	N4X 1B6	dblake@town.stmarys.on.ca	519-284-2340 Ext. 209	519-284-0902
Township of Perth South	Ms	Lizet	Scott	Clerk	3191 Road 122		St. Pauls	ON	N0K 1V0	lscott@perthsouth.ca	519-271-0619 ext. 224	519-271-0647
Perth County	Ms.	Kerri Ann	O'Rourke	County Clerk	Office of Chief Administrative Officer	1 Huron Street	Stratford	ON	N5A 5S4		519-271-0531	519-271-2723

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**Attachment E3b**

**Consultation with HDI and HCCC**



July 11, 2013

**Via: Registered Mail**

Chief Allen MacNaughton  
Haudenosaunee Confederacy Chiefs Council  
RR 2  
Ohsweken ON N0A 1M0

Attention: Chief Allen MacNaughton:

**Re: Proposed Terms of Reference, St. Marys Future Solid Waste Disposal  
Needs Environmental Assessment (Amended)  
File No.: 300032339.0000**

The Town of St. Marys (Town), supported by its engineering consultant R.J. Burnside & Associates Ltd., has commenced an individual Environmental Assessment (EA) under the Ontario *Environmental Assessment Act (EA Act)* for the identification and selection of a preferred Solid Waste Disposal option for the Town.

Under the EA Act, the first step in the EA process is the preparation of proposed Terms of Reference (ToR). Once approved by the Minister of the Environment the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA.

In accordance with the *EA Act* and the "Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario" (Ministry of the Environment, October, 2009) the Town has prepared a draft ToR and has commenced consultation leading to the preparation, and submission of a proposed ToR to the Minister for a decision. A copy of the most recent revision of the Town's draft proposed ToR accompanies this letter.

In consultation with the Ministry of the Environment's Environmental Assessment and Approvals Branch, you have been identified as potentially having an interest in the Town's environmental assessment.

Could you please advise us by August 11, 2013, if the Town's EA and the accompanying draft proposed ToR are of interest and let us know if you wish to engage in further consultation on the project? A brief letter, fax or e-mail message to that effect would be appreciated. My contact details are as follows:

James Hollingsworth, P.Eng.  
Manager Solid Waste Services  
R.J. Burnside & Associates Ltd.  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905.420.5777 x 803  
Fax: 905.420.5247  
Email: Jamie.Hollingsworth@rjburnside.com

The Town is also interested in any questions or comments you may have on the enclosed draft ToR. Please also send these to my attention by the same date so that they can be fully considered in the ToR's finalization. Having expressed an interest in the project we will ensure that your questions, comments and other input is sought throughout the remaining stages of the EA, during the coming year.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Manager, Solid Waste Services  
JRH:cv

c: David Blake, Town of St. Marys (No enclosures) (Via: Mail)

Encl: Two (2) paper copies and one (1) digital copy of *Proposed Terms of Reference, St. Marys Future Solid Waste Disposal Needs Environmental Assessment (Amended)*



**BURNSIDE**

[THE DIFFERENCE IS OUR PEOPLE]

July 11, 2013

**Via: Courier**

Hazil Hill  
Haudenosaunee Development Institute  
Six Nations of the Grand River Territory  
16 Sunrise Court, Suite 417, P.O. Box 714  
Ohsweken, Ontario N0A 1M0

Attention: Hazil Hill:

**Re: Proposed Terms of Reference, St. Marys Future Solid Waste Disposal  
Needs Environmental Assessment (Amended)  
File No.: 300032339.0000**

The Town of St. Marys (Town), supported by its engineering consultant R.J. Burnside & Associates Ltd. (Burnside), has commenced an individual Environmental Assessment (EA) under the Ontario *Environmental Assessment Act (EA Act)* for the identification and selection of a preferred Solid Waste Disposal option for the Town.

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James Hollingsworth, P.Eng.  
Manager Solid Waste Services  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905.420.5777 x 803  
Fax: 905.420.5247  
Email: Jamie.Hollingsworth@rjburnside.com

The Town is also interested in any questions or comments you may have on the enclosed draft ToR. Please also send these to my attention by the same date so that they can be fully considered in the ToR's finalization. Having expressed an interest in the project we will ensure that your questions, comments and other input is sought throughout the remaining stages of the EA, during the coming year.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Manager, Solid Waste Services  
JRH:cv

c: David Blake, Town of St. Marys (No enclosures) (Via mail)

Encl: Two (2) paper copies and one (1) digital copy of Proposed Terms of Reference,  
St. Marys Future Solid Waste Disposal Needs Environmental Assessment  
(Amended)



July 29, 2013

**Via: Mail**

Chief Allen MacNaughton  
Haudenosaunee Confederacy Chiefs Council  
RR 2  
Ohsweken, ON N0A 1M0

Dear Chief Allen MacNaughton:

**Re: Proposed Terms of Reference, St. Marys Future Solid Waste Disposal  
Needs Environmental Assessment (Amended)  
File No.: 300032339.0000**

The Town of St. Marys has initiated an individual Environmental Assessment (EA) to decide upon a preferred option for their future solid waste disposal needs. On July 11, 2013, Burnside, on the Town's behalf, sent a cover letter and a copy of the proposed Terms of Reference for undertaking this EA to your attention by registered mail. On July 22, 2013 I left a voice mail message in this same regard using an unconfirmed phone number that Burnside has used previously for contacting the Haudenosaunee Confederacy Chiefs Council (HCCC) on other projects.

Per our previously mailed package, the Town is looking for any comments that the HCCC may have on the proposed Terms of Reference. Alternatively, if the HCCC has no interest in this EA effort, Burnside can remove you from the contact list. In order to continue our process forward, we respectfully request your comments, questions or desire to be removed from the mailing list by August 11, 2013.

Further, it would be appreciated if you can please provide updated phone, fax and email information for yourself and the HCCC. This will be most helpful for our future communications on this project or other projects. Burnside, and our sister company Neegan Burnside Ltd., are very active on projects in southwestern Ontario, where HCCC may have interests.

If I can be of any further assistance, please do not hesitate to contact me by phone, email or fax. My contact details are as follows:

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200



Pickering ON L1V 7G7  
Phone: 905.420.5777 x 803  
Fax: 905.420.5247  
Email: jamie.hollingsworth@rjburnside.com

Yours truly,

**R.J. Burnside & Associates Limited**

A handwritten signature in black ink, appearing to read "James R. Hollingsworth". The signature is fluid and cursive, with a long horizontal stroke at the end.

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JH:ls

cc: Mr. David Blake, Town of St. Marys (Via email: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca))

130729 MacNaughton.docx  
29/07/2013 3:04 PM



**Jamie Hollingsworth /RJB**

08/09/2013 02:52 PM

To: "Dave Blake" <dBlake@town.stmarys.on.ca>,  
cc: "Chad Papple" <cpapple@town.stmarys.on.ca>, Debanjan  
Mookerjee/RJB@RJB, Tricia Radburn/RJB@RJB  
Subject: St. Marys (300032339) - Contacting HDI and HCCC  
:

Dave;

I have just gotten off the phone trying to follow-up with our submissions to HDI and HCCC. Here is the status:

#### **Haudenosaunee Development Institute (HDI)**

I attempted to reach Ms. Hazil Hill of HDI by telephone (519-445-4222). I got HDI's general vmail and left a message. I provided my name, office phone number and indicated that I was following-up on our submission for the Town's proposed Terms of Reference for the waste disposal Environmental Assessment. I asked that Ms. Hill or someone else authorized to comment please give me a call .

I will let you know if I hear anything .

#### **Haudenosaunee Confederacy Chiefs Council (HCCC)**

I succeeded in reaching Chief Allen MacNaughton by telephone (519-755-2769). You will recall that the Chief is the contact name we were provided by the MOE. I told him I was following-up on the proposed Terms of Reference (TOR) for the Town that had been sent to him (by registered letter) about a month ago. He said that he has not received anything, but in any event we should be communicating with HDI and not him. HCCC has passed as resolution that HDI acts on their behalf for such reviews. I asked him if he could send me a letter to this effect and he said no, he will not. He said that I should follow-up with HDI and get the direction from them. He then asked if I had sent the TOR to HDI. When I told him that I have sent it to HDI he said that was good. I thanked him for his time and we disconnected the call.

**Based on this , Burnside will remove HCCC from any further communications regarding the TOR and the subsequent EA efforts .**

Burnside will document this information for use in the TOR. I note that our letters submitting the TOR for review asked for a response by August 11, 2013. We have not seen anything yet, but I will let you know if we do hear anything, get a letter, etc.

Have a great weekend.

Take Care,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247



## Haudenosaunee Development Institute

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August 14, 2012

Mr. James Hollingsworth, P. Eng.  
Manager Solid Waste Services  
R.J Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, ON L1V 7G7

Dear Mr. Hollingsworth:

**Re: Proposed Terms of Reference, St. Mary's Future Solid Waste Disposal**

Thank you for your letter dated July 11, 2013 received in this office on July 12, 2013 and your telephone call received in this office August 12, 2013.

The Haudenosaunee Confederacy Chiefs Council ('HCCC') has legislated the Haudenosaunee Development Institute ('HDI') to represent HCCC interests in the development of lands within areas of Haudenosaunee jurisdiction, including but not limited to the land prescribed by the Haldimand Proclamation and the 1701 Treaty Area.

We can confirm that the Haudenosaunee have treaty rights, in particular in the area contemplated by your Project, including but not limited to, the right to free and undisturbed harvesting. As the proposed Project will have a negative impact upon those treaty rights, the nature and scope of engagement required is significantly above and beyond what is commonly referred to as "consultation".

The HDI has established and administers a regulatory framework, which identifies, registers, and regulates development in compliance with the regulatory obligations outlined in our Lands Rights Statement, the Haudenosaunee Green Plan ('HGP') and Haudenosaunee Development Protocol ('HDP').

Part of that process requires an Application for Engagement to be submitted to the HDI, which I have attached for your ease of reference. The Application for Engagement provides proponents a structured engagement process, which allows the HDI to set up and clarify the nature of what will be impacted by the Project and to determine if those infringements are justified and whether or not they can be accommodated.

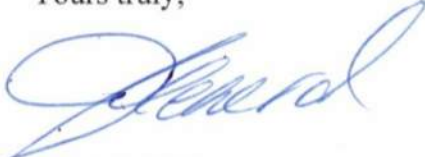
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### OUR LAND, OUR LAW, OUR PEOPLE, OUR FUTURE

Six Nations of the Grand River Territory • Suite 417 - 16 Sunrise Court • P.O. Box 714 • Ohsweken, Ontario N0A 1M0  
Telephone • 519.445.4222 Facsimile • 519.445.2389 • hdi2@bellnet.ca

We look forward to the receipt of your application at which time we can arrange a convenient time to meet to discuss your Project.

Yours truly,

A handwritten signature in blue ink, appearing to be 'Hazel E. Hill', written in a cursive style.

*for* Hazel E. Hill  
Interim Director  
Attach. (3)

## **HAUDENOSAUNEE DEVELOPMENT PROTOCOL**

### **Definition**

1. In this Protocol,

“Authority” means the Haudenosaunee Development Institute (“HDI”)

“Proponent” means a person contemplating any development within the Area of Jurisdiction

“Area of Jurisdiction” means that area generally set out by the Haudenosaunee and without limiting the foregoing includes lands described as the Haldimand Tract

### **Development prohibited**

2. Subject to section 3, no person shall undertake development, or permit another person to undertake development in or on the areas within the Authority’s Area of Jurisdiction.

### **Permission to develop**

3. The Authority may grant permission for development in or on the areas described in subsection 2 if, in its opinion:

- i. the development meets the environmental standards of the Authority; and
- ii. the Proponent agrees to enter into such agreements as determined necessary by the Authority; and
- iii. the development is in accordance with any Regulations or policies developed pursuant to this Protocol.

### **Application for permission**

4. A signed application for permission to undertake development shall be filed with the Authority and shall contain the following information:

1. Four copies of a plan of the area showing the type and location of the development.
2. The proposed use of the buildings and structures following completion of the development.
3. The start and completion dates of the development.

4. The elevations of existing buildings, if any, and grades and the proposed elevations of buildings and grades after development.
5. Details and a history of the Proponent's title including details pertaining to any purported surrenders of the land by the Haudenosaunee.
6. Drainage details before and after development.
7. A complete description of the type of fill proposed to be placed or dumped.

#### **Cancellation of permission**

8. (1) The Authority may cancel permission if it is of the opinion that the conditions of the permission have not been met.
- (2) Before canceling permission, the Authority shall give a notice of intent to cancel to the holder of the permission indicating that the permission will be cancelled unless the holder shows cause at a hearing why the permission should not be cancelled.
- (3) Following the giving of the notice, the Authority shall give the holder at least five days notice of the date of the hearing.

#### **Validity of permissions and extensions**

9. (1) A permission of the Authority is valid for a maximum period of 24 months after it is issued, unless it is specified to expire at an earlier date.
- (2) A permission may be extended at the discretion of the Authority for such time period as the Authority deems appropriate.

#### **Appointment of officers**

10. The Authority may appoint officers to enforce this Protocol.

#### **Fees**

11. The Authority may at its sole discretion set fees for any of the activities contemplated by this Protocol.

#### **Environmental Standards**

12. The Authority shall provide for such environmental standards as in its sole discretion are necessary and appropriate.
13. The Authority may from time to time amend the applicable environmental

standards in consultation with the Haudenosaunee Confederacy Chiefs Council.

14. The Authority may establish an Environment Review Commission ('ERC') and appoint members to the ERC.

15. The ERC shall make recommendations to the authority with respect to the application of appropriate environmental standards.

16. The Authority may refer matters to the ERC with respect to determining whether a proponent's application meets the Authority's environmental standards.

17. Members of the ERC may be removed from the ERC at the discretion of the Authority and/or the Haudenosaunee Confederacy Chiefs Council and where there is a conflict with respect to a removal decision as between the Authority and the Haudenosaunee Confederacy Chiefs Council the decision of the Haudenosaunee Confederacy Chiefs Council shall prevail.

#### **General**

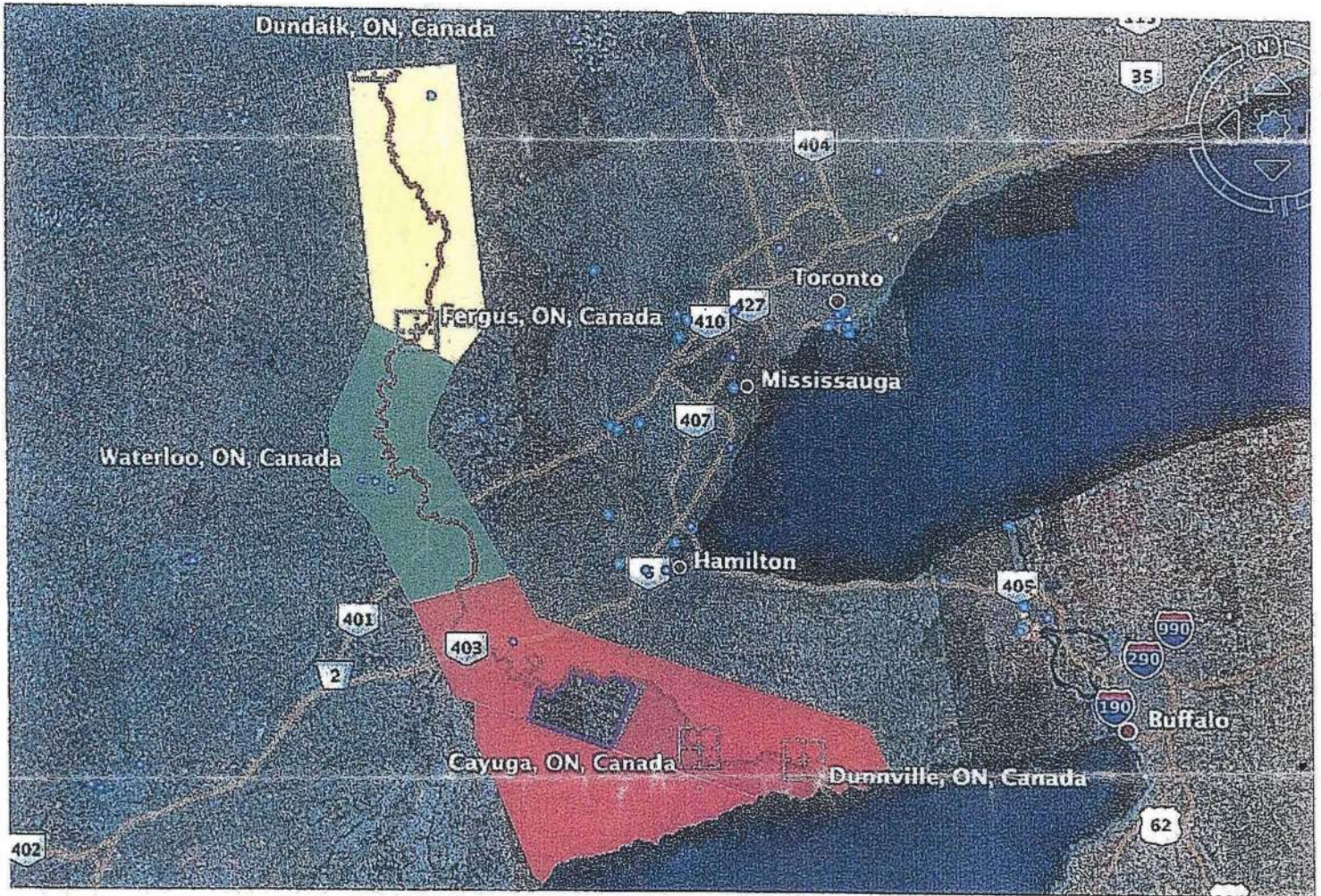
18. The Authority may take such actions as necessary to provide for the implementation of this Protocol which may include the delegation of such activities as required.

19. The Authority may make such Regulations under this Protocol as are necessary to further the objectives of the Protocol and without limiting the foregoing the HDI may make Regulations pertaining to:

1. Land Use Agreements
2. Environmental Standards
3. Application and Permit Fees

Tseh Niyocht Dwayadowehsra Ogwahweja Wihwageh

## Haudenosaunee Green Plan





### **Areas of Concern I**

We are proposing 1/4 mile buffer zone on each side of river

### **Areas of Concern II**

Haudenosaunee Places to Grow

### **Areas of Concern III**

Where we have clear land rights

### **Development within our Areas of Concern**

**RED ZONE** (zero to minimal development)

1/4 mile on each side of river from mouth to source

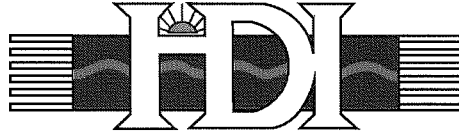
Haudenosaunee Places to Grow

Land right areas

**YELLOW ZONE** (Significant Consultation)

**GREEN ZONE** (Minimal consultation)

where agreed upon compensation such as land use permit and where no serious environmental impact



**Haudenosaunee Development Institute**  
Our Land, Our Law, Our People, Our Future

**APPLICATION FOR CONSIDERATION  
AND ENGAGEMENT FOR DEVELOPMENT**

NOTE: *This application to be completed in quadruplicate.*

**SECTION 1: APPLICANT INFORMATION**

1.1 Name of applicant and full mailing address:

Tel: \_\_\_\_\_

Fax No.: \_\_\_\_\_

1.2 Name of Registered owner(s) of subject land(s) and mailing address:

1.3 Party who is to be contacted about the application (check one):

Applicant  Agent, Planning Consultant  Owner  Surveyor

Name and address:

Tel: \_\_\_\_\_

Fax No.: \_\_\_\_\_

Email: \_\_\_\_\_

**SECTION 2: LOCATION OF LANDS PROPOSED TO BE DEVELOPED**

2.1 Municipal address:

2.2 Legal description (please attach survey):

2.3 Maps (please attach):

**SECTION 3: PROPOSED AND CURRENT LAND USE**

3.1 Current land use: (i.e. Agricultural, residential, commercial, industrial, other):

3.2 Proposed use of subject land:

3.3 Are there any buildings or structures on the lands proposed to be developed?

If yes, are these buildings to be retained, demolished or otherwise removed?

**SECTION 4: ADDITIONAL INFORMATION FOR THE SITE**

4.1 Current zoning: \_\_\_\_\_

## **SECTION 5: ARCHAEOLOGY**

- 5.1 Have any archaeology studies been completed? If yes please attach.
- 5.2 If no archaeology studies have been undertaken to date are any archaeology studies planned? Please include any relevant details.

## **SECTION 6: LAND TITLE**

- 6.1 Please provide details and a history of the title including any information on the initial Crown patent and how the Crown obtained such patent.

## **SECTION 7: TIME FRAME**

- 7.1 Please set out the scheduling proposed for the project and any significant dates.

## **SECTION 8: OTHER PERMITS, LICENCES AND/OR APPROVALS**

- 8.1 Please provide details with respect to any other permits, licences and/or approvals which the Applicant is seeking for the project from any municipal, provincial and/or federal authority.

## **SECTION 9: APPLICATION FEE**

- 9.1 An application fee is enclosed in the amount of \$ \_\_\_\_\_ on the basis that the cost of the proposed project is:
- Less than \$300,000 (fee of \$3,000)
  - Greater than \$300,000 but less than \$500,000 (fee of \$5,000)
  - Greater than or equal to \$500,000 (fee of \$7,000)

## **SECTION 10: OTHER INFORMATION**

- 10.1 The HDI reserves the right to request such other information as it deems necessary in its sole discretion to process this application.

**SECTION 11: FORM OF APPLICATION**

11.1 This form is provided for information purposes and requests the minimal information required to process an application. An applicant is free to amend the form as necessary and include such other information as necessary.

11.2 Application is to be provided to:

Haudenosaunee Development Institute

16 Sunrise Court, Suite 407

P.O. Box 714

Ohsweken, Ontario

N0A 1M0

Tel: 519.445.4222

**SECTION 12: SIGNATURE OF APPLICANT**

Name of Applicant:

Signature of Applicant:

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.



---

**Attachment E3c**  
**Project Re-Introduction Letters**



August 15, 2013

**Via: Mail**

Chief Joel Abram  
Oneida Nation of the Thames  
Oneida of the Thames  
2212 Elm Avenue  
Southwold ON N0L 2G0

Dear Chief Abram:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Town of St. Marys to complete an Environmental Assessment which will consider options to address the Town's residential, commercial and industrial waste disposal needs for the next 40 years.

The Environmental Assessment ("EA") will be conducted as an Individual EA under Ontario's *Environmental Assessment Act*. It will, therefore, be conducted in two stages:

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Burnside is now completing the TOR and will continue to be the project contact throughout the remainder of the EA. We are now in the process of updating the TOR to meet provincial guidelines. Some changes from the previous version are as follows:

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At this time, we wish to confirm your interest in the EA, including an indication of whether you would like to receive a copy of the updated draft Terms of Reference for review.

**To confirm your interest please:**

Contact us at:

James R. Hollingsworth, P.Eng.  
Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
Tel: 905-420-5777  
Fax: 905-420-5247

Or, complete the attached form and return it by **August 28, 2013** to confirm your interest.

If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)





**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

---

<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Oneida Nation of the Thames:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Chief Patrick Waddilove  
Munsee-Delaware First Nation  
Administration Office  
RR# 1, 289 Jubilee Road  
Muncey ON N0L 1Y0

Dear Chief Waddilove:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

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Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

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<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Munsee-Delaware First Nation:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



BURNSIDE

[ THE DIFFERENCE IS OUR PEOPLE ]

August 15, 2013

**Via: Mail**

Chief Richard 'Joe' Miskokomon  
Chippewas of the Thames First Nation  
320 Chippewa Road  
RR #1  
Muncey ON N0L 1Y0

Dear Chief Miskokomon:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

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Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
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Fax: 905-420-5247

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Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

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## Confirmation of Interest

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<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Chippewas of the Thames First Nation:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Chief Gregory Peters  
Delaware Nation, Moravian of the Thames  
14760 School House Line  
RR #3  
Thamesville ON N0P 2K0

Dear Chief Peters:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

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Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

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<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Delaware Nation, Moravian of the Thames:

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- Has an interest in this project and,
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  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

August 15, 2013

**Via: Mail**

Chief Burton Kewayosh  
Walpole Island First Nation  
(Bkejwanong Territory)  
117 Tahgahoning Road, RR #3  
Wallaceburg ON N8A 4K9

Dear Chief Kewayosh:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

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If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

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<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Walpole Island First Nation  
(Bkejwanong Territory):

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Mr. Jared Macbeth  
Walpole Island First Nation  
(Bkejwanong Territory)  
117 Tahgahoning Road, RR #3  
Wallaceburg ON N8A 4K9

Dear Mr. Macbeth:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

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Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

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<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

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(Bkejwanong Territory):

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Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date





August 15, 2013

**Via: Mail**

Chief Chris Plain  
Aamjiwnaang First Nation  
Aamjiwnaang Administration Office  
978 Tashmoo Avenue  
Sarnia ON N7T 7H5

Dear Chief Plain:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

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JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

---

<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Aamjiwnaang First Nation:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Ms. Sharilyn Johnston  
Aamjiwnaang First Nation  
Aamjiwnaang Administration Office  
978 Tashmoo Avenue  
Sarnia ON N7T 7H5

Dear Ms. Johnston:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Town of St. Marys to complete an Environmental Assessment which will consider options to address the Town's residential, commercial and industrial waste disposal needs for the next 40 years.

The Environmental Assessment ("EA") will be conducted as an Individual EA under Ontario's *Environmental Assessment Act*. It will, therefore, be conducted in two stages:

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At this time, we wish to confirm your interest in the EA, including an indication of whether you would like to receive a copy of the updated draft Terms of Reference for review.

**To confirm your interest please:**

Contact us at:

James R. Hollingsworth, P.Eng.  
Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
Tel: 905-420-5777  
Fax: 905-420-5247

Or, complete the attached form and return it by **August 28, 2013** to confirm your interest.

If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

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<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Aamjiwnaang First Nation:

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  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Mr. Wilson Plain, Jr.  
Aamjiwnaang First Nation  
Aamjiwnaang Administration Office  
978 Tashmoo Avenue  
Sarnia ON N7T 7H5

Dear Mr. Plain, Jr.:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Town of St. Marys to complete an Environmental Assessment which will consider options to address the Town's residential, commercial and industrial waste disposal needs for the next 40 years.

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**To confirm your interest please:**

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James R. Hollingsworth, P.Eng.  
Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
Tel: 905-420-5777  
Fax: 905-420-5247

Or, complete the attached form and return it by **August 28, 2013** to confirm your interest.

If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)





**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

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<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
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<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Aamjiwnaang First Nation:

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- Has an interest in this project and,
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  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Chief Thomas Bressette  
Chippewas of Kettle and Stony Point First Nation  
RR #2, 6247 Indian Lane  
Forest ON N0N 1J0

Dear Chief Bressette:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Town of St. Marys to complete an Environmental Assessment which will consider options to address the Town's residential, commercial and industrial waste disposal needs for the next 40 years.

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**To confirm your interest please:**

Contact us at:

James R. Hollingsworth, P.Eng.  
Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
Tel: 905-420-5777  
Fax: 905-420-5247

Or, complete the attached form and return it by **August 28, 2013** to confirm your interest.

If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

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<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Chippewas of Kettle and Stony Point First Nation:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
  - Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Chief Bryan LaForme  
Mississaugas of the New Credit First Nation  
2789 Mississauga Road  
Hagersville ON N0A 1H0

Dear Chief LaForme:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Town of St. Marys to complete an Environmental Assessment which will consider options to address the Town's residential, commercial and industrial waste disposal needs for the next 40 years.

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**To confirm your interest please:**

Contact us at:

James R. Hollingsworth, P.Eng.  
Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
Tel: 905-420-5777  
Fax: 905-420-5247

Or, complete the attached form and return it by **August 28, 2013** to confirm your interest.

If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

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## Confirmation of Interest

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<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Mississaugas of the New Credit First Nation:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Chief Louise Hillier  
Caldwell First Nation  
P.O. Box 388  
Lemington ON N8H 3W3

Dear Chief Hillier:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Town of St. Marys to complete an Environmental Assessment which will consider options to address the Town's residential, commercial and industrial waste disposal needs for the next 40 years.

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Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
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Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

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## Confirmation of Interest

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<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
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<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Caldwell First Nation:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
  - Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

August 15, 2013

**Via: Mail**

Chief William K. Mountour  
Six Nations of the Grand River  
P.O. Box 5000  
Ohsweken ON N0A 1M0

Dear Chief Mountour:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

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Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

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## Confirmation of Interest

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<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Six Nations of the Grand River:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Ms. Hazel Hill  
Haudenosaunee Development Institute  
Interim Director  
Six Nations of the Grand River Territory  
16 Sunrise Court  
Suite 407, PO Box 714  
Ohsweken ON N0A 1M0

Dear Ms. Hill:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

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Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

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<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Haudenosaunee Development Institute:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date





August 15, 2013

**Via: Mail**

Chief Allen MacNaughton  
Haudenosaunee Confederacy Chiefs Council  
P.O Box 714  
Ohsweken ON N0A 1M0

Dear Chief MacNaughton:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

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Fax: 905-420-5247

Or, complete the attached form and return it by **August 28, 2013** to confirm your interest.

If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

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## Confirmation of Interest

---

<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Haudenosaunee Confederacy Chiefs Council:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



August 15, 2013

**Via: Mail**

Mr. Andrew Good  
Windsor Essex Metis Council  
President  
4745 Huron Church Line  
Windsor ON N9H 1H5

Dear Mr. Good:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Town of St. Marys to complete an Environmental Assessment which will consider options to address the Town's residential, commercial and industrial waste disposal needs for the next 40 years.

The Environmental Assessment ("EA") will be conducted as an Individual EA under Ontario's *Environmental Assessment Act*. It will, therefore, be conducted in two stages:

- Stage 1: Preparation of the Terms of Reference which outlines how the EA will be carried out; and,
- Stage 2: The EA which will assess various options to address the Town's waste disposal needs.

The Terms of Reference (TOR) were initiated by a consulting company called Conestoga Rovers & Associates Ltd. (CRA) prior to Burnside's involvement. CRA began work in 2006 and continued to work on the TOR until March 2013. You likely received correspondence from them throughout that period, including a copy of the draft TOR prepared by CRA in 2010.

Burnside is now completing the TOR and will continue to be the project contact throughout the remainder of the EA. We are now in the process of updating the TOR to meet provincial guidelines. Some changes from the previous version are as follows:

- The previous version indicated that the EA would only assess various design options to expand the existing landfill.
- The updated version will also include an assessment of options to transport the Town's waste to an approved waste disposal facility outside the Town's boundaries.

If this option is selected, the existing landfill would likely be closed upon reaching approved capacity. A waste transfer station may be required.

- The updated version includes additional details with respect to the reasons why thermal treatment (waste-to-energy) or a new landfill sited within the Town are not feasible and will not be considered in the EA.

At this time, we wish to confirm your interest in the EA, including an indication of whether you would like to receive a copy of the updated draft Terms of Reference for review.

**To confirm your interest please:**

Contact us at:

James R. Hollingsworth, P.Eng.  
Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
Tel: 905-420-5777  
Fax: 905-420-5247

Or, complete the attached form and return it by **August 28, 2013** to confirm your interest.

If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

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## Confirmation of Interest

---

<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Windsor Essex Metis Council:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
  - Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

August 15, 2013

**Via: Mail**

Mr. Gary Lipinski  
Metis Nation of Ontario  
500 Old St. Patrick St., Unit 3  
Ottawa ON K1N 9G4

Dear Mr. Lipinski:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Town of St. Marys to complete an Environmental Assessment which will consider options to address the Town's residential, commercial and industrial waste disposal needs for the next 40 years.

The Environmental Assessment ("EA") will be conducted as an Individual EA under Ontario's *Environmental Assessment Act*. It will, therefore, be conducted in two stages:

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- The updated version includes additional details with respect to the reasons why thermal treatment (waste-to-energy) or a new landfill sited within the Town are not feasible and will not be considered in the EA.

At this time, we wish to confirm your interest in the EA, including an indication of whether you would like to receive a copy of the updated draft Terms of Reference for review.

**To confirm your interest please:**

Contact us at:

James R. Hollingsworth, P.Eng.  
Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
Tel: 905-420-5777  
Fax: 905-420-5247

Or, complete the attached form and return it by **August 28, 2013** to confirm your interest.

If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)





**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Confirmation of Interest

---

<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Metis Nation of Ontario:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

August 15, 2013

**Via: Mail**

Deputy Grand Chief Denise Stonefish  
Association of Iroquois and Allied Indians  
387 Princess Avenue  
London ON N6B 2A7

Dear Deputy Grand Chief Stonefish:

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment  
Updated Terms of Reference  
File No.: 300032339.0000**

R.J. Burnside & Associates Limited (Burnside) has been retained by the Town of St. Marys to complete an Environmental Assessment which will consider options to address the Town's residential, commercial and industrial waste disposal needs for the next 40 years.

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- The updated version includes additional details with respect to the reasons why thermal treatment (waste-to-energy) or a new landfill sited within the Town are not feasible and will not be considered in the EA.

At this time, we wish to confirm your interest in the EA, including an indication of whether you would like to receive a copy of the updated draft Terms of Reference for review.

**To confirm your interest please:**

Contact us at:

James R. Hollingsworth, P.Eng.  
Email: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
Tel: 905-420-5777  
Fax: 905-420-5247

Or, complete the attached form and return it by **August 28, 2013** to confirm your interest.

If you have any questions about this Environmental Assessment, please contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:jw

Enc. Confirmation of Interest Form

c: Dave Blake, Town of St. Marys, Environmental Coordinator (via email)



**BURNSIDE**

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## Confirmation of Interest

---

<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Association of Iroquois and Allied Indians:

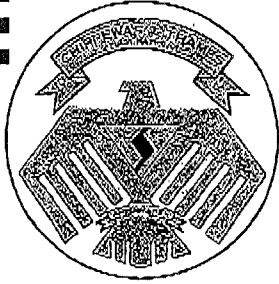
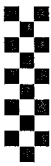
- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



# CHIPPEWAS OF THE THAMES FIRST NATION

DATE: Aug 22/13

PAGES SENT: 2

**SENT TO:**

NAME: James R. Hollingsworth, P.Eng, Tech Leader, Solid Waste

BUSINESS: R.S. Burnside + Associates Limited.

FAX: (905) 420-5247

PHONE:

**SENDER:**

NAME: Fallon Burch, Consultation Coordinator.

**COMMENTS:**

Confirmation of Interest.

**Private and Confidential**

This facsimile is privileged and may contain information intended only for the person named above. Any other distribution, copying or disclosure is strictly prohibited. If you have received this facsimile in error, please notify us immediately by telephone and return the original transmission to us by mail without making a copy.



# BURNSIDE

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RECEIVED AUG 19 2013

## Confirmation of Interest

<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Chippewas of the Thames First Nation:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
  - Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments: Chippewa would like to be kept up to date with this project. It does fall within our Traditional Territory.

Fallon Burch  
Name

*Fallon Burch*  
Signature

Aug 22/13.  
Date



**AAMJIWNAANG FIRST NATION  
CHIPPEWAS OF SARNIA  
Band Council**

978 TASHMOO AVENUE  
SARNIA, ONTARIO  
N7T 7H5  
Phone: (519) 336-8410  
Fax: (519) 336-0382

August 23, 2013

File # 2013-0005

R.J. Burnside and Associates Limited  
1465 Pickering Parkway  
Suite 200  
Pickering, Ontario  
L1V 7G7

Attention: James R. Hollingsworth

**Re: Town of St. Marys Landfill Capacity Expansion Environmental Assessment**

Dear Mr. Hollingsworth:

Thank you for the information regarding this project dated August 15, 2013. Our staff has recorded this information in our log.

Aamjiwnaang First Nation is interested in the above mentioned assessment regarding the proposed landfill expansion. We have received previous correspondence regarding the project and wish to continue to receive information in order that our Environment Committee has the opportunity to review materials for possible recommendation to Aamjiwnaang First Nation's Council.

The confirmation of interest form attached to your letter is being returned with this letter.

Aamjiwnaang First Nation continues to assert and exercise our Aboriginal Rights and Title to all parts of our Reserve and Traditional Territory in regards to lands and resource issues.

Sincerely,

FOR / Sharilyn Johnston  
Environmental Coordinator  
Aamjiwnaang First Nation

*"Saving our Home and Native Land"*



# BURNSIDE

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## Confirmation of Interest

<b>Project:</b>	St. Marys Landfill Capacity Individual Environmental Assessment
<b>File No.:</b>	300032339.0000
<b>Return by <u>August 28, 2013</u> to:</b>	
<b>Fax:</b>	(905) 420-5247
<b>Email:</b>	jamie.hollingsworth@rjburnside.com
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste

This is to confirm that the Aamjiwnaang First Nation:

- Has no interest or concerns with respect to this project and does not need to be included in future correspondence.
- Has an interest in this project and,
- Would like to remain on the project mailing list.
  - Would like to receive a copy of the updated Terms of Reference.

Comments:

WILSON ALAIN JR.

Name

[Handwritten Signature]

Signature

AUG 23/13

Date

ENVIRONMENT CONSULTATION WORKER





**Town of St. Marys EA for Future Solid Waste Disposal**

**Tricia Radburn** to: sue.bressette

Cc: Jamie Hollingsworth

08/26/2013 01:03 PM

Sue,

Further to our conversation this morning, I have attached a copy of the letter which we sent to the Chief a couple of weeks ago. Please forward us a copy of your new consultation protocol and let us know of any particular interest your community may have in project. Please let us know if you would like to remain on our mailing list and would like to receive a copy of the draft Terms of Reference for the Environmental Assessment.

Kind Regards,



Tricia Radburn, M.Sc.(PI), MCIP, RPP  
Environmental Planner

RJ Burnside & Associates Limited  
292 Speedvale Ave. W, Guelph, ON N1H 1C4  
tricia.radburn@rjburnside.com  
tel: (519) 823-4995 ext. 479  
fax: (519) 836-5477  
www.rjburnside.com



copy032339\_ FN Letter re Updated TOR Kettle Stoney Pt.pdf



copy032339\_ FN Confirmation of Interest Form Kettle Stony Pt.pdf



**Fw: St. Marys - Solid Waste Environmental Assessment**

**Jamie Hollingsworth** to: Dave Blake  
Cc: Tricia Radburn, Ashley Gallagher

09/25/2013 12:10 PM

F.Y.I.

----- Forwarded by Jamie Hollingsworth/RJB on 09/25/2013 12:10 PM -----

From: "Carrie Ann Peters" <health@caldwellfirstnation.com>  
To: "Jamie Hollingsworth" <Jamie.Hollingsworth@rjburnside.com>,  
Date: 09/25/2013 12:09 PM  
Subject: RE: FW: St. Marys - Solid Waste Environmental Assessment

---

Thanks Jamie,

That sounds great!

Take care,

**CarrieAnn Peters**  
Community Wellness Worker  
Caldwell First Nation  
519-322-1766

**From:** Jamie Hollingsworth [mailto:Jamie.Hollingsworth@rjburnside.com]  
**Sent:** Monday, September 23, 2013 10:41 AM  
**To:** Carrie Ann Peters  
**Cc:** Dave Blake  
**Subject:** Re: FW: St. Marys - Solid Waste Environmental Assessment

Carrie Ann;

I have just returned from vacation and I am attempting to get through a number of emails... I have yet to get an updated status on the draft ToR for St. Marys from my colleagues, but I've not read all of my emails either.

Before I left for vacation, I had been contacted by the MOE reviewer who had noted a few items in the draft ToR that needed additional detail. Several of the MOE comments dealt with typos while the rest were focused on being clear on how the process has and will proceed through to the EA. In an overall sense though, there are no changes to the draft ToR since we discussed it in August 2013.

My colleagues were to have taken care of the MOE comments in my absence, revising the ToR as necessary. I plan to review the revised draft ToR this week and will be passing it along to the Town of St. Marys for their comment/review. Once the Town has had an opportunity to provide their comments, and

Burnside has made appropriate revisions, I will be happy to send you a copy of the draft ToR by email.

I trust the above is satisfactory. Please feel free to contact me, by email or telephone, should you have any further questions.

Take Care,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

\*\*\*\* CONFIDENTIALITY NOTICE \*\*\*\*

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If you have received this communication in error please notify the sender at the above email address and delete this email immediately.

Thank you.

\*\*\*\*\*

From: "Carrie Ann Peters" <[health@caldwellfirstnation.com](mailto:health@caldwellfirstnation.com)>  
To: "Jamie Hollingsworth" <[Jamie.Hollingsworth@rjburnside.com](mailto:Jamie.Hollingsworth@rjburnside.com)>,  
Date: 09/16/2013 09:00 AM  
Subject: FW: St. Marys - Solid Waste Environmental Assessment

---

*Good Morning Jamie,*

I am just doing a follow up to this meeting.

Wondering if anything new has come up or if any changes have been made?  
Will we be receiving ToR or EA soon?

Thank you,

**CarrieAnn Peters**

Community Wellness Worker

Caldwell First Nation

519-322-1766

> From: Jamie Hollingsworth [<mailto:Jamie.Hollingsworth@rjburnside.com>]

> Sent: Wednesday, August 14, 2013 3:38 PM

> To: [health@caldwellfirstnation.com](mailto:health@caldwellfirstnation.com)

> Cc: Dave Blake

> Subject: St. Marys - Solid Waste Environmental Assessment

>

> Attention: CarrieAnn Peters, Caldwell First Nation

>

> Ms. Peters,

>

> R.J. Burnside & Associates Limited has been retained by the Town of St. Marys to assist with completing their Environmental Assessment (EA) to determine the best method of addressing their solid waste disposal requirements. Burnside has assumed this role from the Town's previous consultant.

>

> Burnside, by reviewing comments received on the draft Terms of Reference (ToR), has found that your community requested a meeting to discuss the Town's proposal to expand their existing landfill site. In addition, other First Nations have expressed a similar desire to meet. The Town of St. Marys would therefore like to arrange a meeting for First Nations that have expressed an interest to meet at the Town's Landfill Site. We would discuss both current operations at the site and the proposed scope of the EA as described in the draft ToR. We are proposing to hold the meeting on Thursday, August 22, 2013 at 10:30 am. Please RSVP with the name of the attendee from your community - an email or a phone call will suffice. Please advise the attendee to bring their safety boots, hard hat and safety vest. There is ongoing construction occurring at the site so this safety equipment is required.

>

> The Town remains committed to ensuring that the EA consultation program includes meetings or discussions with aboriginal communities. This will continue throughout the EA process.

>

> Best regards,

> Jamie

>  
>  
> James R. Hollingsworth, P.Eng.  
> Technical Leader, Solid Waste  
>  
> R.J. Burnside & Associates Limited  
> 1465 Pickering Parkway, Suite 200  
> Pickering, Ontario L1V 7G7  
> [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com) <<mailto:jamie.hollingsworth@rjburnside.com>>  
> tel: 905.420.5777 ext. 803  
> fax: 905.420.5247  
> [www.rjburnside.com](http://www.rjburnside.com)  
>

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> If you have received this communication in error please notify the sender at the above email address and delete this email immediately.

> Thank you.

> \*\*\*\*\*

300032339



**St. Marys - Solid Waste Environmental Assessment**

**Jamie Hollingsworth** to: health

Cc: "Dave Blake"

08/14/2013 03:37 PM

Attention: CarrieAnn Peters, Caldwell First Nation

Ms. Peters,

R.J. Burnside & Associates Limited has been retained by the Town of St. Marys to assist with completing their Environmental Assessment (EA) to determine the best method of addressing their solid waste disposal requirements. Burnside has assumed this role from the Town's previous consultant.

Burnside, by reviewing comments received on the draft Terms of Reference (ToR), has found that your community requested a meeting to discuss the Town's proposal to expand their existing landfill site. In addition, other First Nations have expressed a similar desire to meet. The Town of St. Marys would therefore like to arrange a meeting for First Nations that have expressed an interest to meet at the Town's Landfill Site. We would discuss both current operations at the site and the proposed scope of the EA as described in the draft ToR. We are proposing to hold the meeting on Thursday, August 22, 2013 at 10:30 am. Please RSVP with the name of the attendee from your community - an email or a phone call will suffice. Please advise the attendee to bring their safety boots, hard hat and safety vest. There is ongoing construction occurring at the site so this safety equipment is required.

The Town remains committed to ensuring that the EA consultation program includes meetings or discussions with aboriginal communities. This will continue throughout the EA process.

Best regards,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

300032339



Jamie Hollingsworth /RJB  
08/14/2013 03:35 PM

To: jared.macbeth@wfn.org,  
cc: "Dave Blake" <dblake@town.stmarys.on.ca>  
Subject: St. Marys - Solid Waste Environmental Assessment

Attention: Mr. Jared MacBeth, Walpole Island First Nation

Mr. MacBeth,

R.J. Burnside & Associates Limited has been retained by the Town of St. Marys to assist with completing their Environmental Assessment (EA) to determine the best method of addressing their solid waste disposal requirements. Burnside has assumed this role from the Town's previous consultant.

Burnside, by reviewing comments received on the draft Terms of Reference (ToR), has found that your community requested a meeting to discuss the Town's proposal to expand their existing landfill site. In addition, other First Nations have expressed a similar desire to meet. The Town of St. Marys would therefore like to arrange a meeting for First Nations that have expressed an interest to meet at the Town's Landfill Site. We would discuss both current operations at the site and the proposed scope of the EA as described in the draft ToR. We are proposing to hold the meeting on Thursday, August 22, 2013 at 10:30 am. Please RSVP with the name of the attendee from your community - an email or a phone call will suffice. Please advise the attendee to bring their safety boots, hard hat and safety vest. There is ongoing construction occurring at the site so this safety equipment is required.

The Town remains committed to ensuring that the EA consultation program includes meetings or discussions with aboriginal communities. This will continue throughout the EA process.

Best regards,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



**St. Marys - Solid Waste Environmental Assessment**

**Jamie Hollingsworth** to: jthomas

Cc: "Dave Blake"

08/14/2013 03:36 PM

Attention: Joanne Thomas, Consultation Point Person, Six Nations Land and Resources

Ms. Thomas,

R.J. Burnside & Associates Limited has been retained by the Town of St. Marys to assist with completing their Environmental Assessment (EA) to determine the best method of addressing their solid waste disposal requirements. Burnside has assumed this role from the Town's previous consultant.

Burnside, by reviewing comments received on the draft Terms of Reference (ToR), has found that your community requested a meeting to discuss the Town's proposal to expand their existing landfill site. In addition, other First Nations have expressed a similar desire to meet. The Town of St. Marys would therefore like to arrange a meeting for First Nations that have expressed an interest to meet at the Town's Landfill Site. We would discuss both current operations at the site and the proposed scope of the EA as described in the draft ToR. We are proposing to hold the meeting on Thursday, August 22, 2013 at 10:30 am. Please RSVP with the name of the attendee from your community - an email or a phone call will suffice. Please advise the attendee to bring their safety boots, hard hat and safety vest. There is ongoing construction occurring at the site so this safety equipment is required.

The Town remains committed to ensuring that the EA consultation program includes meetings or discussions with aboriginal communities. This will continue throughout the EA process.

Best regards,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)





**Attachment E3d  
TOR Submitted for Review and  
Comments**

FN



November 14, 2013

Via: Courier

Chief Chris Plain  
Aamjwnaang First Nation (Formerly Chippewas of Sarnia) FN  
Aamjwnaang Administration Office  
978 Teshmoo Avenue  
Sarnia ON N7T 7H5

Dear Chief Plain:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity.
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
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We are enclosing with this letter a hard copy of the TOR. In the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website if additional copies are required.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Baska, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 938  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0802  
Email: [dabaska@town.stmarys.on.ca](mailto:dabaska@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
Phone: 905-420-5777 Ext. 603  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

082339 TOR Availability - FN.docx  
14/11/2013 2:44 PM

### Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	<a href="mailto:jenia.hollingsworth@rjburnside.com">jenia.hollingsworth@rjburnside.com</a>

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

082339 TOR Request Form.docx 10/15/2013 10:37 AM



November 14, 2013

Via: Courier

Ms. Sharilyn Johnston  
Aanjiwaaang First Nation (Formerly Chippewas of Sarnia FN)  
Aanjiwaaang Administration Office  
978 Taahmoo Avenue  
Sarnia ON N7T 7H5

Dear Ms. Johnston:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

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Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4K 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0302  
Email: dblake@town.stmarys.on.ca

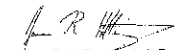
Jamie Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6K5  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

**R.J. Burnside & Associates Limited**



Jamie R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

023339 TOR Availability - FN.docx  
14/11/2013 2:44 PM

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Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

023339 TOR Request Form.docx 13/11/2013 10:02 AM



November 14, 2013

Via: Courier

Mr. Wilson Plain Jr.  
 Aamjiwnaang First Nation (Formerly Chippewas of Sarnia FN)  
 Aamjiwnaang Administration Office  
 978 Tashmooc Avenue  
 Sarnia ON N7T 7H5

Dear Mr. Plain Jr.:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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Dave Blake, C.E.T. The Corporation of the Town of St. Marys 408 James Street South, P.O. Box 998 St. Marys, ON N4X 1B6 Phone: 519-284-2340 Ext. 209 Fax: 519-284-0902 Email: dblake@town.stmarys.on.ca	James Hollingsworth R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1S 6H3 Phone: 905-420-5777 Ext. 803 Fax: 905-420-5247 Email: St.Marys.Waste.EA@RJBurnside.com
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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



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Fax:	(905) 420-5247
Mall:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



### Tracking Details

Shipment Status

Package Tracking Number: 33010361079 [View proof of delivery and signature](#)

**Delivered**  
 Friday, November 15, 2013 12:35 p.m.  
 Received By: Chris

Service	Purolator Service Division	From To	Pickup City, ON, CA
Del. Shipment Weight	85 gm net. 85 gm	Nov 14, 2013	Sarnia, ON, CA

History

Date	Local Time	Location	Description
Nov 15, 2013	12:35 p.m.	Sarnia, ON	At terminal delivered to CMRA at RECEPTION
Nov 15, 2013	10:29 a.m.	Sarnia, ON	On vehicle for delivery
Nov 14, 2013	11:00 p.m.	Toronto East Centre T1, ON	Arrived at sort facility
Nov 14, 2013	4:33 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 14, 2013	3:35 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking # 33010361079  
 Delivered By 65005  
 33010361079 Nov 14, 2013  
 Package 1 of 1

\*NOTE: This Tracking Detail is for the following:  
 Chief Chris Plain - Aamjiwnaang First Nation  
 Ms. Sharilyn Johnston - Aamjiwnaang First Nation  
 Mr. Wilson Plain Jr. - Aamjiwnaang First Nation



November 14, 2013

Via: Mail

Chief Louise Hillier  
 Caldwell First Nation  
 P.O. Box 368  
 Leamington ON N8H 3W3

Dear Chief Hillier:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment**  
 File No.: 300032339.0000

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Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 405 James Street South, P.O. Box 988  
 St. Marys, ON N4X 1B6  
 Phone: 519-264-2340 Ext. 209  
 Fax: 519-264-0902  
 Email: dblake@town.stmarys.on.ca

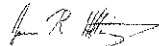
James Hollingsworth  
 R.J. Burnside & Associates Limited  
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Yours truly,

R.J. Burnside & Associates Limited



James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Available - FTL.docx  
 14/11/2013 2:44 PM

## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

032339 TOR Request Form.docx 18/11/2013 10:02 AM



November 14, 2013

Via: Mail

Ms. Carrie Anne Peters  
 Caldwell First Nation  
 P.O. Box 388  
 Leamington ON N8H 3W3

Dear Ms. Peters:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 998  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: dtblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1V 5H3  
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 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Avail:Wly - FN.docx  
 14/11/2013 2:44 PM



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Project:	Town of St. Marys Future Solid Waste Disposal Needs <b>Proposed Terms of Reference for an Environmental Assessment</b>
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



*TOR Availability - FN*  
*Chief Louise Hillier*  
*Carrie Anne Peters*

Tracking Number RWG8999998CA					
Product Type: Lettarmail					
Track History					
Date	Time	Location	Description	Retail Location	Signatory Name
2013/11/20	06:52	CHATHAM	Item successfully delivered		
2013/11/20	06:52		Signature image received for Online viewing		BARB J
2013/11/20	08:50	CHATHAM	Out for delivery		
2013/11/20	06:41	CHATHAM	Item processed at local delivery facility		
2013/11/20	00:11	LONDON	In transit		
2013/11/19	21:35	LONDON	Item processed		
2013/11/17	12:19	OSHAWA	Item accepted at the Post Office		
Shipping Options and Features for this Item Signature Required					



November 14, 2013

Via: Courier

Chiet Thomas Bresaola  
Chippewas of Kettle and Stony Point FN  
Kettle and Stony Point FN, 6247 Indian Lane  
RR62  
Forest ON N0N 1J0

Dear Chiet Bresaola:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 999  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@townofstmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 8H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Eleka, Environmental Coordinator Town/Town of St. Marys

002339 TOR Availability - FN.docx  
14/11/2013 2:44 PM

## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jemie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

002339 TOR Request Form.docx 15/11/2013 10:02 AM



November 14, 2013

Via: Courier

Ms. Suzanne Bressette  
 Communications Relations Officer  
 Chippewas of Kettle and Stony Point FN  
 Kettle and Stony Point FN, 6247 Indian Lane  
 RR#2  
 Forest ON N0N 1J0

Dear Ms. Bressette:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 938  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
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 Email: dblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1485 Pickering Parkway, Suite 200  
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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



### Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1485 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



#### Tracking Details

Shipment Status

Package Status: **Delivered**  
 Package Tracking Number: 300032339.0000 [View report of delivery and shipment](#)  
**Friday, November 15, 2013 4:05 p.m.**  
 Received by: Burnside

Ship to	Purolator Express	From	Pickering, ON, CA
Est. Shipment Weight	Envelope	To	Forest, ON, CA
Shipment Date	Nov 14, 2013		

History

Date	Local Time	Location	Description
Nov 15, 2013	4:05 p.m.	Burnside, ON	Shipment delivered to BRESSETTE, M
			RECEPTION
Nov 15, 2013	10:26 a.m.	Burnside, ON	On way link for railway
Nov 14, 2013	6:11 p.m.	Township East Chester, ON	Arrived at local facility
Nov 14, 2013	4:58 p.m.	Pickering, ON	Prepared for Purolator via PHS/SH/MS/ON
Nov 14, 2013	4:32 p.m.	Purolator	Shipping label created

\*NOTE: This Tracking Detail is for the following people:  
 Chief Thomas Bressette - Chippewas of Kettle and Stony Point FN  
 Ms. Suzanne Bressette - Chippewas of Kettle and Stony Point FN





November 14, 2013

Via: Courier

Chief Robert, Joe' Miskokomon  
 Chippewas of the Thames First Nation  
 320 Chippewa Road  
 RR#1  
 Muncey ON N0L 1Y0

Dear Chief Miskokomon:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 406 James Street South, P.O. Box 998  
 St. Marys, ON N4X 1B6  
 Phone: 519-204-2340 Ext. 209  
 Fax: 519-204-0902  
 Email: ddblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1485 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mall:	R.J. Burnside & Associates Limited 1485 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jenie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



### Tracking Details

Shipment Status

Package Tracking Number: 330016109451 Delivered Friday, November 15, 2013 10:39 a.m. Received by: Jaclyn	Shipment Summary Tracking # Deliver By Status 330016109451 Nov 15, 2013 Delivered Package 1 of 1		
Send to: Puslator Express E-mail: _____ Ship Date: Nov 14, 2013	From: Pickering, ON, CA To: Muncey, ON, CA		
History			
Date	Local Time	Location	Description
Nov 15, 2013	12:30 p.m.	Lorain ON	Signature delivered to JACLYN at AT DOOR
Nov 15, 2013	8:15 a.m.	Lorain ON	On vehicle for delivery
Nov 14, 2013	4:03 p.m.	Pickering ON	Loaded up by Purolator at PICKERING ON
Nov 14, 2013	4:52 p.m.	Puslator	Shipping label created

\*NOTE: Chief Robert, Joe' Miskokomon



November 14, 2013

Via: Courier

Ms. Rolanda Elijah  
Director of Lands and Environment Department  
Chippewas of the Thames First Nation  
4 Anishnabeg Drive  
Muncey ON N0L 1Y0

Dear Ms. Elijah:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

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environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Bleke, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B5  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dbleke@town.stmarys.on.ca

Jamee Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wight, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamee.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

032339 TOR Request Form.docx 18/11/2013 10:02 AM



November 14, 2013

Via: Courier

Ms. Fallon Burch  
 Consultation Coordinator  
 Chippewas of the Thames First Nation  
 320 Chippewa Road  
 RR#1  
 Muncey ON N0L 1Y0

Dear Ms. Burch:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamle.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



### Tracking Details

Shipment Status

**Package Status**  
 Package Tracking Number: 330016111980 [View report of delivery confirmation](#)

**Delivered**  
 Friday, November 15, 2013 9:24 a.m.  
 Received By: D Henry

Service	Package Express Envelope	From	Pickering, ON, CA
Est. Subsequent Weight	1 lb.	To	Murray, ON, CA
Shipments Date	Nov 14, 2013		

**History**

Date	Local Time	Location	Description
Nov 16, 2013	9:24 a.m.	Ltd. del., ON	Shipment delivered to C-ENTRY at RECEPTION
Nov 15, 2013	8:16 a.m.	London, ON	On vehicle for delivery
Nov 14, 2013	3:01 p.m.	Toronto East Outer Flt, ON	Arrived at main facility
Nov 14, 2013	4:55 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 14, 2013	4:30 p.m.	Pickering	Shipping label created

\*NOTE: Ms. Rolanda Elijah and Ms. Fallon Burch



November 14, 2013

Via: Courier

Chief Greg Peters  
Delaware Nation (Moravijan of the Thames)  
14760 School House Line  
RR# 9  
Thamesville ON N0P 2K0

Dear Chief Peters:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

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James Hollingsworth  
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1455 Pickering Parkway, Suite 200  
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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

082339 TOR Availability - FN.docx  
14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1455 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

082339 TOR Request Form.docx 14/11/2013 10:02 AM



November 14, 2013

Via: Courier

Ms. Tina Jacobs  
Lands and Resources Consultation Manager  
Delaware Nation (Moravian of the Thames)  
14760 School House Line  
RR# 3  
Thamesville ON N0P 2K0

Dear Ms. Jacobs:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in this EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity;
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities; and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's website, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the *Town Services, Garbage and Recycling* page.

We are enclosing with this letter a DVD-R that contains a searchable PDF copy of the ToR. Should your community require a paper copy for your review, please use the attached tax-back form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the

environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 366  
St. Marys, ON N4X 1B8  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblade@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, ON L1S 8H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft ToR. This will include a table summarizing all comments received and a response to each comment raised, including how the ToR was modified to address the comment. The amended draft ToR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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

Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mall:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	james.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

032339 TOR Request Form.docx 10/11/2013 10:02 AM



November 14, 2013

Via: Courier

Mr. Justin Logan  
 Lands and Resources Consultation Assistant  
 Delaware Nation (Moravian of the Thames)  
 14760 School House Lane  
 RR# 3  
 Thamesville ON N0P 2K0

Please submit any comments you may have on the revised TOR, by mail, fax, email or telephone to:  
 Dave Blake, C.E.T.  
 The Coordinator of the Town of St. Marys  
 406 James Street South, P.O. Box 998  
 St. Marys, ON N4X 1B5  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: dblake@town.stmarys.on.ca  
 James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 9H3  
 Phone: 905-420-5277 Ext. 803  
 Fax: 905-420-5247  
 Email: St.Marys.Waste.EA@RJBurnside.com

Dear Mr. Logan:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000

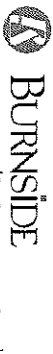
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- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

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We are enclosing with this letter a hard copy of the TOR. In the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website if additional copies are required.

R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering, ON L1V7G7 Canada  
 Telephone: (905) 420-5277 fax: (905) 420-5247 web: www.rjburnside.com



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs
File No.:	300032339.0000
Return by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P. Eng., Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering, ON L1V7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

052359 TOR Request Form.docx 18/11/2013 10:02 AM

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the TOR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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

Yours truly,  
 R.J. Burnside & Associates Limited

James R. Hollingsworth, P. Eng.  
 Technical Leader, Solid Waste

Wesley Whight, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator, Town, Town of St. Marys

023299 TOR Amended - FR.docx  
 14/11/2013 2:44 PM



### Tracking Details

<b>Package Status</b> Delivered Friday, November 15, 2013 1:58 pm		<b>Mailbox Address/Location</b> 1465 Pickering Parkway, Suite 200 Pickering, Ontario	
<b>Sender</b> EA Support/Report Request Date: Nov 14, 2013	<b>Recipient</b> James R. Hollingsworth Nov 14, 2013	<b>From</b> Purveyor	<b>To</b> Purveyor
<b>Weight</b> 10w 16, 2013 504 gms	<b>Local Post</b> 10w 16, 2013 504 gms	<b>Origin</b> 10w 16, 2013 504 gms	<b>Destination</b> 10w 16, 2013 504 gms
<b>Postmark</b> Nov 14, 2013 6:17 pm	<b>Postage</b> 423 pm	<b>Postage</b> 423 pm	<b>Postage</b> 423 pm
<b>Postage</b> Nov 14, 2013 4:57 pm	<b>Postage</b> 423 pm	<b>Postage</b> 423 pm	<b>Postage</b> 423 pm

**Shipment Summary**

Tracking # 300032339.0000  
 Status Delivered  
 Date 11/15/13 1:58 PM

NOTE: Tracking Details for the following:  
 Chief Greg Peters  
 Mrs. Tina Jacobs  
 Mr. Justin Logan



November 14, 2013

Via: Courier

Mrs. Hazel Hill  
 Indian Director, Six Nations of the Grand River Territory  
 Indian Resource Development Institute  
 16 Simcoe Court  
 Suite 407, PO Box 714  
 Orillia/Orillia ON N0A 1M0

Dear Ms. Hill:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300052338.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (TOR) for an Individual Environmental Assessment (EA) for the identification and selection of a potential Solid Waste Disposal Option for the Town. Under the EA Act, the first step in the EA process is the preparation of a TOR. Draft TOR was previously issued for public comment and the Town has been working closely with you to address the input received. Further consultation and by making modifications to the TOR, the revised TOR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity,
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

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We are enclosing with this letter a DVD-R that contains a searchable PDF copy of the TOR. Should your community require a paper copy for your review, please use the attached fax-back form. Alternatively, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of time

R.J. Burnside & Associates Limited 1465 Pickering Parkway Suite 200 Pickering ON L1V7G7 Canada  
 Telephone: (905) 420-5777 Fax: (905) 420-5247 Web: www.rjburnside.com



## Terms of Reference Hard Copy Request Form

<b>Project:</b>	Town of St. Marys Future Solid Waste Disposal Needs
<b>Proposed Terms of Reference for an Environmental Assessment</b>	
<b>Title No.:</b>	300052338.0000
<b>Return by November 30, 2013 to:</b>	
<b>Attention:</b>	James R. Hollingsworth, P.Eng., Technical Leader, Solid Waste
<b>Fax:</b>	(905) 420 5247
<b>Mail:</b>	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
<b>Email:</b>	james.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

022338 TOR Request Form.docx 18/11/2013 10:02 AM

Ms. Hill  
 November 14, 2013

environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised TOR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 402 James Street South, P.O. Box 999  
 St. Marys ON N4X 1B8  
 Phone: 519-284-2340 Ext. 299  
 Fax: 519-284-0942  
 Email: d.blake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 9Y8  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
 Email: j.hollingsworth@rjburnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Minister of the Environment for review. Once approved by the Minister, the TOR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Minister and will become part of the EA record. Consultation programs will continue throughout the EA process.

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c. Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator, Town, of St. Marys

022338 TOR Availability - Pickdocx  
 14/11/2013 2:44 PM

## Alpivator

### Tracking Details

Shipping Status		Shipment Summary																															
Package Tracking Number: 3000118203		Tracking # Entered By: 3000118203 Received: Nov 15, 2013																															
<p><b>Delivered</b>                  Friday, November 15, 2013 1:18 p.m.                  Received by: local                  Service: Priority Express                  E-mail notification: No                  Signature: Yes                  Nov 14, 2013 4:01 p.m. received by: Hazel Hill</p>		<p>Sender of electronic message:                  From: RJBurnside@rjburnside.com                  To: Orillia, ON, CA                  Nov 14, 2013 4:01 p.m. received by: Hazel Hill</p>																															
<table border="1"> <thead> <tr> <th>History</th> <th>Date</th> <th>Local Time</th> <th>Location</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Nov 15, 2013 1:18 p.m.</td> <td></td> <td></td> <td>Mount Hope, ON</td> <td>Delivered</td> </tr> <tr> <td>Nov 15, 2013 12:52 p.m.</td> <td></td> <td></td> <td>Pickering, ON</td> <td>Out for Delivery</td> </tr> <tr> <td>Nov 15, 2013 8:43 a.m.</td> <td></td> <td></td> <td>Pickering, ON</td> <td>Arrived at Facility</td> </tr> <tr> <td>Nov 14, 2013 4:01 p.m.</td> <td></td> <td></td> <td>Pickering, ON</td> <td>Prepared for shipment at warehouse</td> </tr> <tr> <td>Nov 14, 2013 4:00 p.m.</td> <td></td> <td></td> <td></td> <td>Shipping label created</td> </tr> </tbody> </table>				History	Date	Local Time	Location	Description	Nov 15, 2013 1:18 p.m.			Mount Hope, ON	Delivered	Nov 15, 2013 12:52 p.m.			Pickering, ON	Out for Delivery	Nov 15, 2013 8:43 a.m.			Pickering, ON	Arrived at Facility	Nov 14, 2013 4:01 p.m.			Pickering, ON	Prepared for shipment at warehouse	Nov 14, 2013 4:00 p.m.				Shipping label created
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Nov 14, 2013 4:00 p.m.				Shipping label created																													

NOTE: Hazel Hill



November 14, 2013

Via: Courier

Ms. Margaret Salt  
Director of Lende, Resources and Management  
Mississauga of New Credit First Nation  
Consultation and Outreach Office, R.R. #6  
2789 Mississauga Road  
Hagersville ON N0A 1H0

Dear Ms. Salt:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

The Town of St. Marye (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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Ms. Salt  
November 14, 2013

Page: 2 of 60

environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Deve Blake, C.E.T.  
The Corporation of the Town of St. Marys  
426 James Street South, P.O. Box 598  
St. Marys, ON N4X 1B5  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marye

032339 TOR Available - FN.docx  
14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by:	November 30, 2013 to:
Attention:	Jamie R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associate Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

032339 TOR Request Form.docx 19/11/2013 10:02 AM





November 14, 2013

Via: Courier

Chief Bryan LaForme  
Mississaugas of the New Credit First Nation  
Consultation and Outreach Office, R.R. #6  
2789 Mississauga Road  
Hagersville ON N0A 1H0

Dear Chief LaForme:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

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Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
409 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: d Blake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wasley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamis.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

032339 TOR Request Form.docx 18/11/2013 10:02 AM



November 14, 2013

Via: Courier

Ms. Carolyn King  
 Geomatics Environmental Technician  
 Mississaugas of the New Credit First Nation  
 Consultation and Outreach Office, R.R. #9  
 2789 Mississauga Road  
 Hagersville ON N0A 1H0

Dear Ms. King:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's website, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the *Town Services, Garbage and Recycling* page.

We are enclosing with this letter a hard copy of the TOR. In the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website if additional copies are required.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 998  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: dblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
 Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



**Terms of Reference  
 Hard Copy Request Form**

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Address (2<sup>nd</sup> line): \_\_\_\_\_  
 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



Tracking Details

Shipment Status

Package Status	Package Tracking Number: 330914111 1033	View proof of delivery <a href="#">http://purolator.com</a>	Shipment Summary
Delivered	Friday, November 15, 2013 11:22 a.m.	Received By: Hottinger	Tracking # Deliver by Status 330914111 103 15 Nov 15, 2013 Delivered Package 1 of 1 of:
Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipments Weight	1 lb.		Hagersville, ON, CA
Shipments Date	Nov 14, 2013		
History			
Date	Local Time	Location	Description
Nov 15, 2013	11:22 a.m.	Mould Hagar, ON	Shipment delivered to HOTTINGER INC. RECEIPTION
Nov 15, 2013	8:14 a.m.	Mould Hagar, ON	On vehicle for delivery
Nov 14, 2013	3:11 a.m.	Toronto East Canada Trk, ON	Arrived at sort facility
Nov 14, 2013	4:19 p.m.	Pickering, ON	Picked Up by Purolator at PICKERING ON
Nov 14, 2013	3:52 p.m.	Pickering	Shipping label created

\*NOTE: Tracking Details for the following:  
 Ms. Margaret Salt  
 Chief Bryan LaForme  
 Ms. Carolyn King



November 14, 2013

Via: Courier

Chiel Roger Thomas  
 Mines-Delaware Fire Netion  
 RR#1  
 1289 Jubilee Road  
 Muncney ON N0L 1Y0

Dear Chiel Thomas:

Re: **Town of St. Marys Fntire Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 938  
 St. Marys, ON N4X 1B8  
 Phone: 519-284-2340 Ext. 208  
 Fax: 519-284-0802  
 Email: dblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H9  
 Phone: 905-420-5777 Ext. 603  
 Fax: 905-420-5247  
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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Fntire Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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Agency: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Address (2<sup>nd</sup> line): \_\_\_\_\_  
 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) - - Fax: ( ) - -  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_



November 14, 2013

Via: Courier

Mr. Dan Miskokoman  
 Band Manager  
 Munsee Delaware First Nation  
 Administration Office, RR#1  
 289 Jubilee Road  
 Muncey ON N0L 1Y0

Dear Mr. Miskokoman:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 998  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: dblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 18/11/2013 2:44 PM



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Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	<b>November 30, 2013 to:</b>
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mall:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



### Tracking Details

Shipment Status

Package Status	Package Tracking Number 30001815085	Order #001 of 66760, 032339.0000	Tracking #	Deliver By	Status
			03233913899	Nov 18, 2013	Delivered
			Packages 1 to 1 of 1		
Delivered	Friday, November 15, 2013 10:47 a.m.				
Received By:	Jevaher				
Service	Purolator Express	From	Pickering, ON, CA		
Est. Shipment Weight	1 lb.	To	St. Marys, ON, CA		
Shipment Date	Nov 14, 2013				
History					
Date	Local Time	Location	Description		
Nov 15, 2013	10:47 a.m.	London, ON	Shipment delivered to 29NHTER-02-RODIPRINT		
Nov 8, 2013	8:28 a.m.	London, ON	On Vehicle for delivery		
Nov 14, 2013	8:10 p.m.	Toronto City Centre, ON	Arrived at sort facility		
Nov 14, 2013	4:35 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON		
Nov 14, 2013	4:40 p.m.	Purolator	Shipping label created		

\*NOTE: Tracking Details for the following:  
 Chief Roger Thomas  
 Mr. Dan Miskokoman



November 14, 2013

Via: Courier

Chief Joel Abram  
 Oneida of the Thames First Nation  
 2212 Elm Avenue  
 Southwold ON N0L 2G0

Dear Chief Abram:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 968  
 St. Marys, ON N4X 1B5  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: ddblake@townofstmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
<b>Return by November 30, 2013 to:</b>	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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Agency: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Address (2<sup>nd</sup> line): \_\_\_\_\_  
 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



### Tracking Details

Shipment Status

<b>Package Status</b> Package Tracking Number: 350018141797 <a href="#">View proof of delivery and signature</a>		<b>Shipment Summary</b> Tracking # Delivered By Status 350018141797 Nov 15, 2013 Delivered Package 1 of 1	
<b>Delivered</b> Friday, November 15, 2013 10:10 a.m. Received by: Andrea			
Station Est. Shipment Weight Estimate Date	Purolator Express Envelope 7 lbs Nov 14, 2013	From To Pickering, ON, CA Southwold, ON, CA	
<b>History</b>			
Date	Local Time	Location	Description
Nov 15, 2013	10:10 a.m.	Toronto, ON	Shipment delivered to ANDREA at ALT ADRIA
Nov 15, 2013	8:25 a.m.	Lindsay, ON	On vehicle for delivery
Nov 14, 2013	8:14 p.m.	Toronto-South Ontario Toll, ON	Arrived at destination
Nov 14, 2013	4:25 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 14, 2013	4:22 p.m.	Purolator	Shipment label created

\*NOTE: Chief Joel Abram



November 14, 2013

Via: Mail

Chief William K. Montour  
 Six Nations of the Grand River  
 P.O. Box 5000  
 Oshweken ON NOA 1M0

Dear Chief Montour:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000

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Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 405 James Street South, P.O. Box 958  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0952  
 Email: dblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM

## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jenie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

032339 TOR Request Form.docx 18/11/2013 10:02 AM



November 14, 2013

Via: Courier

Ms. Caron Smith  
 Six Nations of the Grand River  
 2498 Chiefswood Road  
 Ohsweken ON N0A 1M0

Dear Ms. Smith:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

052339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by November 30, 2013 to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	james.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



### Tracking Details

Shipment Status

Package Status		View a list of other tracked shipments	
Package Tracking Number: 3300158783			
Delivered Friday, November 15, 2013 1:58 p.m. Received by: Terie			
Service	Purolator Emetipac	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Ohsweken, ON, CA
Shipweight	Nov 14, 2013		
History			
Date	Local Time	Location	Description
Nov 15, 2013	1:58 p.m.	Maum Hope, ON	Shipment delivered to TOWN OF PICKERING
Nov 15, 2013	9:16 a.m.	Maum Hope, ON	City website for delivery
Nov 15, 2013	5:15 a.m.	Maum Hope, ON	Arrived at sort facility
Nov 14, 2013	8:19 a.m.	Town of St. Marys, ON	Arrived at sort facility
Nov 14, 2013	4:50 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 14, 2013	4:32 p.m.	Purolator	Shipping label created

Shipment Summary			
Tracking #	Delivered By	Status	
3300158783	Nov 15, 2013	Delivered	
Package 1 of 1			

\*NOTE: Ms. Caron Smith



November 14, 2013

Via: Mail

Ms. Joanne Thomas  
 Consultation Point Person  
 Six Nations of the Grand River  
 P.O. Box 5000  
 Oshweken ON N0A 1M0

Dear Ms. Thomas:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an Individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 958  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: dblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
 Email: StMarys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

*J.R.H.*  
 James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 Dave Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



**Terms of Reference  
 Hard Copy Request Form**

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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 Address: \_\_\_\_\_  
 Address (2<sup>nd</sup> line): \_\_\_\_\_  
 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_



Availability - FN

*Chief William K. Montfort*  
*MS. Joanne Smith*  
*MS. Joanne Thomas*

Tracking Number 0075159001372952					
Product Type: Regular Parcels Expected Delivery: 2013/11/20					
Track History					
Date	Time	Location	Description	Retail Location	Signatory Name
2013/11/19	08:13	OSHEWEN	Item successfully delivered		Six Nations of the Grand River
2013/11/18	07:19	MISSISSAUGA	In transit		
2013/11/18	04:36	MISSISSAUGA	Item processed		
2013/11/18	04:35	MISSISSAUGA	Item processed		
2013/11/15	12:43	PICKERING	Item accepted at the Post Office		
Shipping Options and Features for this Item					





November 14, 2013

Via: Courier

Chief Burton Kswayosh Jr.  
 Walpole Island First Nation (Bkejwanong Territory)  
 Bkejwanong Territory, 117 Tangahoning Road  
 RR#3  
 Wallaceburg ON N8A 4K9

Dsr Chief Kewayosh Jr.:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment**  
 File No.: 300032339.0000

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environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T. James Hollingsworth  
 The Corporation of the Town of St. Marys R.J. Burnside & Associates Limited  
 400 James Street South, P.O. Box 598 1465 Pickering Parkway, Suite 200  
 St. Marys, ON N4X 1B6 Pickering ON L1S 6H3  
 Phone: 519-284-2340 Ext. 209 Phone: 905-420-5777 Ext. 803  
 Fax: 519-284-0902 Fax: 905-420-5247  
 Email: dblake@town.stmarys.on.ca Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

cc: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM

## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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Agency: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Address (2<sup>nd</sup> line): \_\_\_\_\_  
 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_



November 14, 2013

Via: Courier

Mr. Daeh Jacobs  
Consultation Manager  
Walpole Island First Nation (Bkejwanong Territory)  
Bkejwanong Territory, 117 Tahgahoning Road  
RR#3  
Walleceburg ON N8A 4K9

Dear Mr. Jacobs:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment**  
File No.: 300032339.0000

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Deve Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B5  
Phone: 519-264-2340 Ext. 209  
Fax: 519-264-0902  
Email: dblade@townofstmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 6K3  
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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
14/11/2013 2:44 PM



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Return by:	November 30, 2013 to:
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Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
032339 TOR Request Form.docx 18/11/2013 10:02 AM



November 14, 2013

Via: Courier

Mr. Jared Macbeth  
 Consultation Manager  
 Walpole Island First Nation (Bkejwanong Territory)  
 Bkejwanong Territory, 117 Tahgahoning Road  
 RR#3  
 Wallaceburg ON N8A 4K9

Dear Mr. Macbeth:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000

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 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 896  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: d.blake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
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James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

022339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



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 Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



### Tracking Details

Shipment Status

Package Status  
 Package Tracking Number: 335816105818 [View more details](#)

Delivered  
 Friday, November 15, 2013 2:08 p.m.  
 Origin signature not required

Service	Purolator Express Envelope	From To	Pickup City, ON, CA	Delivery City, ON, CA
Est. Shipping Weight	1.5		Wallaceburg ON, CA	
Shipment Date	Nov 14, 2013			

History

Date	Local Time	Location	Description
Nov 15, 2013	2:08 p.m.	Chatham, ON	Shipment delivered at PICKUP LOCATION
Nov 14, 2013	10:38 a.m.	Chatham, ON	Out for delivery
Nov 14, 2013	8:14 p.m.	Terrace Bay Station TX, ON	Arrival at sort facility
Nov 14, 2013	4:33 p.m.	Pickup City, ON	Picked up by Purchaser of PICKUP LOCATION
Nov 14, 2013	4:37 p.m.	Purolator	Shipment label created

Shipment Summary  
 Tracking # 335816105818 Nov 15, 2013 Delivered  
 Packages 1 of 1

\*NOTE: Tracking Details for the following:  
 Chief Burton Kewayosh Jr.  
 Mr. Dean Jacobs  
 Mr. Jared Macbeth



November 14, 2013

Via: Courier

Mr. Andrew Good  
 President  
 Windsor Essex Metis Council  
 4745 Huron Church Line  
 Windsor ON N9H 1H5

Dear Mr. Good:

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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 14/11/2013 2:44 PM



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 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_



### Tracking Details

Shipment Status

Package Status Package Tracking Number: 320048187744 <a href="#">View used of online and closure</a>	Shipment Summary Tracking # Delivery By Status 320048187744 Nov 16, 2013 Delivered Package(s) 1 of 1																								
<p><b>Delivered</b>                  Friday, November 15, 2013 1:34 p.m.                  Received By: Labord</p> <table border="1"> <thead> <tr> <th>Service</th> <th>Facilities/Region</th> <th>From</th> <th>Pickering ON CA</th> </tr> </thead> <tbody> <tr> <td>Est. Shipment Weight</td> <td>Pickup</td> <td>TO</td> <td>Windsor, ON, CA</td> </tr> <tr> <td>Shipment Date</td> <td>Nov 14, 2013</td> <td></td> <td></td> </tr> </tbody> </table>		Service	Facilities/Region	From	Pickering ON CA	Est. Shipment Weight	Pickup	TO	Windsor, ON, CA	Shipment Date	Nov 14, 2013														
Service	Facilities/Region	From	Pickering ON CA																						
Est. Shipment Weight	Pickup	TO	Windsor, ON, CA																						
Shipment Date	Nov 14, 2013																								
<p>History</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Local Time</th> <th>Location</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Nov 15, 2013</td> <td>1:34 p.m.</td> <td>Windsor, ON</td> <td>Shipment delivered to LABORD at RECEPTION</td> </tr> <tr> <td>Nov 15, 2013</td> <td>9:07 a.m.</td> <td>Windsor, ON</td> <td>ON WAREHOUSE for delivery</td> </tr> <tr> <td>Nov 14, 2013</td> <td>8:24 p.m.</td> <td>Toronto South Centre TEL ON</td> <td>Arrived at our facility</td> </tr> <tr> <td>Nov 14, 2013</td> <td>4:33 p.m.</td> <td>Pickering, ON</td> <td>Picked up by Purolator at PICKERING ON</td> </tr> <tr> <td>Nov 14, 2013</td> <td>4:32 p.m.</td> <td>Pickering</td> <td>Shipping label created</td> </tr> </tbody> </table>		Date	Local Time	Location	Description	Nov 15, 2013	1:34 p.m.	Windsor, ON	Shipment delivered to LABORD at RECEPTION	Nov 15, 2013	9:07 a.m.	Windsor, ON	ON WAREHOUSE for delivery	Nov 14, 2013	8:24 p.m.	Toronto South Centre TEL ON	Arrived at our facility	Nov 14, 2013	4:33 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON	Nov 14, 2013	4:32 p.m.	Pickering	Shipping label created
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\*NOTE: Mr. Andrew Good



November 14, 2013

Via: Courier

Mr. James Wagar  
 Manager of Natural Resources  
 Metis Nation of Ontario  
 Lands, Resources and Consultations, Suite 311  
 75 Sherbourne Street  
 Toronto ON M5A 2P9

Dear Mr. Wagar:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity,
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's website, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the *Town Services, Garbage and Recycling* page.

We are enclosing with this letter a hard copy of the TOR. In the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website if additional copies are required.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 996  
 St. Marys, ON N4X 1B5  
 Phone: 519 284 2340 Ext. 209  
 Fax: 519 284-0902  
 Email: dblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
 Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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

Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

032339 TOR Request Form.docx 18/11/2013 10:02 AM



### Tracking Details

Shipment Status

Day	Local Time	Location	Description
Nov 22, 2013	2:16 p.m.	Toronto (Don/McCowan/Vivian) ON	Shipment delivered to LEANN at BICOPITION
Nov 22, 2013	7:24 a.m.	Toronto (Don/McCowan/Vivian) ON	On vehicle for delivery
Nov 21, 2013	2:16 p.m.	Toronto (Don/McCowan/Vivian) ON	Arrived at sort facility
Nov 21, 2013	2:15 p.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incorrect address / incorrect address provided
Nov 21, 2013	6:07 a.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 20, 2013	6:12 p.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 20, 2013	11:12 a.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 20, 2013	7:31 a.m.	Toronto (Don/McCowan/Vivian) ON	On vehicle for delivery
Nov 19, 2013	2:08 p.m.	Toronto (Don/McCowan/Vivian) ON	Arrived at sort facility
Nov 19, 2013	2:05 p.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 19, 2013	12:00 p.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 19, 2013	10:36 a.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 16, 2013	7:19 a.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 16, 2013	6:18 p.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 14, 2013	2:30 p.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 16, 2013	7:23 a.m.	Toronto (Don/McCowan/Vivian) ON	On vehicle for delivery
Nov 16, 2013	1:04 a.m.	Toronto (Don/McCowan/Vivian) ON	Arrived at sort facility
Nov 16, 2013	1:03 a.m.	Toronto (Don/McCowan/Vivian) ON	Picked up by Purolator
Nov 16, 2013	4:43 p.m.	Toronto (Don/McCowan/Vivian) ON	Arrived at sort facility
Nov 15, 2013	8:26 p.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 15, 2013	8:26 p.m.	Toronto (Don/McCowan/Vivian) ON	Attempted delivery - incomplete / incorrect address provided
Nov 15, 2013	7:11 a.m.	Toronto (Don/McCowan/Vivian) ON	On 42101th rd. delivery
Nov 14, 2013	1:55 p.m.	Toronto (Don/McCowan/Vivian) ON	Arrived at sort facility
Nov 14, 2013	4:33 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 14, 2013	4:32 a.m.	Pickering, ON	Shipment held at sort facility

Tracking #	Delivery By	Status
3309153833	Nov 22, 2013	Delivered

Package 1 of 1

\*NOTE:  
 Mr. James Wagar



November 14, 2013

Via: Courier

Mr. Gary Lipinski  
 Melissa Nation of Ontario  
 500 Old St. Patrick Street  
 Unit 3  
 Ollawa ON K1N 9G4

Dear Mr. Lipinski:

Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 409 James Street South, P.O. Box 999  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: dblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 603  
 Fax: 905-420-5247  
 Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs <b>Proposed Terms of Reference for an Environmental Assessment</b>
File No.:	300032339.0000
<b>Return by November 30, 2013 to:</b>	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_



### Tracking Details

Shipment Status

Package Status: Delivered  
 Monday, November 18, 2013 3:34 p.m.  
 Received By: Booklet

Service: Purolator Express  
 Employee: S.S.  
 Shipment Date: 18e 14, 2013

From: Pickering, ON, CA  
 To: Ollawa, ON, CA

Est. Shipment Weight: 1.0  
 Shipment Date: 18e 14, 2013

Shipment Summary

Tracking #: Delivered By: Status  
 300018197298 Nov 18, 2013 Delivered  
 Packages: 1 of 1 of 1

Date	Local Time	Location	Description
Nov 18, 2013	3:34 p.m.	Ollawa, ON	Shipment Delivered to BERRETT JC RECEIPT
Nov 18, 2013	9:31 a.m.	Ollawa, ON	On vehicle for delivery
Nov 18, 2013	2:20 p.m.	Ollawa, ON	Abandoned delivery - receiver unavailable
Nov 15, 2013	9:11 a.m.	Ollawa, ON	On vehicle for delivery
Nov 14, 2013	4:16 p.m.	Toronto West Creek T1, ON	Arrived at sort facility
Nov 14, 2013	4:01 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 14, 2013	4:07 p.m.	Pickering	Shipping label created

\*NOTE: Tracking Detail for Mr. Gary Lipinski



November 14, 2013

Via: Courier

Ms. Denise Stonefish  
 Deputy Grand Chief  
 Association of Iroquois and Allied Indians  
 387 Princess Avenue  
 London ON N6B 2A7

Dear Ms. Stonefish:

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 998  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: ddblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - FN.docx  
 14/11/2013 2:44 PM

R.J. Burnside & Associates Limited 1465 Pickering Parkway Suite 200 Pickering ON L1V 7G7 Canada  
 telephone (905) 420-5777 fax (905) 420-5247 web www.rjburnside.com



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs <b>Proposed Terms of Reference for an Environmental Assessment</b>
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Address (2<sup>nd</sup> line): \_\_\_\_\_  
 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_  
 Signature \_\_\_\_\_ Date \_\_\_\_\_

032339 TOR Request Form.docx 19/11/2013 10:02 AM



### Tracking Details

Shipment Status

<b>Package Status</b> Package Tracking Number: 99991871810 www.purolator.com/delivery-en/shipment-status	<b>Shipment Summary</b> Tracking # Delivery By Status 3001975910 Nov 15, 2013 Delivered Package: 1 of 1		
<b>Delivered</b> Friday, November 15, 2013 11:12 a.m. Received by: Jack			
Service: Purolator Express Est. shipment weight: 1 lb. Shipment Date: Nov 14, 2013	From: Pickering, ON, CA To: Corvax, ON, CA		
<b>History</b>			
Date	Local Time	Location	Description
Nov 15, 2013	11:12 a.m.	London, ON	Shipment delivered to ZAGK at RECEIPTION
Nov 15, 2013	6:10 a.m.	London, ON	On vehicle for delivery
Nov 14, 2013	8:55 p.m.	Toronto Scott Castle Tr, ON	Arrived at sort facility
Nov 14, 2013	4:15 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 14, 2013	4:32 p.m.	Purolator	Shipping label created

\*NOTE: Tracking Detail Ms. Denise Stonefish



**Town of St. Mary's Solid Waste Disposal Environmental Assessment Terms  
of Reference**

**Ashley Gallagher** to: dstonefish

12/06/2013 04:15 PM

Dear Ms. Stonefish,

On behalf of the Town of St. Mary's, I am contacting you to confirm that you have received a copy of the Revised Terms of Reference for the Town of St. Mary's Solid Waste Disposal Environmental Assessment. I hope that you have received this document. Although we have a receipt showing it was received at your office, we wanted to confirm that you have seen it. Note that the full ToR is now available for download on the Town's website, <http://townofstmarys.com/>. If you have any questions or comments about the project, please contact either of the Project Managers listed below .:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

We currently have the following contact information in our records for the Association of Iroquois and Allied Indians (AIAI). If you have any updates please notify either of the Project Managers above. Please also confirm that you wish to be the main point of contact for the AIAI.

Denise Stonefish, Deputy Grand Chief  
387 Princess Avenue, London ON N6B 2A7  
Phone: none (**please provide**)  
Fax: (519) 679-1653  
Email: [dstonefish@aiai.on.ca](mailto:dstonefish@aiai.on.ca)

Thank you kindly for your assistance ,

-Ashley Gallagher





RE: Town of St. Marys Landfill Capacity Expansion EA-TOR

Caron Smith

to:

Jamie Hollingsworth

12/20/2013 10:21 AM

Cc:

"Dave Blake", "Joanne Thomas"

Hide Details

From: "Caron Smith" <csmith@sixnations.ca>

To: "Jamie Hollingsworth" <Jamie.Hollingsworth@rjburnside.com>,

Cc: "Dave Blake" <dblake@town.stmarys.on.ca>, "Joanne Thomas" <jthomas@sixnations.ca>

1 Attachment



image001.gif

Hi Jamie ... yes this is correct. Our meeting can take place before or after the information is collected and/or MOE approval. Meeting in Feb or March is good.

Jamie we too would like to share information with you such as our consultation process and archaeological monitoring program which may be of interest to your project in the spring. Thanks again for this opportunity and look forward to meeting with your team.

Caron

**From:** Jamie Hollingsworth [<mailto:Jamie.Hollingsworth@rjburnside.com>]

**Sent:** December-20-13 10:08 AM

**To:** Caron Smith

**Cc:** Dave Blake; Joanne Thomas

**Subject:** RE: Town of St. Marys Landfill Capacity Expansion EA-TOR

Caron;

I tried calling you but it went straight to Joanne's voice mail.

Just so I am sure that we're both thinking the same way... I will give Joanne a call to discuss potential dates, times and locations for a meeting. I plan to call her after the ToR is approved by the Ministry of the Environment. That is expected to occur in late February 2014, so my call to Joanne would be in late February or early March. The meeting with your Consultation and Accommodation Process Team could be scheduled before or after the site review to determine the potential for archaeological resources. I would suggest it may be best to have the meeting after that site review (so we can present the findings) unless your Team have some relevant data that may inform the archaeological review or the EA generally. We can decide the timing for the meeting when I call Joanne in February/March.

I hope this is what you were thinking too. However, if you would like to suggest an alternate timing/sequence, please email or call me. It is certainly not a problem if alternate timing is proposed.

Take Care,  
Jamie

\*\*\*\* CONFIDENTIALITY NOTICE \*\*\*\*

This electronic transmission and any accompanying attachments may contain privileged or confidential information intended only for the use of the individual or organization named above. Any distribution, copying or action taken in reliance on the contents of this communication by anyone other than the intended recipient(s) is STRICTLY PROHIBITED.

If you have received this communication in error please notify the sender at the above email address and delete this email immediately.

Thank you.

\*\*\*\*\*

From: "Caron Smith" <[csmith@sixnations.ca](mailto:csmith@sixnations.ca)>  
To: "Jamie Hollingsworth" <[Jamie.Hollingsworth@rjburnside.com](mailto:Jamie.Hollingsworth@rjburnside.com)>,  
Cc: "Joanne Thomas" <[jthomas@sixnations.ca](mailto:jthomas@sixnations.ca)>, "Dave Blake" <[dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca)>  
Date: 12/20/2013 09:45 AM  
Subject: RE: Town of St. Marys Landfill Capacity Expansion EA-TOR

---

Good Morning Jamie and thank you for your response.  
Yes we would be interested in a meeting in the New Year.  
Please provide Joanne with the potential dates, times, place.  
Have a Merry Xmas and look forward to meeting you in the new year.

*Caron Smith, BES  
Land Use Officer  
Six Nations Elected Council  
Lands and Resources  
519-445-2563 x5433  
[csmith@sixnations.ca](mailto:csmith@sixnations.ca)*

**From:** Jamie Hollingsworth [<mailto:Jamie.Hollingsworth@rjburnside.com>]  
**Sent:** December-20-13 9:24 AM  
**To:** Caron Smith  
**Cc:** Joanne Thomas; Dave Blake  
**Subject:** RE: Town of St. Marys Landfill Capacity Expansion EA-TOR

Caron;

Thank you for your email.

The proposed Terms of Reference (ToR) lists two main alternatives, a) waste export and b) expansion of the existing St. Marys landfill. You indicated that there may be an interest in the Archaeological Study (Studies) proposed as well as the findings of the study or studies. For the comparison of these alternatives, the Environmental Assessment (EA) will include an archaeological assessment of the existing landfill property. A qualified person will conduct a review of the site to determine if the potential for archaeological resources exist. As the site was previously an aggregate extraction operation and has been excavated to a depth of several meters, we anticipate the possibility for archaeological resources within the site to be very low. However, should

the qualified person determine there are, or are likely to be, archaeological resources, then additional studies will be required. In either event, we will be pleased to provide Six Nations with a copy of the findings.

Timing wise, we are hoping to have Ministry of the Environment approval of the ToR by the end of February 2014. The archaeological assessment is likely to occur in the spring, after the snow melt and preferably before full vegetation returns. I welcome a discussion with you and/or your colleague regarding this plan (and the entire EA) at your convenience in the New Year, likely following MOE approval of the ToR, The discussion could focus on the best timing for a meeting with your Consultation and Accommodation Process Team.

I have added a calendar item to remind myself to call Ms. Thomas following ToR approval.

Season's Greetings and Happy New Year to you as well.

Take Care,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

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If you have received this communication in error please notify the sender at the above email address and delete this email immediately.

Thank you.

\*\*\*\*\*

From: "Caron Smith" <[csmith@sixnations.ca](mailto:csmith@sixnations.ca)>  
To: "Jamie Hollingsworth" <[Jamie.Hollingsworth@rjburnside.com](mailto:Jamie.Hollingsworth@rjburnside.com)>,  
Date: 12/16/2013 03:15 PM  
Subject: RE: Town of St. Marys Landfill Capacity Expansion EA-TOR

---

Good afternoon Jamie .... This email is in response to the TOR for Town of St. Marys Landfill.

The landfill expansion of approximately 535,000 cubic metres will occur within the existing 37 hectare footprint of the Site. The purpose of the proposed Terms of Reference is to describe the process that will be followed in completing the Environmental Assessment, which is required to gain approval for the landfill expansion.

Please note, the landfill site is in the 1701 Nanfan treaty lands of the Six Nations of the Grand River. There is a potential interest in the Archaeological study(s) proposed and its findings.

I would like to suggest moving forward, a meeting with the Consultation and Accommodation Process team in the new year.

Please contact Joanne Thomas at [jthomas@sixnations.ca](mailto:jthomas@sixnations.ca) or call 519-445-2563 to arrange this meeting. Thank you and have great holiday.

*Caron Smith, BES  
Land Use Officer  
Six Nations Elected Council  
Lands and Resources  
519-445-2563 x5433  
[csmith@sixnations.ca](mailto:csmith@sixnations.ca)*

**From:** Jamie Hollingsworth [<mailto:Jamie.Hollingsworth@rjburnside.com>]  
**Sent:** November-08-13 3:16 PM  
**To:** Caron Smith  
**Cc:** Ashley Gallagher  
**Subject:** RE: Town of St. Marys Landfill Capacity Expansion EA-TOR

Caron;

Yes, we can continue as you've described. I've copied my colleague so this is reflected in our contact list.

Have a good weekend,  
Jamie

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If you have received this communication in error please notify the sender at the above email address and delete this email immediately.

Thank you.

\*\*\*\*\*

From: "Caron Smith" <[csmith@sixnations.ca](mailto:csmith@sixnations.ca)>  
To: "Jamie Hollingsworth" <[Jamie.Hollingsworth@rjburnside.com](mailto:Jamie.Hollingsworth@rjburnside.com)>,  
Date: 11/08/2013 03:12 PM  
Subject: RE: Town of St. Marys Landfill Capacity Expansion EA-TOR

---

Thank you Jamie .... Could you please continue the Chief as the primary contact and cc to me. I will receive it in any event.  
Thanks

*Caron Smith, BES  
Land Use Officer  
Six Nations Elected Council  
Lands and Resources  
519-445-2563 x5433  
[csmith@sixnations.ca](mailto:csmith@sixnations.ca)*

**From:** Jamie Hollingsworth [<mailto:Jamie.Hollingsworth@rjburnside.com>]  
**Sent:** November-08-13 3:02 PM  
**To:** Caron Smith  
**Subject:** Re: Town of St. Marys Landfill Capacity Expansion EA-TOR

Caron,

Thank you for expressing your community's interest in this project. I will make sure to have a copy of the updated Terms of Reference (TOR) sent your way in the near future. I will add you as the primary contact person for our mailing list.

Warm regards,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

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communication by anyone other than the intended recipient(s) is STRICTLY PROHIBITED.

If you have received this communication in error please notify the sender at the above email address and delete this email immediately.

Thank you.

\*\*\*\*\*

From: "Caron Smith" <[csmith@sixnations.ca](mailto:csmith@sixnations.ca)>  
To: <[jamie.hollingsworth@riburnside.com](mailto:jamie.hollingsworth@riburnside.com)>,  
Date: 11/08/2013 02:55 PM  
Subject: Town of St. Marys Landfill Capacity Expansion EA-TOR

---

Good Afternoon .... The Six Nations Elected Council is interested in the above noted project and would like remain on the project mailing list and would like to receive a copy of the updated Terms of Reference.

Thank you,

*Caron Smith, BES  
Land Use Officer  
Six Nations Elected Council  
Lands and Resources  
519-445-2563 x5433  
[csmith@sixnations.ca](mailto:csmith@sixnations.ca)*



**Fw: Proposed TOR - File No.300032339.0000**

**Jamie Hollingsworth** to: malikakos

12/20/2013 10:14 AM

Cc: "Wright, Wesley (ENE)", "Dave Blake", Debanjan Mookerjea, Andrew Evans

Ms. Alikakos,

The Ministry of Environment has forwarded your email dated December 17, 2013 indicating you are planning to provide comments during the week of January 20th, 2014. While the Town of St. Marys needs to submit the Terms of Reference (ToR) before this date in order to maintain a very tight schedule, we look forward to receiving your comments and engaging with the Chippewas of the Thames First Nation throughout the EA process to help guide the undertaking. Your pending comments will be considered at the outset of the EA to ensure they are addressed in the EA process. The proposed Terms of Reference includes a frequent consultation program that will be flexible by allowing response to new issues that emerge as the EA proceeds.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to (either):

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: [dblake@town.stmarys.on.ca](mailto:dBlake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

We look forward to connecting with you further throughout this endeavour.

Best Regards,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

----- Forwarded by Jamie Hollingsworth/RJB on 12/20/2013 10:08 AM -----

From: Jamie Hollingsworth/RJB  
To: [malikakos@cottfn.com](mailto:malikakos@cottfn.com),  
Cc: "Dave Blake" <[dblake@town.stmarys.on.ca](mailto:dBlake@town.stmarys.on.ca)>, Andrew Evans/RJB@RJB, Debanjan Mookerjea/RJB@RJB  
Date: 12/18/2013 01:16 PM  
Subject: Fw: Proposed TOR - File No.300032339.0000

Ms. Alikakos;

Per my voice mail message this afternoon, Burnside is working for the Town of St. Marys on their Future Solid Waste Disposal Needs Environmental Assessment. I am hoping to speak to you briefly, preferably today, regarding the anticipated scope of comments that you hope to provide on the Proposed Terms of Reference for this EA.

For your convenience, my contact details are provided in my signature below.

I look forward to hearing from you soon.

Take Care,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

----- Forwarded by Jamie Hollingsworth/RJB on 12/18/2013 01:08 PM -----

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>  
To: "jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>, "Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>, "Dave Blake (dblake@town.stmarys.on.ca)" <dblake@town.stmarys.on.ca>,  
Date: 12/18/2013 12:08 PM  
Subject: FW: Proposed TOR - File No.300032339.0000

---

Sorry – I thought you were cc'd on the email (since your notice/cover letter should have indicated this, but I then realized that her email was in response to MOE's follow up, not Burnside's). I am forwarding Ms. Alikakos's email to you now...

Thanks,

Wesley



Please consider the environment before printing this email.

**From:** Mary Alikakos [mailto:malikakos@cottfn.com]  
**Sent:** December 17, 2013 10:14 AM  
**To:** Wright, Wesley (ENE)  
**Cc:** 'Rolanda Elijah'; fburch@cottfn.com



**Subject:** Proposed TOR - File No.300032339.0000

Hi, Welsey

I spoke to Sarah Edmunds this morning regarding comment submission on the above -noted file. Please note that our office is unable to respond by the proposed deadline, due in part to the many proposed projects in Chippewas of the Thames treaty and traditional territory. I respectfully request that you accept our comments during the week of January 20<sup>th</sup>, 2014.

I look forward to your response.

Thank you and have a good day,  
Mary

***Mary Alikakos***

Senior Environment Officer,  
Treaty, Lands & Environment  
Chippewas of the Thames First Nation  
T. 519-289-2662 ext.212  
F. 519-289-3117



*Please consider the environment before printing this email.*

---

**Attachment E4  
Additional Agency Consultation  
Undertaken by Burnside (2013)**

Agency/Organization	Title	First Name	Last Name	Position	Address 1	Address 2	City	Province	Postal Code	Email	Telephone	Fax
Canadian Transportation Agency - Rail, Air and Marine Disputes Directorate	Mr.	Luc	Fortin	Senior Environmental Officer	15 Eddy Street		Gatineau	QC	K1A 0N9	luc.fortin@otc-cta.gc.ca	(819) 953-2238	(819) 953-8353
Department of Fisheries and Oceans Canada - Southern Ontario District	Mr.	Paul	Savoie	Regional Environmental Assessment Analyst	District Office, 3027 Harvester Road	Unit 304	Burlington	ON	L7R 4K3		(905) 639-8687	(905) 639-3549
Environment Canada - Ontario Region	Mr.	Rob	Dobos	Manager, Environmental Assessment Section	867 Lakeshore Road	P.O. Box 5050	Burlington	ON	L7R 4A6	rob.dobos@ec.gc.ca	(905) 336-4953	(905) 336-8901
Transport Canada - Ontario Region (PHE) Environment and Engineering				Environmental Coordinator	4900 Yonge Street		North York	ON	M2N 6A5	EnviroOnt@tc.gc.ca		(416) 952-0514
Hydro One Networks Inc.	Mr.	Walter	Kloostra	Sustainment Investment Planning	483 Bay Street	North Tower, 15th Flo	Toronto	ON	M5G 2P5	w.d.kloostra@hydroone.com	(416) 345-5114	(416) 345-5443
Ministry of Agriculture, Food and Rural Affairs- West-Central Region	Ms.	Carol	Neumann	Rural Planner	6484 Wellington Road 7	Unit 10	Elora	ON	N0B 1S0	carol.neumann@ontario.ca	(519) 846-3393	(519) 846-8178
Ministry of Infrastructure - Ontario Growth Secretariat, Growth Policy, Planning and Analysis Branch	Mr.	Andrew	Theoharis	Manager (A), Growth Policy	777 Bay Street	4th Floor, Suite 425	Toronto	ON	M5G 2E5	andrew.theoharis@ontario.ca	(416) 325-5794	(416) 325-7403
Ministry of Municipal Affairs and Housing- Western Municipal Service Office	Mr.	Bruce	Curtis	Manager, Community Planning and Development	659 Exeter Road	2nd Floor	London	ON	N6E 1L3	bruce.curtis@ontario.ca	(519) 873-4026	(519) 873-4018
Ministry of Natural Resources- Guelph (Southern Region)	Mr.	David	Marriot	District Planner (A)	1 Stone Road West		Guelph	ON	N1G 4Y2	mike.stone@ontario.ca; david.marriot@ontario.ca	4955; (519) 826-4912; (519) 826-4929 (David)	(519) 826-4929
Ministry of Tourism, Culture and Sport, Culture Services Unit	Ms.	Paula	Kulpa	Land Use Planning, Culture Services Unit	401 Bay Street	Suite 1700	Toronto	ON	M7A 0A7	paula.kulpa@ontario.ca	(416) 314-7137	(416) 314-7175
Ontario Power Generation	Ms.	Susan	Rapin	Director, Environment Services	700 University Avenue		Toronto	ON	M5G 1X6	susan.rapin@opg.com	(416) 592-6399	
Bell Canada, Municipal Operations Centre	Mr.	John	Lachapelle		100 Borough Drive	Floor 5 Blue	Scarborough	ON	M1P 4W2			
Enbridge Gas Distribution Inc.	Mr.	Vince	Cina	Supervisor, Planning and Design	500 Consumers Road		North York	ON	M2J 1P8			
MTS - Allstream					50 Worcester Road		Etobicoke	ON	M9W 5X2	utility.circulations@mtsallstream.com	(416) 649-7527	
Rogers Communications	Ms.	Marian	Wright	Planning Coordinator	3573 Wolfedale Road		Mississauga	ON	L5C 3T6	Marion.Wright@rci.rogers.com	(905) 897-3914; (888) 764-3771	
Upper Thames Conservation Authority				Planner	1424 Clarke Road		London	ON	N5V 5B9	info@thamesriver.on.ca	(519) 451-2800	(519) 451-1188
Union Gas Limited	Ms.	Lindsay	Robinson	District Engineer	PO Box 2001		Chatham	ON	N7M 5M1		(519) 352-3100	
Consultation and Accommodation Unit (CAU) Ontario Office										UCA-CAU@aadnc-aandc.gc.ca (use 'Aboriginal consultation information')		
Ministry of Aboriginal Affairs - Policy and Relationships Branch										MAA_EA_Review@ontario.ca		
Infrastructure Ontario	Mr.	Keith	Noronha	Environmental Management, Team Assistant						Keith.Noronha@infrastructureontario.ca	(416) 327-2755	
Environmental Assessment Coordination, Environment Unit, Lands and Trusts Services					25 St. Clair Avenue East	8th Floor	Toronto	ON	M4T 1M2	EACoordination_ON@aadnc-aandc.gc.ca		
Canadian Environmental Assessment Agency - Ontario Region	Ms.	Anjala	Puvanathan	Ontario Region Director	55 St. Clair Avenue East	Suite 907	Toronto	ON	M4T 1M2	anjala.puvanathan@ceaa-acee.gc.ca	(416) 952-1575	(416) 952-1573
Department of Fisheries and Oceans Canada - Fish Habitat Management	Ms.	Sara	Eddy	Senior Habitat Biologist, Ontario-Great Lakes Area	District Office	867 Lakeshore Road	Burlington	ON	L7R 4A6	sara.eddy@dfo-mpo.gc.ca	(905) 336-4535	(905) 336-6286
Hydro One Inc.	Mr.	Tony	Ierullo	Manager	483 Bay Street	North Tower, 14th Flo	Toronto	ON	M5G 2P5	ierullo@HydroOne.com	(416) 345-5213	(416) 345-5395
Hydro One Real Estate Management	Ms.	Joan	Zhao		185 Clegg Road		Markham,	ON	L6G 1B7	Joan.Zhao@HydroOne.com	(905) 946-6230	
Hydro One Networks Inc.	Mr.	Walter	Kloostra	Sustainment Investment Planning	483 Bay Street	North Tower, 15th Flo	Toronto	ON	M5G 2P5	w.d.kloostra@hydroone.com	(416) 345-5114	(416) 345-5443
Ministry of Environment - Environmental Assessment and Approvals Branch										MEA.NOTICES.EAAB@ontario.ca		
Ministry of the Environment - London Regional and Distict Office, Southwestern Region				Planner and Environmental Assessment Coordinator	733 Exeter Road		London	ON	N6E 1L3		code 519: 1-800-265-7672 (519) 873-5000	(519) 873-5020
Ministry of Transportation - Southwestern Region	Mr.	Kevin	Bentley	Manager- Engineering Office	659 Exeter Road		London	ON	N6E 1L3	kevin.bentley@ontario.ca	(519) 873-4373	(519) 873-4388
Ontario Provincial Police- Operations Policy and Strategic Planning Bureau	Ms.	Paula	Brown		777 Memorial Avenue	3rd Floor	Orillia	ON	L3V 7V3	Paula.Brown@ontario.ca	(705) 329-6903	
Ministry of Health and Long-Term Care	Mr.	Tony	Amalfa	Manager, Environmental Health Policy and Programs	393 University Avenue	21st Floor	Toronto	ON	M7A 2S1	tony.amalfa@ontario.ca	(416) 327-7634	(416) 327-0984
Bell Canada	Ms.	Wendy	Lefebvre	Design Manager, Access Network	5115 Creekbank Road West	3rd Floor	Mississauga	ON	L4W 5R1	wendy.lefebvre@bell.ca	(905) 219-4558	(416) 701-6489
Bell Canada	Mr.	Scott	Moon	Implementation Department	5115 Creekbank Road	3rd Floor, West Tower	Mississauga	ON	L4W 5R1	scott.moon@bell.ca	(905) 219-4558	(416) 701-6489
Festival Hydro	Ms.	Kathy	Pearson	Engineering	Head Office Attention:Kathy Pearson	P.O. Box 397	Stratford	ON	N5A 6T5		(519) 271 4700 ext. 203	(519) 271 7204
Rogers Business Solutions	Mr.	Tony	Basson	Director of Environment and Sustainability	1 Mount Pleasant Road		Toronto	ON	M4Y 2Y5		(416) 935-3140	
Telus												
Enbridge Pipelines Ltd.	Ms.	Ann	Newman	Crossing Co-ordinator	801 Upper Canada Drive	P.O. Box 128	Sarnia	ON	N7T 7H8			
Perth District Health Unit	Dr.	Miriam	Klassen	Medical Officer of Health & Chief Executive Officer	653 West Gore Street		Stratford	ON	N5A 1L4	Web: http://www.pdhu.on.ca	(519) 271-7600	(519) 271-2195

Agency/Organization	Title	First Name	Last Name	Position	Address 1	Address 2	City	Province	Postal Code	Email	Telephone	Fax
Trans Canada Corporation- Community, Safety and Environment					Community, Safety and Environment	450 - 1 Street SW	Calgary	AB	T2P 5H1	cs_e@transcanada.com	1.855.920.1909	1.403.920.2397
Trans-Northern Pipelines Inc.	Mr.	Satish	Korpal	Coordinator, Crossings and Facilities	45 Vogell Road	Suite 310	Richmond Hill	ON	L4B 3P6	skorpal@tnpi.ca	(905) 770-3353 ext. 211	(905) 770-8675
Ausable Bayfield Conservation Authority				Planner	R.R # 3	71108 Morrison Line	Exeter	ON	N0M 1S5	info@abca.on.ca	Toll Free: 1-888-288-2610; (519) 235-2610	(519) 235-1963
St. Marys Fire Department	Mr.	Dennis	Brownlee	Fire Chief	172 James St. S	P.O. Box 2975	St. Mary's	ON		dbrownlee@town.stmarys.on.ca	Tel: 519-284-1752	Fax: 519-284-1751
County of Perth Ambulance	Mr.	Cliff	Eggleton	EMS Deputy Chief/Operations Manager	187 Erie Street, 2nd Floor		Stratford	ON	N5A 2M6	www.perthcounty.ca	(519) 273-7382 ext. 224	
Heritage St. Marys	Mr.	Larry	Pfaff	Co-Chairperson	P O Box 998	St. Marys Town Hall	St. Marys	ON	N4X 1B6	Cultural Services Email:		
Heritage St. Marys	Ms.	Jan	Mustard	Co-Chairperson	P O Box 998	St. Marys Town Hall	St. Marys	ON	N4X 1B6		Tel: 519-284-3556	519-284-3881
Middlesex (London) OPP Dispatch	Mr.	Steve	Porter	Inspector	823 Exeter Road		London	ON	N6E 1W1		519-681-0300	519-680-2649
Avon Maitland District School Board				Planner	Board Education Centre	62 Chalk Street N.	Seaforth	ON	N0K 1W0	info@fc.amdsb.ca	(519) 527-0111 or 1-800-592-5437	(519) 527-0222
Huron Perth District Catholic School Board				Planner	Board Office, 87 Mill Street	P.O. Box 70	Dublin	ON	N0K 1E0		(519) 345-2440	(519) 345-2449
Conseil scolaire Viamonde				Planner	116 Cornelius Pkwy		North York	ON	M6L 2K5	www.csviamonde.ca/csviamonde	(416) 614-0844	(416) 397-2012
Conseil scolaire de district des écoles catholiques du Sud-Ouest					7575 Forest Glade Promenade		Windsor	ON	N8T 3P5	Website: vibe.csdecso.on.ca	(519) 948-9227	(519) 948-1091
Canadian Pacific Railway- Pension Real Estate/ Land Management Office					ATTN: Pension Real Estate/Land Management	1290 Central Parkway	Mississauga	ON	L5C 4R3			
CN Rail	Mr.	Stefan	Linder	Manager, Public Works Design and Construction	4 Welding Way (off Administration Road)		Vaughan	ON	L4K 1B9	stefan.linder@cn.ca	(905) 669-3264	(905) 760-3406
The Corporation of the Town of St. Marys	Mr.	David	Blake	Environmental Coordinator	408 James Street South	P.O. Box 998	St. Marys	ON	N4X 1B6	dblake@town.stmarys.on.ca	519-284-2340 Ext. 209	519-284-0902
Township of Perth South	Ms	Lizet	Scott	Clerk	3191 Road 122 Office of Chief		St. Pauls	ON	N0K 1V0	lscott@perthsouth.ca	519-271-0619 ext. 224	519-271-0647
Perth County	Ms.	Kerri Ann	O'Rourke	County Clerk	Administrative Officer	1 Huron Street	Stratford	ON	N5A 5S4		519-271-0531	519-271-2723



**BURNSIDE**

[THE DIFFERENCE IS OUR PEOPLE]

## Minutes of Meeting

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### Town of St. Marys Solid Waste Disposal Capacity Environmental Assessment, Terms of Reference

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Meeting Date: March 28, 2013

Date Prepared: April 9, 2013

Time: 11 am

Location: Town of St. Marys, Municipal Operations Centre  
408 James St. South

File No.: 300032339

---

#### Those in attendance were:

Wesley Wright	Ministry of the Environment
Kevin McLlwain	Town of St. Marys
Dave Blake	Town of St. Marys
Chad Papple	Town of St. Marys
Debanjan Mookerjea	R.J. Burnside & Associates Limited
James Hollingsworth	R.J. Burnside & Associates Limited

---

#### The following items were discussed:

Action by

#### 1. Introductions

- 1.1 Kevin began the meeting by welcoming everyone and then asked each person at the table to introduce themselves. Each person gave their name and their role on this project.
- Kevin started, stating that he is the CAO/Clerk at St. Marys.
  - Dave is the Environmental Coordinator for St. Marys, and is the lead contact for the Town on this project.
  - Chad is St. Marys' Senior Manager of Operations, and is responsible for the day-to-day operation of the Town's landfill site (among other duties).
  - Wesley told us that he is the Project Officer responsible for coordinating the Ministry's review of the Terms of Reference (TOR).
  - Debanjan is Burnside's Project Manager for the St. Marys solid waste management related work programs, which include this TOR effort and other components such as landfill monitoring.

**Action by**

- James is Burnside's task lead for the TOR work.

**2. Existing Conditions**

- 2.1 Kevin noted the maps (with air photo background) on the wall of the conference room. He said that they were somewhat out of date, but they show the Town's municipal boundary. Kevin went on to:
- Point out areas of the maps and indicated the zoning/official plan and current developments (i.e., changes not reflected by the air photos) that are underway.
  - Show the location of the existing landfill site. Kevin noted that the lands were purchased from St. Marys Cement (SMC). SMC had used the land previously as a clay quarry before landfilling began in the 1970's. The land transferred from SMC to the Town in 2010.
  - Explain that there are no lands within the Town, beyond the existing landfill site property, which would be available for use as a new landfill. This is the reason that the (November 2012) TOR focussed on expansion of the existing site.

The Town is to send Wesley copies of 1) the zoning/official plan and 2) current Town mapping with air photo overlay.

Town

- 2.2 Kevin noted that the Town had gone through a process in Q3-2012 to review their options with respect to consultant services moving forward on the solid waste management file. Council decided in March 2013 to move to Burnside for this work, including moving forward with the TOR efforts and ultimately the Environmental Assessment (EA) work. Wesley asked for a copy of this Council decision.

Town

Debanjan discussed the files that were made available to Burnside in October 2012, and noted that some additional files have been received during March 2013.

Wesley stated that, from the Ministry's perspective, switching consultants is not a concern. The Ministry is looking for the TOR to adequately explain the reasons behind setting the scope for the EA work.

- 2.3 Wesley discussed the TOR as received by the Ministry to date. He noted that there are still some concerns with the TOR, particularly that previous Ministry comments had not been addressed. Overall, there is a concern with the TOR focussing only on expansion of the existing landfill site.

Wesley said that the focussed EA needs a strong defence of why St. Marys believes it is the best way to move forward. The Ministry will want to see studies that support the approach described in the TOR. It needs to be more than just the Town's official plan.

Dave noted that the existing landfill site has only three more years of capacity. Kevin and Debanjan stated that other options, such as waste

**Action by**

export, are being considered to address short and long term disposal capacity. The remaining capacity and disposal alternatives will be added to the TOR to help strengthen it and address Ministry comments.

There was some discussion of alternatives such as thermal treatment of the waste (i.e., incineration, gasification, or similar technologies). James stated that there are many sources that indicate these technologies are only practical for communities dealing with more than 100,000 tonnes per year due to the cost of the emissions technologies. Wesley said this is a good example where a technical memo could be produced, referencing these sources. The TOR could then exclude thermal treatment technologies as impractical for St. Marys. Such would likely satisfy the Ministry and the public that the TOR's scope need not include thermal technologies.

Similarly for waste diversion, Wesley indicated it would be good to receive information to illustrate why enhanced waste diversion in itself would not be a feasible long-term solution, while recognizing it could help to extend the existing or proposed life span for the landfill site.

Wesley and Kevin agreed that changing the TOR approach to include, for example, looking at export options and strengthening the remaining comments around the focus on the existing landfill property, would be appropriate. Wesley said that documentation needs to provide clarity as to why alternatives are discounted so that non-technical people can understand the reasoning.

- 2.4 Wesley and Debanjan discussed previous Ministry concerns with the TOR. Debanjan noted there are two proponent response tables, one from July 2012 and a second in February 2013. Debanjan asked Wesley for further feedback on which of the responses needed additional modification to fully address MOE comments. Wesley provided Debanjan with a printed copy of his March 4, 2013 memorandum regarding the Ministry's review of the TOR and supporting documentation that had been submitted. Wesley indicated the letter summarized all outstanding issues and comments.

**3. Public Consultation**

- 3.1 Wesley stated that the Ministry has a duty to ensure that the public consultation effort include First Nations people. The Haudenosaunee Development Institute (HDI) and the Haudenosaunee Documentation Committee (HDC) were on the original mailing list for the TOR. However, somewhere along the way, HDI was dropped from the list. Wesley recommended that both HDI and HDC be re-contacted to review and comment upon the revised TOR.

As part of the discussion it was noted that:

- It is not required that St. Marys pay for First Nation reviews.
- St. Marys, potentially through Burnside, must continue to engage

**Action by**

- First Nations until the First Nations tell us otherwise.
- A combination of letters, emails and phone call records should be used to document the First Nation discussions.

- 3.2 Wesley and Debanjan discussed the previous public consultation meeting. Wesley indicated that the information submitted to the Ministry regarding tables/boards on the screening of alternatives did not provide sufficient information. The Town and Burnside will review the previous submission and will discuss how to address this Ministry concern.

Town &  
Burnside

**4. TOR Submission/Time-Out**

- 4.1 Wesley noted that the TOR process is currently on a Time-Out, which began March 21, 2013. As of this meeting, the current time-out runs for seven more weeks (to May 15, 2013).
- 4.2 There was discussion that, given the Town's remaining (three year) disposal capacity, the Town would like to revise the TOR rather than start the process over again. It was noted that making too many changes to the TOR may mean that the TOR is not what the public had previously reviewed. The public consultation process may need to be reinitiated in this case. All agreed that the TOR does need wholesale changes, and so reinitiating the public consultation process is unlikely given the modifications currently envisioned.

Wesley indicated that public review of a slightly revised TOR would occur through the Ministry's process. He stated that the redlined version of the TOR, dated February 2013, was a good step toward addressing Ministry concerns, and the discussions today make him think we are now on the right track.

**5. Teleconference Schedule**

- 5.1 It was agreed that we would set a teleconference for 11 am on Tuesday, April 16, to discuss the TOR changes proposed to address the remaining MOE concerns.

Town

**6. Landfill Site Tour**

- 6.1 The meeting at the Municipal Operations Centre ended at approximately noon. Kevin excused himself at this point while the remaining attendees drove to the St. Marys landfill site for a brief tour.

The site layout, history and existing operations were explained to Wesley. It was also noted that the last landfill cell under the existing site approval would begin construction (preparation for landfilling) this summer (2013).

The meeting ended at approximately 1pm.



**Action by**

The preceding are the minutes of the meeting as observed by the undersigned. Should there be a need for revision, please advise within seven days. In the absence of notification to the contrary, these minutes will be deemed to be an accurate record of the meeting.

Minutes prepared by:

**R.J. Burnside & Associates Limited**



Debanjan Mookerjee  
Project Manager  
DM:cv

*Distribution: All Present (via email)*



Date: April 23, 2013 File No.: 300032339

Project: St. Marys Landfill Individual Environmental Assessment

**Table 1 Plan to Address MOE Comments Dated March 14, 2013 on the Draft Terms of Reference**

MOE Comment		Plan to Address Comment
<b>Section 3.0 Description and Purpose of the Undertaking</b>		
1	The calculations are incorrect; one additional year of 1 % growth has been added to each calculation. For example, the estimated fill rate for the year 2017 should be 10,829 cubic metres.	Calculations will be revised.
2	Comments received indicate a concern regarding the population growth rate for the Town and the annual fill rate projections. Please ensure that both are considered when finalizing annual fill rate estimates in the EA.	Burnside will review the background data (and calculations used) for estimating the fill rate projections.
<b>Section 5.0 Justification for "Focused" EA</b>		
3a	More detail is provided for the rationale of a focused ToR, but there remains no documentation to support why the EA should be "focused," nor why landfill expansion at the existing site is the only feasible landfilling alternative. There is no table indicating how each "alternative to" was scored for the five evaluation criteria—the draft amended ToR simply states that Landfilling was the only "alternative to" that scored Yes for all five criteria. A table summarizing the results of this evaluation (for each alternative and each criterion) is recommended.	<ul style="list-style-type: none"> <li>A table will be created to summarize the evaluation, including how each alternative scored under each criterion.</li> </ul>
3b	Additionally, there is no record of the December 3, 2009 Public Information Open House boards. The handout (Appendix E.1) has only two pages speaking to "alternatives to" and "alternative methods," with no indication of their relative scoring for each evaluation criterion nor identification of preferred or recommendation alternative.	<ul style="list-style-type: none"> <li>Additional documentation from the Dec. 3, 2009 PIC will be obtained from CRA if possible and included in the TOR.</li> <li>The "alternatives to" and the "alternative methods" tables will be reviewed. If possible the evaluation criteria and relative rankings will be supplied. We anticipate some revisions will be required as discussed in item 4b.</li> </ul>
4a	In the response table, you refer to September 18, 2012 and September 25, 2012 St. Mary's Committee-of-the-Whole records. Neither seems to have been provided to EASS.	Committee-of-the-Whole records for both meetings will be included in an appendix in the TOR.
4b	<p>In accordance with Section 4.2.5 of the Code of Practice, were "alternatives to" previously considered during a separate planning or decision-making process? How were "alternatives to" or alternative methods (such as other landfill sites) screened? What environmental or locational factors or restrictions or benefits support a landfill at this location as opposed to another location? What is the performance of the existing landfill and is cost a factor for the proponent? Does the proponent own any other landfill sites which can be considered? If the earlier process had similar provisions to those of the EAA such as:</p> <ul style="list-style-type: none"> <li>An examination of alternatives;</li> <li>Regard for the environment and environmental effects;</li> <li>Public consultation with interested persons such as the public and municipalities;</li> <li>Ability for the public to inspect the planning document in its entirety;</li> <li>Approval by a recognized decision-making body in a transparent manner such as municipal council resolution or provincial government policy decision,</li> </ul> <p>then a proponent may propose to limit the discussion of previously examined alternatives. Relevant information previously considered under Master Plans, Growth Plans, Official Plans, Feasibility Studies etc. are examples of documents that could be submitted with a ToR as part of the supporting documentation to support the selection of alternatives for examination in the EA.</p>	<ul style="list-style-type: none"> <li>We will demonstrate, per 3b, how "alternatives to" and "alternative methods" have been previously screened.</li> <li>We will describe the environmental and locational factors, restrictions and benefits that support consideration of expanding the existing St. Marys Landfill Site.</li> <li>Landfill monitoring to date indicates that the St. Marys Landfill Site is performing well.</li> <li>Cost is a factor for the Town that must be considered.</li> <li>We will review with the Town any historic, closed landfill sites that may be candidate areas. Further, we will review undeveloped areas of the Town that may be suitable for consideration as a</li> </ul>

MOE Comment	Plan to Address Comment
	<p>new landfill site.</p> <ul style="list-style-type: none"> <li>• The evaluation of alternative methods will be further documented to include a more detailed examination of other alternatives including: <ul style="list-style-type: none"> <li>• Waste diversion;</li> <li>• Thermal technologies;</li> <li>• Shipping waste to another existing landfill;</li> <li>• Consideration of alternative sites for a new landfill in St. Marys;</li> <li>• Or others.</li> </ul> </li> <li>• The Individual Environmental Assessment work completed by the Town prior to O.Reg. 101/07 will be documented (if available).</li> <li>• Master Plans, Growth Plans, Official Plans and similar will be described in the ToR and made available (likely web access). As a single level municipal government, St. Marys is not reliant on others for these plans.</li> </ul>
<p>5 Supporting documents could include: comments of support for the project and preferred alternative of expanding the existing landfill submitted during a Public Information Open House; a complete copy of the display boards at the December 3, 2009 Public Information Open House (Appendix E.1 appears to provide only the Information Package given to attendees); Committee-of-the-Whole records; and land-use mapping to support the claim that there is no other suitable area within the Town boundaries for a landfill. If supporting documents are not provided, this may be viewed as insufficient evidence to support the rationale for a "focused EA" approach.</p>	<ul style="list-style-type: none"> <li>• PIC materials will be obtained from CRA, if possible, and included in an appendix. Documents to support the focused EA approach will be included to further justify the preferred alternative.</li> <li>• Additional documentation as described in 3b, 4a and 4b will be provided, including mapping of the Town showing background air photos, zoning, OP or similar data. Air photos are likely to exclude current construction/development, so these will be indicated as well.</li> </ul>
<p><b>Section 7.0 Alternative Methods to be Considered</b></p>	
<p>6 While potential data sources are identified, many of the criteria listed are not suitable evaluation criteria (e.g., waste disposal volume, ability to enhance channel, leachate generation, access road configuration). The criteria and indicators used in the evaluation of alternatives are to relate to the five aspects of the environment as it is defined in the EAA: natural, social, cultural, economic, and built environment. For example, how does "waste disposal volume" relate to net impact on the environment? If this relates to a concern regarding land required for the alternative (e.g., size of landfill), the indicator could be acres of land to be acquired. Section 4.2.7 of the Code of Practice for Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario provides some examples of evaluation criteria and indicators. Comment #12 of the July 4, 2012 EASS provides further examples. It is unclear how many of the criteria listed in the draft amended ToR relate to environmental effects, which aspect of the environment is being affected, and no indicator is provided for each.</p>	<p>Evaluation criteria will be revised to better reflect the natural, social, cultural, economic, and built environment. Criteria will be developed in accordance with the Code of Practice for Preparing and Reviewing Terms of Reference for Environmental Assessments.</p>
<p>7 Per comment #12c of the July 4, 2012 comments, the ToR should clearly state that the criteria and/or indicators may change and will be further refined in the EA.</p>	<p>The TOR will be updated accordingly.</p>
<p>8 Please describe the "pair-wise comparison process" that is expected to be used for the evaluation of "alternative methods". What pairs will be compared? Why only pairs instead of all of the alternatives concurrently? Will the comparison be binary (e.g., yes/no), comparative (more/less) or scaled? Further elaboration and clarification is required for the reader to understand this comparison process, in part because it does not seem to be one that is commonly used.</p>	<p>A pair-wise comparison of four alternatives would compare 1-2, 1-3, 1-4, 2-3, 2-4 and 3-4 as to which is preferred between each pair for a certain criteria. The alternative that wins the most comparisons would be the best for that criteria. Weightings of criteria can be applied (i.e., groundwater protection is 2x more important than level of service) and overall scores developed for each alternative.</p> <p>Burnside must still review CRA's previous efforts in this regard to determine how best to proceed. A</p>

MOE Comment	Plan to Address Comment
	<p>pair-wise comparison process is but one of the Decision Support Systems (DSS, sometimes called Decision Support Methodology) that may be used. Some aspects of the EA review may be better suited to particular DSS based on the kind of data, i.e., qualitative or quantitative, that is to be compared. Burnside will review available criteria developed by the Town and CRA during previous public consultation efforts. During the EA public consultation effort, we will define or refine these criteria. The EA document will include discussion supporting the evaluations of "alternative methods", to be clear, logical and traceable.</p> <p>Burnside will provide examples of the comparison processes such that we the reader can understand each type. As noted in Comment 7, the evaluation criteria may change and will be further refined during the EA process.</p>
<b>Section 9.1.1.1 Geology/Hydrogeology</b>	
9 Due to comments provided by M. Harris, MOE Regional Hydrogeologist, on December 3, 2012, please include a commitment to develop the hydrogeologic studies in consultation with MOE. Mr. Harris stated that an overview of the planned additions to the monitoring strategy (additional groundwater investigations) would have been helpful, because it would help MOE to identify any concerns ahead of time and to help the Town to optimize the installation of new instrumentation.	Hydrogeological studies will be developed in consultation with MOE. A commitment to this will be stated in the TOR.
10 On December 12, 2012, J. Arthur, MOW Source Protection Planner, stated that the Site is situated within a Significant Groundwater Recharge Area. Please amend the sentence referring to source protection to state that the Upper Thames River Source Protection Area Assessment Report and Source Protection Plan will be considered during the EA.	An appropriate amendment will be made in the TOR and the EA will provide due consideration to the report and plan.
<b>Section 9.1.1.2 Surface Water</b>	
<p>11 The first paragraph states that the ditch/swale will be modified (in consultation with MOE and UTRCA), but the third paragraph seems to read that no changes are proposed to the ditch/swale (at the location of its exit from the Site, nor upstream/downstream of the Site). In a December 4, 2012 email to me, you indicate that the drain will be relocated and that:</p> <p style="padding-left: 40px;">The proposed relocated drain location is along that where the drain enters the Site on the eastern property turn the drain to run north adjacent to the eastern property and then west along the northern property limit and join back up to the existing drain prior to the current drain exit from the Site. The relocated drain would be at the perimeter of the Site and away from the disposal area. The expanded landfill footprint is proposed for the southeastern portion of the Site. The site entrance, composting, recycling, etc. will be moved to the northern west portion of the Site. Part of the EA will be to refine the site design components based on the studies conducted during the EA.</p> <p>It is confusing to the reader (1) if there will be any modifications to this surface water feature, and (2) what the proposed nature of those modifications happens to be. Please clarify this.</p>	<p>Burnside needs to undertake further review of the drain realignment. Our current understanding is that this realignment is needed for the existing, ongoing operation of the landfill site. It may therefore be more appropriately dealt with through the Drainage Act. If the realignment is to accommodate landfill expansion, it will be considered as a design element in the EA. References to the realignment should be removed from the ToR in either case. This will avoid confusion to the reader.</p> <p>Burnside will review the previous consultation effort with respect to the drain realignment. We may recommend clarification be provided, through a new PIC or by other means, so that the public is aware of the change to the ToR.</p>
<b>Section 9.1.3.1 Cultural Heritage Resources</b>	
12 In response to comments received by D. Minkin, Heritage Planner on December 21, 2012, please remove the text "almost completely" to reflect simply that the Site Study Area has been disturbed by landfilling and industrial activities.	Text will be changed accordingly. The EA effort will define the extent of disturbed area.
<b>Section 11.2 EA Consultation Program</b>	
13 Principle #6 states that the EA consultation program will include meetings with Aboriginal communities, but this is not reflected in the proposed activities. Please revise activity #9 to also reflect the request for meetings rather in addition to commenting on draft documents disseminated for review.	Activity #9 will be revised accordingly.
<b>Section 12 EA Work Plan</b>	
14 Per comment #16 of the July 4, 2012 comments: for the EA, a section describing consultation on the EA and its results should be provided within the EA and not in an additional	Consultation undertaken during the EA will be

<b>MOE Comment</b>		<b>Plan to Address Comment</b>
	stand-alone document submitted with the EA. As such, please delete the text " <i>Record of Consultation</i> ", which will accompany and support the EA Report, which appears twice in the section. The sentence succeeding it should read "The EA will include a section describing consultation on the EA and its results."	documented within the EA itself and not in a separate document. The TOR will be updated to reflect this.
<b>General Comments</b>		
15	The opening paragraph defines the Town of St. Marys landfill site as "Site." But there are numerous other references throughout the document other than this, including: St. Marys Landfill, existing St. Marys Landfill Site, existing landfill Site, etc. It is recommended that you simply use Site throughout for consistency. In Section 16.0, the term is defined once again.	The definition of the "Site" will be clarified and used in a consistent manner throughout the TOR document.
	The EASS is of the view that the additions and modification to the ToR outlined above should be undertaken prior to submission of the amended ToR. As such, please made the suggested modifications to the document and resubmit to me for review, to ensure that the changes have been made. I ask that this be done prior to submission of the amended ToR to the minister because failing to make these changes may affect the ability of the minister to approve the document in its current state.	The revised TOR will be submitted to Welsey Wright prior to submission to the Minister.



**St. Marys - Draft TOR, MOE EA File No. 02-08-01**

**Jamie Hollingsworth** to: Wesley.Wright

06/27/2013 04:06 PM

Cc: "Dave Blake", "Chad Papple", "Kevin McLwain", Debanjan Mookerjea, Tricia Radburn

---

Wesley;

Please find attached a draft copy of the "Proposed Terms of Reference, St. Marys Future Solid Waste Disposal Needs Environmental Assessment". We realize that we are just a little over a week until the end of the current Time Out (expiring June 8, 2013). In that short time though, we were hopeful that you could take a brief look at these TOR and provide any preliminary - unofficial if you prefer - comments.

I will call you early next week (Tuesday or Wednesday) to discuss this. In the mean time, have a great Canada Day!

Best regards,  
Jamie

***Please note my new office address and phone numbers !***



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



032339\_St. Marys Landfill TOR.pdf



FW: St. Marys - FN list

Wright, Wesley (ENE)

to:

Debanjan.Mookerjea@rjburnside.com

07/09/2013 03:53 PM

Cc:

"jamie.hollingsworth@rjburnside.com"

Hide Details

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>

To: "Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>,

Cc: "jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>

History: This message has been forwarded.

#### 1 Attachment



Southwest Region Contact info for St. Mary's Landfill EA JULY 2013.doc

To supplement info provided to you already, attached is a mailing list provided to me by Ms. Lareina Rising, Sr Advisor of MOE's Aboriginal Affairs Branch.

Thanks,

Wesley



Please consider the environment before printing this email.

---

From: Rising, Lareina (ENE)  
Sent: July 9, 2013 3:13 PM  
To: Wright, Wesley (ENE)  
Subject: RE: St. Marys - FN list

Wesley,

I have reviewed the list. It is complete (if not overly so). I reviewed the documents you sent me in December and I see now that the proponent (consultant) requested advice on the list in 2006 from OSAA (precursor to the Ministry of Aboriginal Affairs). I also see some correspondence with INAC.

If we were to re-do the list today it might look a little different, however since the proponent has been in contact with the communities listed below then we will leave the list as is.

For your interest, I have included the contact information for the communities in the SWR. I have organized it to include the Community leadership info as well as a technical contact (all items should be cc'd to the technical contact).

The Union of Ontario Indians is a Political Territorial Organization and likely would not be commenting on behalf of the communities so I have not included their contact info.

Thanks,  
Lareina

*Lareina Rising*

Senior Advisor

Aboriginal Affairs Branch

Ontario Ministry of the Environment

**Email:** [Lareina.Rising@ontario.ca](mailto:Lareina.Rising@ontario.ca)

**Phone:** 519-336-4743

---

**From:** Wright, Wesley (ENE)

**Sent:** July 5, 2013 4:35 PM

**To:** Rising, Lareina (ENE)

**Subject:** St. Marys - FN list

Hi, Lareina. List of FNs for St. Marys:

- Union of Ontario Indians
- MNO
- Caldwell FN
- WIFN
- Kettle and Stoney Point FN
- Oneida
- Chippewas of the Thames
- Munsee Delaware
- Six Nations
- Mississaugas of New Credit
- Moravian of the Thames Delaware Nation
- Chippewas of Sarnia 45
- Windsor Essex Métis Community Council

Thanks,

Wesley



Please consider the environment before printing this email.





**Fw: St. Marys - FN list**  
**Jamie Hollingsworth** to: Tricia Radburn

07/09/2013 03:56 PM

History: This message has been forwarded.

F.Y.I.

----- Forwarded by Jamie Hollingsworth/RJB on 07/09/2013 03:56 PM -----

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>  
To: "Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>,  
Cc: "jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>  
Date: 07/09/2013 03:53 PM  
Subject: FW: St. Marys - FN list

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Wesley



Please consider the environment before printing this email.

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Lareina

*Lareina Rising*  
Senior Advisor

*Aboriginal Affairs Branch*  
**Ontario Ministry of the Environment**

**Email:** [Lareina.Rising@ontario.ca](mailto:Lareina.Rising@ontario.ca)  
**Phone:** 519-336-4743

---

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**To:** Rising, Lareina (ENE)  
**Subject:** St. Marys - FN list

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- Union of Ontario Indians
- MNO
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- Chippewas of the Thames
- Munsee Delaware
- Six Nations
- Mississaugas of New Credit
- Moravian of the Thames Delaware Nation
- Chippewas of Sarnia 45
- Windsor Essex Métis Community Council

Thanks,

Wesley



Please consider the environment before printing this email.



Southwest Region Contact info for St. Mary's Landfill EA JULY 2013.doc

<p><b>Contact information for the Aboriginal communities [WITHIN MOE SWR] on the Town of St. Mary's Landfill Expansion EA Consultation list</b></p>		<p><b>Updated: July 7, 2013</b></p> <p><b>Questions may be directed to:</b>  <b>Lareina Rising</b>  <b>Senior Advisor</b>  <b>Aboriginal Affairs Branch</b>  <b>Ministry of the Environment</b>  <b>Ph (519) 336-4743</b>  <b>Email: <a href="mailto:Lareina.Rising@ontario.ca">Lareina.Rising@ontario.ca</a></b></p>
<p><b>Aboriginal Community Name (From community websites or correspondence)</b></p>	<p><b>Nearby town/city &amp; [MOE District]</b></p>	<p><b>Contact information/ mailing address for Leadership and other contacts</b></p>
<p><b>Aamjiwnaang</b> (formerly Chippewas of Sarnia First Nation)</p>	<p>Sarnia, ON  [Sarnia District]</p>	<p>Chief Chris Plain  Aamjiwnaang Administration Office  978 Tashmoo Ave.  Sarnia, ON  N7T 7H5  519-336-8410  Email: <a href="mailto:cplain@aamjiwnaang.ca">cplain@aamjiwnaang.ca</a></p> <p><u>Other contact:</u>  Sharilyn Johnston  Environment Coordinator  Aamjiwnaang Administration Office  978 Tashmoo Ave.  Sarnia, ON  N7T 7H5  519-336-8410</p>

<p><b>Bkejwanong Territory (Walpole Island First Nation)</b></p>	<p>Wallaceburg, ON  [Sarnia District]</p>	<p>Email: <a href="mailto:sjohnston@aamjiwnaang.ca">sjohnston@aamjiwnaang.ca</a></p> <p>Chief Burton Kewayosh Jr. Bkejwanong Territory R. R. #3 Wallaceburg, ON N8A K9 Phone (519) 627-1481 Fax (519) 627-0440</p> <p><u>Other contact:</u> Dean Jacobs, Consultation Manager Walpole Island Heritage Centre R.R. #3 Wallaceburg, ON N8A 4K9 Ph: 519-627-1475 Email: <a href="mailto:dean.jacobs@wifn.org">dean.jacobs@wifn.org</a></p> <p>Jared Macbeth Project Review Coordinator WIFN External Projects Program Walpole Island Heritage Centre R.R. #3 Wallaceburg, ON N8A 4K9 Ph: 519-627-1475 Email: <a href="mailto:Jared.macbeth@wifn.org">Jared.macbeth@wifn.org</a></p>
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<p><b>Chippewas of Kettle and Stony Point First Nation</b></p>	<p>Forest. ON [Sarnia District]</p>	<p>Chief Tom Bressette Chippewas of Kettle and Stony Point First Nation 6247 Indian Lane, RR#2 Forest, Ontario, Canada N0N 1J1 Phone: 519-786-2125 Fax: 519-786-2108</p> <p><u>Other Contact:</u> Suzanne Bressette Communications Relations Officer 6247 Indian Lane, RR#2 Forest, Ontario, Canada N0N 1J1 Phone: 519-786-2125 ext. 115 Email: sue.bressette@kettlepoint.org</p>
<p><b>Oneida Nation of the Thames</b> <b>ONYOTA'A:KA</b></p>	<p>Southwold, ON [London District]</p>	<p>Chief Joel Abram Oneida Nation of the Thames 2212 Elm Ave Southwold, ON N0L 2G0 Canada Ph: 519-652-3244</p> <p><u>Other contact:</u> April Varewyck Environmental Coordinator Oneida Nation of the Thames 2706 Nicholas Road Southwold, Ontario N0L 2G0</p>

		<p>Ph: 519-652-3244  Email:  <a href="mailto:April.varewyck@oneida.on.ca">April.varewyck@oneida.on.ca</a></p>
<p><b>Chippewas of the Thames  First Nation</b></p>	<p>Muncey, ON    [London District]</p>	<p>Chief Joe Miskokomon  Chippewas of the Thames First Nation  320 Chippewa Road., Muncey,  Ontario  N0L 1Y0  Ph: 519 289 5555  Fax: 519 289 2230</p> <p><u>Other Contact:</u>  Rolanda Elijah  Director, Lands and Environment  Dept.  Email: <a href="mailto:relijah@cottfn.com">relijah@cottfn.com</a>  Ph: 519-289-2662 ext 209</p> <p>Chippewas of the Thames  Lands and Environment  4 Anishinaabeg Drive  Muncey, Ontario  N0L1Y0</p> <p>Fallon Burch  Consultation Officer  Lands and Environment Dept  Email: <a href="mailto:fburch@cottfn.com">fburch@cottfn.com</a>  Ph: 519-289-2662 X213</p>

<p><b>Munsee-Delaware First Nation</b></p>	<p>Muncey, ON [London District]</p>	<p>Administration Office R. R. #1 Muncey, ON N0L 1Y0 Ph: (519) 289-5396 Fax: (519) 289-5156</p> <p><u>Other Contact:</u> Dan Miskokoman Band Manager Ph: (519) 289-5396 Fax: (519) 289-5156 Email: <a href="mailto:band.manager@munsee-delaware.org">band.manager@munsee-delaware.org</a> <a href="mailto:drskoke@hotmail.com">drskoke@hotmail.com</a></p>
<p><b>Delaware Nation (Moravian of the Thames)</b></p>	<p>Thamesville, ON [Windsor Area]</p>	<p>Chief Greg Peters Delaware Nation <b>(Moravian of the Thames)</b> 14760 School House Line R. R. #3 Thamesville, Ontario N0P 2K0 Ph: (519) 692-3936 Fax: (519) 692-5522 Email: <a href="mailto:gcpeters@mnsi.net">gcpeters@mnsi.net</a></p> <p><u>Other Contact:</u> Tina Jacobs</p>

		<p>Lands &amp; Resources Consultation  Manager  14979 Schoolhouse line  Thamesville, ON  ph:519-692-4290  Email: <a href="mailto:tnajay@xplornet.ca">tnajay@xplornet.ca</a></p> <p>Justin Logan  Lands &amp; Resources Assistant  Ph: 519-692-4290  Email: <a href="mailto:loganju@xplornet.ca">loganju@xplornet.ca</a></p>
<b>Caldwell First Nation</b>	Leamington, ON  [Windsor Area]	Chief Louise Hillier Caldwell First Nation P.O. Box 388 Leamington, Ontario N8H 3W3 Ph: (519) 678-3831 Fax: (519) 322-1533 <a href="mailto:lmh@porchlight.ca">lmh@porchlight.ca</a> <a href="mailto:cfnchief@live.com">cfnchief@live.com</a>
<b>Windsor Essex Métis Council</b>	Windsor, ON  [Windsor Area]	Andrew Good, President 4745 Huron Church Line Windsor, ON N9H1H5 PH: 519-972-1063 TOLL FREE 1-888-243-5148



		<p>FAX: 519-974-3739 <a href="mailto:andrew_j_good@hotmail.com">andrew_j_good@hotmail.com</a> website: <a href="http://www.windsorsexmetis.com">www.windsorsexmetis.com</a></p> <p><u>Other Contact:</u> James Wagar Consultation Assessment Coordinator Lands, Resources and Consultations 222-75 Sherbourne St. Toronto, ON M5A 2P9 Ph: 416-977-9881 Fax: 416-977-9911 Email: <a href="mailto:jamesw@metisnation.org">jamesw@metisnation.org</a></p>
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**Re: St Marys - responses to March 4, 2013 comments** 

**Jamie Hollingsworth** to: Wright, Wesley (ENE)

08/06/2013 02:09 PM

Cc: "Debanjan.Mookerjea@rjburnside.com", "Dave Blake", "Chad Papple", "Kevin McLlwain"

Wesley;

Rather than re-sending the table that was created back in April, I have updated the table to describe how we have implemented changes in the draft TOR. This new table, dated today, should make your review even easier than using the April version. Note that I've kept the column with the April "plans" so you can see what was said at the time (I made one minor edit to shorten the text).

Similarly, the draft TOR that was submitted by email in July was updated to indicate that it is "amended" per your recommendation. To my recollection, there are no other changes. It is probably best to work from this version in any event as it is Burnside's most recent, and the one that has been submitted to HCCC and HDI for review and comment.

If you have any questions about the draft TOR, please feel free to give me a call.

Take Care,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



130806\_Actions to Address MOE Comments on TOR\_032339.pdf



032339\_St. Marys Landfill TOR.pdf

"Wright, Wesley (ENE)"

Good morning, gentlemen. I can't see...

08/06/2013 11:52:41 AM

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>  
To: "jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>, "Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>  
Date: 08/06/2013 11:52 AM  
Subject: St Marys - responses to March 4, 2013 comments

Good morning, gentlemen. I can't seem to locate it – have you the table of responses to the outstanding concerns/comments (in the MOE letter dated March 4, 2013 to CRA) that you can email me? It would expedite my review.

Thanks,

Wesley Wright | Project Officer

**Environmental Approvals Branch | Ministry of the Environment**

2 St. Clair Avenue West, Floor 12A | Toronto ON | M4V 1L5

T 416.325.5500 | TF 1.800.461.6290 | F 416.314.8452 | E [wesley.wright@ontario.ca](mailto:wesley.wright@ontario.ca)



Please consider the environment before printing this email.



Date: August 6, 2013 File No.: 300032339  
 Project: St. Marys Landfill Individual Environmental Assessment

**Table 1: Plan to Address MOE Comments Dated March 14, 2013**

MOE Comment		Initial Plan to Address Comment <sup>1</sup>	Actions Undertaken and Planned to Address Comment per draft TOR <sup>2</sup>
<b>Section 3.0 Description and Purpose of the Undertaking</b>			
1	The calculations are incorrect; one additional year of 1 % growth has been added to each calculation. For example, the estimated fill rate for the year 2017 should be 10,829 cubic metres.	Calculations will be revised.	Revised calculations are presented in Section 2.1.2.
2	Comments received indicate a concern regarding the population growth rate for the Town and the annual fill rate projections. Please ensure that both are considered when finalizing annual fill rate estimates in the EA.	Burnside will review the background data (and calculations used) for estimating the fill rate projections.	These factors have been considered as discussed in Section 2.1.
<b>Section 5.0 Justification for "Focused" EA</b>			
3a	More detail is provided for the rationale of a focused ToR, but there remains no documentation to support why the EA should be "focused," nor why landfill expansion at the existing site is the only feasible landfilling alternative. There is no table indicating how each "alternative to" was scored for the five evaluation criteria—the draft amended ToR simply states that Landfilling was the only "alternative to" that scored Yes for all five criteria. A table summarizing the results of this evaluation (for each alternative and each criterion) is recommended.	<ul style="list-style-type: none"> <li>A table will be created to summarize the evaluation, including how each alternative scored under each criterion.</li> </ul>	The TOR has been updated to provide a more comprehensive discussion and evaluation of alternatives to be considered under the TOR. Table 4.1 and 4.2 in particular summarize the process through which the alternatives were evaluated as well as associated results.
3b	Additionally, there is no record of the December 3, 2009 Public Information Open House boards. The handout (Appendix E.1) has only two pages speaking to "alternatives to" and "alternative methods," with no indication of their relative scoring for each evaluation criterion nor identification of preferred or recommendation alternative.	<ul style="list-style-type: none"> <li>Additional documentation from the Dec. 3, 2009 PIC will be obtained from CRA if possible and included in the TOR.</li> <li>The "alternatives to" and the "alternative methods" tables will be reviewed. If possible the evaluation criteria and relative rankings will be supplied. We anticipate some revisions will be required as discussed in item 4b.</li> </ul>	<p>The documentation included in CRA's November 2012 "Record of Consultation" has been provided in PDF format to the Town (and Burnside). Additionally, the former consultant wrote an email indicating that very few people (beyond Town staff) attended the public information centre (PIC) meeting.</p> <p>Burnside intends to create a new appendix (added to the existing draft TOR dated June 2013) that includes a description of the First Nation consultation efforts that we are currently undertaken and including the previous consultant's statement.</p>
4a	In the response table, you refer to September 18, 2012 and September 25, 2012 St. Mary's Committee-of-the-Whole records. Neither seems to have been provided to EASS.	Records for both meetings will be included in an appendix in the TOR.	These documents are included in the TOR Appendices.

<sup>1</sup> As emailed to Wesley Wright (MOE) by Debanjan Mookerjee (Burnside) on April 23, 2013 (slightly edited for brevity).

<sup>2</sup> Referring to Draft TOR dated June 2013, as emailed to Wesley Wright (MOE) by Jamie Hollingsworth (Burnside) on June 26, 2013.

MOE Comment	Initial Plan to Address Comment <sup>1</sup>	Actions Undertaken and Planned to Address Comment per draft TOR <sup>2</sup>
<p>4b In accordance with Section 4.2.5 of the Code of Practice, were "alternatives to" previously considered during a separate planning or decision-making process? How were "alternatives to" or alternative methods (such as other landfill sites) screened? What environmental or locational factors or restrictions or benefits support a landfill at this location as opposed to another location? What is the performance of the existing landfill and is cost a factor for the proponent? Does the proponent own any other landfill sites which can be considered? If the earlier process had similar provisions to those of the EAA such as:</p> <ul style="list-style-type: none"> <li>• An examination of alternatives;</li> <li>• Regard for the environment and environmental effects;</li> <li>• Public consultation with interested persons such as the public and municipalities;</li> <li>• Ability for the public to inspect the planning document in its entirety;</li> <li>• Approval by a recognized decision-making body in a transparent manner such as municipal council resolution or provincial government policy decision,</li> </ul> <p>then a proponent may propose to limit the discussion of previously examined alternatives. Relevant information previously considered under Master Plans, Growth Plans, Official Plans, Feasibility Studies etc. are examples of documents that could be submitted with a ToR as part of the supporting documentation to support the selection of alternatives for examination in the EA.</p>	<ul style="list-style-type: none"> <li>• We will demonstrate, per 3a, how "alternatives to" and "alternative methods" have been previously screened.</li> <li>• We will describe the environmental and locational factors, restrictions and benefits that support consideration of expanding the existing St. Marys Landfill Site.</li> <li>• Landfill monitoring to date indicates that the St. Marys Landfill Site is performing well.</li> <li>• Cost is a factor for the Town that must be considered.</li> <li>• We will review with the Town any historic, closed landfill sites that may be candidate areas. Further, we will review undeveloped areas of the Town that may be suitable for consideration as a new landfill site.</li> <li>• The evaluation of alternative methods will be further documented to include a more detailed examination of other alternatives including: <ul style="list-style-type: none"> <li>• Do Nothing</li> <li>• Waste diversion;</li> <li>• Thermal technologies;</li> <li>• Shipping waste to another existing landfill;</li> <li>• Consideration of alternative sites for a new landfill in St. Marys;</li> <li>• Or others.</li> </ul> </li> <li>• The Individual Environmental Assessment work completed by the Town prior to O.Reg. 101/07 will be documented (if available).</li> <li>• Master Plans, Growth Plans, Official Plans and similar will be described in the ToR and made available (likely web access). As a single level municipal government, St. Marys is not reliant on others for these plans.</li> </ul>	<ul style="list-style-type: none"> <li>• "Alternatives to" have been evaluated as per the process described in Section 4 of the revised TOR. Alternative methods are described in Section 5.3.2</li> <li>• We have a copy of the Official Plan, which is available to everyone via the Town's web site. This link is provided in Table 5.2. It would be wasteful to include a full paper copy.</li> </ul>
<p>5 Supporting documents could include: comments of support for the project and preferred alternative of expanding the existing landfill submitted during a Public Information Open House; a complete copy of the display boards at the December 3, 2009 Public Information Open House (Appendix E.1 appears to provide only the Information Package given to attendees); Committee-of-the-Whole records; and land-use mapping to support the claim that there is no other suitable area within the Town boundaries for a landfill. If supporting documents are not provided, this may be viewed as insufficient evidence to support the rationale for a "focused EA" approach.</p>	<ul style="list-style-type: none"> <li>• PIC materials will be obtained from CRA, if possible, and included in an appendix. Documents to support the focused EA approach will be included to further justify the preferred alternative.</li> <li>• Additional documentation as described in 3b, 4a and 4b will be provided, including mapping of the Town showing background air photos, zoning, OP or similar data. Air photos are likely to exclude current construction/development, so these will be indicated as well.</li> </ul>	<p>Additional detail is provided in the TOR Appendices C and D.</p>

MOE Comment	Initial Plan to Address Comment <sup>1</sup>	Actions Undertaken and Planned to Address Comment per draft TOR <sup>2</sup>
<b>Section 7.0 Alternative Methods to be Considered</b>		
<p>6 While potential data sources are identified, many of the criteria listed are not suitable evaluation criteria (e.g., waste disposal volume, ability to enhance channel, leachate generation, access road configuration). The criteria and indicators used in the evaluation of alternatives are to relate to the five aspects of the environment as it is defined in the EAA: natural, social, cultural, economic, and built environment. For example, how does "waste disposal volume" relate to net impact on the environment? If this relates to a concern regarding land required for the alternative (e.g., size of landfill), the indicator could be acres of land to be acquired. Section 4.2.7 of the Code of Practice for Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario provides some examples of evaluation criteria and indicators. Comment #12 of the July 4, 2012 EASS provides further examples. It is unclear how many of the criteria listed in the draft amended ToR relate to environmental effects, which aspect of the environment is being affected, and no indicator is provided for each.</p>	<p>Evaluation criteria will be revised to better reflect the natural, social, cultural, economic, and built environment. Criteria will be developed in accordance with the Code of Practice for Preparing and Reviewing Terms of Reference for Environmental Assessments.</p>	<p>Alternative methods are now described in Section 5.3.2. In that section, and earlier sections, we have used the more generic "technical criteria" to describe components intrinsic to the alternatives, or to the alternative methods, that will be evaluated. We have not specified what these "technical criteria" will be given that they will be different for each alternative. We indicate that we will develop the criteria as part of the EA process, and in consultation with the public.</p>
<p>7 Per comment #12c of the July 4, 2012 comments, the ToR should clearly state that the criteria and/or indicators may change and will be further refined in the EA.</p>	<p>The TOR will be updated accordingly.</p>	<p>In Section 3, we have added the statement:  <i>As the assessment progresses, the scope of, and need for, the EA may change.</i>  We have made similar statements elsewhere in these TOR as well.</p>
<p>8 Please describe the "pair-wise comparison process" that is expected to be used for the evaluation of "alternative methods". What pairs will be compared? Why only pairs instead of all of the alternatives concurrently? Will the comparison be binary (e.g., yes/no), comparative (more/less) or scaled? Further elaboration and clarification is required for the reader to understand this comparison process, in part because it does not seem to be one that is commonly used.</p>	<p>A pair-wise comparison of four alternatives would compare 1-2, 1-3, 1-4, 2-3, 2-4 and 3-4 as to which is preferred between each pair for a certain criteria. The alternative that wins the most comparisons would be the best for that criteria. Weightings of criteria can be applied (i.e., groundwater protection is 2x more important than level of service) and overall scores developed for each alternative.</p> <p>Burnside must still review CRA's previous efforts in this regard to determine how best to proceed. A pair-wise comparison process is but one of the Decision Support Systems (DSS, sometimes called Decision Support Methodology) that may be used. Some aspects of the EA review may be better suited to particular DSS based on the kind of data, i.e., qualitative or quantitative, that is to be compared. Burnside will review available criteria developed by the Town and CRA during previous public consultation efforts. During the EA public consultation effort, we will define or refine these criteria. The EA document will include discussion supporting the evaluations of "alternative methods", to be clear, logical and traceable.</p> <p>Burnside will provide examples of the comparison processes such that we the reader can understand each type. As noted in Comment 7, the evaluation criteria may change and will be further refined during the EA process.</p>	<p>Discussion of the comparison process has been spread among the alternatives that are being considered. This is described in Section 5.3 and other areas of the document as well.</p> <p>We have removed specific mention of the pair-wise comparison process.</p>

MOE Comment	Initial Plan to Address Comment <sup>1</sup>	Actions Undertaken and Planned to Address Comment per draft TOR <sup>2</sup>
<b>Section 9.1.1.1 Geology/Hydrogeology</b>		
<p>9 Due to comments provided by M. Harris, MOE Regional Hydrogeologist, on December 3, 2012, please include a commitment to develop the hydrogeologic studies in consultation with MOE. Mr. Harris stated that an overview of the planned additions to the monitoring strategy (additional groundwater investigations) would have been helpful, because it would help MOE to identify any concerns ahead of time and to help the Town to optimize the installation of new instrumentation.</p>	<p>Hydrogeological studies will be developed in consultation with MOE. A commitment to this will be stated in the TOR.</p>	<p>We are adding a note on Table 5.3 that reads:  <i>The Town is committed to developing any hydrogeologic studies in consultation with MOE. This may include additional instrumentation at the Town's existing landfill site to help determine its suitability to be expanded.</i></p>
<p>10 On December 12, 2012, J. Arthur, MOW Source Protection Planner, stated that the Site is situated within a Significant Groundwater Recharge Area. Please amend the sentence referring to source protection to state that the Upper Thames River Source Protection Area Assessment Report and Source Protection Plan will be considered during the EA.</p>	<p>An appropriate amendment will be made in the TOR and the EA will provide due consideration to the report and plan.</p>	<p>Table 5.3 summarizes the type of information to be collected from background information sources for each of the Alternatives under review.</p>
<b>Section 9.1.1.2 Surface Water</b>		
<p>11 The first paragraph states that the ditch/swale will be modified (in consultation with MOE and UTRCA), but the third paragraph seems to read that no changes are proposed to the ditch/swale (at the location of its exit from the Site, nor upstream/downstream of the Site). In a December 4, 2012 email to me, you indicate that the drain will be relocated and that:</p> <p style="padding-left: 40px;">The proposed relocated drain location is along that where the drain enters the Site on the eastern property turn the drain to run north adjacent to the eastern property and then west along the northern property limit and join back up to the existing drain prior to the current drain exit from the Site. The relocated drain would be at the perimeter of the Site and away from the disposal area. The expanded landfill footprint is proposed for the southeastern portion of the Site. The site entrance, composting, recycling, etc. will be moved to the northern west portion of the Site. Part of the EA will be to refine the site design components based on the studies conducted during the EA.</p> <p>It is confusing to the reader (1) if there will be any modifications to this surface water feature, and (2) what the proposed nature of those modifications happens to be. Please clarify this.</p>	<p>Burnside needs to undertake further review of the drain realignment. Our current understanding is that this realignment is needed for the existing, ongoing operation of the landfill site. It may therefore be more appropriately dealt with through the Drainage Act. If the realignment is to accommodate landfill expansion, it will be considered as a design element in the EA. References to the realignment should be removed from the ToR in either case. This will avoid confusion to the reader.</p> <p>Burnside will review the previous consultation effort with respect to the drain realignment. We may recommend clarification be provided, through a new PIC or by other means, so that the public is aware of the change to the ToR.</p>	<p>The addition of alternatives beyond expansion of the existing landfill site have lead Burnside to provide a more general description of the existing environment (Section 5.5). The relocation of the existing municipal drain is not dependent upon the Alternative that is selected through this EA process. We have therefore removed specific discussion in these TOR. Per the general description provided, if an alternative requires relocation of the drain, then the environmental effects of such a relocation effort will be accounted for in the EA process.</p>
<b>Section 9.1.3.1 Cultural Heritage Resources</b>		
<p>12 In response to comments received by D. Minkin, Heritage Planner on December 21, 2012, please remove the text "almost completely" to reflect simply that the Site Study Area has been disturbed by landfilling and industrial activities.</p>	<p>Text will be changed accordingly. The EA effort will define the extent of disturbed area.</p>	<p>This comment has been removed. In Sections 4.1, 5.5 and 5.6 we have identified that cultural (and archaeological) components of the environment will be studied relative to the alternatives (export and existing site expansion).</p>
<b>Section 11.2 EA Consultation Program</b>		
<p>13 Principle #6 states that the EA consultation program will include meetings with Aboriginal communities, but this is not reflected in the proposed activities. Please revise activity #9 to also reflect the request for meetings rather in addition to commenting on draft documents disseminated for review.</p>	<p>Activity #9 will be revised accordingly.</p>	<p>This is now Section 6.3.5 of Burnside's report. We have added:</p> <ul style="list-style-type: none"> <li>• Additional consultation (e.g. meetings with Chief and Council, community meetings, etc.), as required based on interest.</li> </ul>

MOE Comment	Initial Plan to Address Comment <sup>1</sup>	Actions Undertaken and Planned to Address Comment per draft TOR <sup>2</sup>
<b>Section 12 EA Work Plan</b>		
<p>14 Per comment #16 of the July 4, 2012 comments: for the EA, a section describing consultation on the EA and its results should be provided within the EA and not in an additional stand-alone document submitted with the EA. As such, please delete the text "<i>Record of Consultation</i>", which will accompany and support the EA Report, which appears twice in the section. The sentence succeeding it should read "The EA will include a section describing consultation on the EA and its results."</p>	<p>Consultation undertaken during the EA will be documented within the EA itself and not in a separate document. The TOR will be updated to reflect this.</p>	<p>CRA's Section 12, EA Work Plan, has been moved into Burnside's Section 5, which describes the methodology to be used during the EA process. Public consultation efforts are now combined elsewhere in Burnside's document (as below). We have revised the text overall, meaning that the suggested wording did not fit, though the intention of that wording is contained in the Section.</p> <p>CRA Section 11, Consultation Program, is now provided in Sections 6 (EA program consultation) and 9 (TOR program consultation) of Burnside's document. For the TOR consultation, we intend to use CRA's November 2012 <i>Record of Consultation</i>. For the EA program, Section 6.4 now describes the reporting that will be provided in the EA report.</p>
<b>General Comments</b>		
<p>15 The opening paragraph defines the Town of St. Marys landfill site as "Site." But there are numerous other references throughout the document other than this, including: St. Marys Landfill, existing St. Marys Landfill Site, existing landfill Site, etc. It is recommended that you simply use Site throughout for consistency. In Section 16.0, the term is defined once again.</p>	<p>The definition of the "Site" will be clarified and used in a consistent manner throughout the TOR document.</p>	<p>With a revised focus of the EA, to include disposal at "export sites", we are less reliant upon the definition of "Site" to mean the Town's existing landfill site.</p> <p>There is no longer a Section 16. We have revised the numbering of Sections to better group related ideas.</p>
<p>The EASS is of the view that the additions and modification to the ToR outlined above should be undertaken prior to submission of the amended ToR. As such, please made the suggested modifications to the document and resubmit to me for review, to ensure that the changes have been made. I ask that this be done prior to submission of the amended ToR to the minister because failing to make these changes may affect the ability of the minister to approve the document in its current state.</p>	<p>The revised TOR will be submitted to Welsey Wright prior to submission to the Minister.</p>	<p>Draft document has been prepared and reviewed with the Town. Burnside has incorporated the Towns comments into the draft TOR, and we have submitted the draft TOR to the Ministry. Coinciding with this, Burnside has, on the Town's behalf, undertaken efforts to discuss the draft TOR with HCCC and HDI.</p>





St. Marys landfill - comments on draft ToR

Wright, Wesley (ENE)

to:

Debanjan.Mookerjea@rjburnside.com

08/26/2013 06:08 PM

Cc:

"Dave Blake (dblake@town.stmarys.on.ca)", "Lashbrook, Ross (ENE)",

"jamie.hollingsworth@rjburnside.com"

Hide Details

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>

To: "Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>,

Cc: "Dave Blake (dblake@town.stmarys.on.ca)" <dblake@town.stmarys.on.ca>,

"Lashbrook, Ross (ENE)" <Ross.Lashbrook@ontario.ca>,

"jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>

History: This message has been replied to and forwarded.

#### 1 Attachment



EASS Comments on draft amended ToR\_130826.doc

Good afternoon, Debanjan. As discussed earlier today with Jamie, attached please find EASS's comments on the June 2013 draft amended ToR for the Town of St. Marys waste management capacity expansion EA. Per Ontario Regulation 616/98 (Deadlines Regulation), and as discussed this afternoon, your current timeout request expires this Friday (August 30, 2013).

Thanks,

Wesley Wright | Project Officer

**Environmental Approvals Branch | Ministry of the Environment**

2 St. Clair Avenue West, Floor 12A | Toronto ON | M4V 1L5

T 416.325.5500 | TF 1.800.461.6290 | F 416.314.8452 | E wesley.wright@ontario.ca



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**Ministry of  
the Environment**

Environmental Approvals  
Branch

2 St. Clair Avenue West  
Floor 12A  
Toronto ON M4V 1L5  
Tel.: 416 314-8001  
Fax: 416 314-8452

**Ministère de  
l'Environnement**

Direction des autorisations  
environnementales

2, avenue St. Clair Ouest  
Étage 12A  
Toronto ON M4V 1L5  
Tél : 416 314-8001  
Télééc. : 416 314-8452



August 26, 2013

**MEMORANDUM**

**TO:** Debanjan Mookerjea  
Corporate Business Manager  
R.J. Burnside International Limited

**FROM:** Wesley Wright  
Project Officer  
Environmental Approvals Branch

**RE:** Review of the Draft Amended Terms of Reference for the Town of St Marys  
Landfill Site Capacity Expansion Environmental Assessment  
EA FILE NO. 02-08-01

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Thank you for submitting the above referenced Terms of Reference (ToR), which was received on June 8, 2013 by the Environmental Assessment Services Section (EASS).

The amendments made to this ToR are largely in response to discussions with EASS staff and to the March 4, 2013 EASS comments on the draft amended ToR provided to Conestoga-Rovers & Associates, the previous consultants for this project. Included with the June 2013 amended draft ToR was a table indicating how the March 4, 2013 comments have been addressed.

The EASS has reviewed the draft amended ToR as it relates to the March 4, 2013 EASS comments on the draft amended ToR. The EASS offers the following comments for your consideration when finalizing the amended ToR for formal submission.

**Section 1.0 – Introduction**

1. “Terms of Reference” refers to the documents and should accordingly be singular, not plural (e.g., *this TOR*, not *these TOR*). The opening sentence is correct, but the rest of the document requires revision.

**Section 2.0 – Description and Purpose of the Undertaking**

2. “Cubic metres” is used in this section but “m<sup>3</sup>” is used elsewhere in the document; please be consistent.

3. What will be the total municipal solid waste management capacity required for the project over the forty-year time horizon? Is the 535,000 m<sup>3</sup> stated in section 1.0 the *additional* capacity required, or does that include the rated capacity of the existing municipal landfill? It is unclear to the reader.
4. Section 2.1.2: It is not clear to the reader why a 1% increase in annual fill rate was used for planning purposes. If it is because of the average population growth rate of approximately 1% per year (from section 2.1.1), and it is assumed that there is a perfect correlation between fill rate and population rate, then clearly state so.
5. The ToR states that records from the past four years indicate a large fluctuation in annual fill rates (9,800 to 17,300 m<sup>3</sup>). In light of this, a one percent annual increase and/or using the 2009 annual fill rate of 10,000 m<sup>3</sup> may seem conservative and result in an underestimation of future annual fill rates. You may wish to revisit your fill rate projections and/or consider strengthening the rationale for using the values that you have.
6. Page 8, paragraph 1: This paragraph is confusing. Please clarify that in 2005 the Town initiated an e-waste collection program for landfill diversion, thereby banning the disposal of e-waste in the landfill.
7. The following paragraph states MSHW instead of MHSW.
8. The Problem Statement is vaguely worded: how is “appropriate” defined? You may wish to clarify this in a manner that allows for greater transparency of selection criteria (e.g., cost-effective, technologically feasible, economically feasible, etc.).

### **Section 3.0 – The Environmental Assessment Process**

9. The ‘TOR’ acronym is defined on page 11, but has already been defined earlier in the document, on page 1.
10. Figure 3.1: by “preliminary technical assessments,” I assume you are referring to existing conditions reports. If so, these are to be completed prior to the completion of the evaluation of alternatives – environmental effects cannot be determined until the existing conditions are first known.

### **Section 4.0 – Alternatives to be Assessed**

11. The “enhanced waste diversion” Alternative To was screened to be “partially preferred.” As such, it should also be identified as an Alternative To that will be carried forward. If the rationale for failing to do so is because it cannot alone address the Problem Statement, then this should be overtly stated. This comment also applies to section 5.3.1.
12. Table 4.2 indicates that the Energy From Waste alternative was screened out because it failed to address the Problem Statement. See Comment 8; how does this alternative fail to “appropriately” address the Town’s solid waste management needs for the next 40 years?

### **Section 5.0 – EA Methodology**

13. You may wish to number the pages of Table 4.2, but at any rate, there is no page 15 to this document.
14. Table 5.1 indicates Green Lane Landfill, but Figure 5.2 indicates Greenlane Landfill. Please use the correct name.
15. Per section 4.2.7 of the ToR Code of Practice, the ToR should usually include evaluation criteria, indicators and potential data sources—examples of which are

- provided. I have provided you with the appendix of an approved ToR which includes this information. Please be sure to include evaluation criteria for each of the five aspects of the environment: natural, social, economic, cultural, and built.
16. Section 5.3.1: the title of Stage 1 is the same as that of Stage 2 (Evaluation of Alternatives To). Please use a different title for each to delineate the two stages as being different from one another.
  17. Table 5.2: “At or near the expanded landfill” assumes that expansion of the existing landfill will be the preferred alternative. Because this evaluation has not yet been conducted, this can be perceived as predetermining the outcome of the EA. As such, please removed the word “expanded” from the third column of the table (and anywhere else, as applicable).
  18. Section 5.4.1: Figure 5.4 is referenced but is not in the ToR. It is not the same as Figure 5.3 because Figure 5.3 does not include potential haul routes between the Town and potential receiving landfills in other jurisdictions.
  19. Sections 5.6, 5.7 and 5.8: Potential effects and corresponding mitigation measures are to be considered for Alternative Methods, as well as the preferred undertaking and the Alternatives To. Please revise the text (including that in section 5.3) to reflect this. If your evaluation of alternatives (using the evaluation criteria/indicators—see comment 15) will be that for post-mitigation, please ensure this is clearly stated, and presented in the evaluation.
  20. Section 5.9: “section 0” is referenced – please correct this.
  21. The Alternative To “increase waste diversion” was identified as being carried forward for consideration (as complementary to another Alternative To, since it is unable to address the problem on its own), but it is not mentioned in Section 5. Please ensure the ToR reflects this Alternative To being carried forward and considered during the EA. You may wish to elaborate on the capacity in which it will be evaluated. If it is to reduce waste generation rates, then would this not result in a reduction of the waste management capacity required for the Project and/or an increase to the Project’s time horizon?
  22. Figure 5.3: the “local study area” identified in this figure is not defined in the ToR. It cannot be the same as the “initial study area” because, as stated in section 5.4.1, it includes more than just the land proximal to the existing landfill.

## **Section 6.0 – EA Consultation Program**

23. Section 6.3: the omission of “and meetings” from the Aboriginal consultation bullet, which is present for that of Agency consultation, leads the reader to believe that no meetings with Aboriginal communities will be considered for the EA. Subsections 6.3.4 and 6.3.5 clarify this. You may wish to remove confusion by either deleting “and meetings” for the Agency consultation bullet, or adding this to the Aboriginal consultation bullet.
24. Section 6.3.3: For consistency with the bulleted activities in section 6.3, please add “Project” to the start of this subsection heading.
25. Page 33, first bullet: please consider adding “and/or e-mails” after follow-up phone calls; e-mail provides another means of follow-up with Aboriginal communities.
26. Section 6.4, second paragraph: please mention that the EA Report will also include any commitments made to address the comments that were raised. In addition, you may wish to clarify that it is the EA Report and not simply the EA that will include a summary of consultation activities, as well as comments raised and how they were addressed.

27. Per section 4.2.9 of the ToR Code of Practice, the EA Consultation Plan should also include a discussion of how input from interested persons will be obtained. I don't see mention of this in the June 2013 draft ToR.

### **Section 7.0 – EA Compliance Monitoring**

28. Please delete “A strategy and schedule for completing” from the text. The compliance monitoring plan, and not simply a strategy and schedule for its completion, is to be developed during the EA.

### **Section 9.0 – Terms of Reference Consultation**

29. With no additions having been made to the Record of Consultation submitted in November 2012, this indicates to the reader that no consultation activities have been engaged in since that time. Because you have been in contact with, at a minimum, MOE (for timeout requests, comments on draft ToR, etc.), you are required to ensure that the Record of Consultation is up to date by including that correspondence—in addition to any correspondence and communications with other agencies, Aboriginal communities or members of the public concerning this project since the time of the November 2012 proposed ToR submission.
30. It is unclear why two different terms/acronyms (PIC and PIOH) are used for open houses (pages 32 and 37). Please consider using only one term to avoid confusion.

### **Section 11.0 – Flexibility of the Terms of Reference**

31. Paragraph 2: you may wish to clarify the second sentence (“It is therefore possible that in...”) by adding “as a result of changing circumstances between the time of writing the terms of reference and preparation of the EA.”
32. The use of “insignificant” as a qualifier is advised against; it is difficult to define/determine, and there may be changes required that may result in environmental effects that are more than insignificant. The purpose of the flexibility clause is simply to allow for the framework to adapt to new circumstances that may unfold during the EA that were not anticipated during the writing of the ToR, such that the EA remains compliant with the approved ToR.

### **Appendix C – EFW Technical Memorandum**

33. The footnotes do not align with the footnote references on each page (e.g., footnote 7 reference is on page 3, but footnote 7 is on page 4).
34. The word “adaptation” is used in sections 4.2 and 6.0, when I believe it should read “adoption.”
35. Section 4.2: “...which could limit the Town’s future options.” Future options for what? The text is unclear.
36. Page 4, paragraph 1: “they Town” should read “the Town.”
37. Section 5.2.1, paragraph 2: For increased readability, you may wish to insert a period after “related to particle size.” In addition, 2.5 micron particles pose a greater risk of impact than what? And what sort of impact? Please edit “claims exists” to “claims exist.”
38. Section 6.0, paragraph 1: “It was highlighted that the technology...” – where was this highlighted? There is no reference; please add one. Additionally, please tie in

how community size is a factor to capital costs. Do you mean the community size (and therefore the tax base) of St. Marys?

#### **Appendix D – Possible New Landfill Sites within the Town**

39. Section 2.0: I'd understood that the proposed expansion is for an additional 535,000 m<sup>3</sup>, rather than for a total volume of 535,000 m<sup>3</sup>. If this is correct, please revise the text accordingly.
40. Table 1: There are two different slopes (4:1 and 20:1) both sharing the same parameter, maximum slope. Is one of them the minimum slope?
41. You may be able to locate a new landfill site within WHPA-C or WHPA-D. If memory serves, owing to their lower vulnerability score, a threat could never be more than moderate. Please check the local Source Protection Plan(s) to see if there are any policies governing prescribed activities to which the proposed undertaking may apply. You may contact the local Source Protection Authority (conservation authority) for this information.
42. Section 3.2: Where is it recommended, and by whom, that the landfill setback is 100 metres from natural features? Please include the appropriate reference here.
43. As discussed earlier in the month, please also be sure to revise Figure 1 (constraints mapping) to more clearly identify possible sites for a new landfill within the Town, including the size of each (in hectares).

---

The EASS is of the view that the additions and modification to the ToR outlined above should be undertaken prior to submission of the amended ToR. As such, please consider making the suggested modifications to the document and resubmitting to me for review, to ensure that the changes have been made. Failing to make these changes may affect the ability of the minister to approve the document in its current state.

Should you have any questions, please contact me by phone at 416-325-5500 and/or email at [wesley.wright@ontario.ca](mailto:wesley.wright@ontario.ca).



---

Wesley Wright

- c. Ross Lashbrook, A/Manager, Environmental Assessment Services Section  
Dave Blake, Town of St. Marys



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

**Attachment E4a**

**Agency TOR Review**



November 15, 2013

Via: Courier

Canadian Transportation Agency - Rail, Air and Marine Disputes Directorate  
15 Eddy Street  
Gatineau QC K1A 0N8

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment**  
File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an Individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
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We are enclosing with this letter a DVD-R that contains a searchable PDF copy of this TOR. Should you require a paper copy for your review, please use the attached fax-back form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
406 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B9  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1485 Pickering Parkway, Suite 200  
Pickering, ON L1V 7G7  
Phone: 905-420-5777 Ext. 903  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

cc: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1485 Pickering Parkway, Suite 200 Pickering, ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - - Fax: ( ) -  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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St Marys  
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**Shipment Date**  
2013-11-15  
**To**  
Canadian Transportation Agency  
Mr. Luc Fortin  
15 Eddy Street  
GATINEAU, Quebec  
Canada, K1A0N9

**Created**  
2013-11-15 05:16 PM  
**From**  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(805)420-5777 x800

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**Package Type** Express Envelope  
**Number of pieces** 1  
**Premium Service** Purolator Express Envelope  
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**Declared Value** \$0.00  
**Bill To** Sender  
**Dangerous Goods** No  
**Chain Of Signature** No  
**OSNR-Signature Not Required** No  
**Residential Delivery Signature Required** No

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**Tax** \$0.00  
**Total** \$0.00

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Agency  
Luc Fortin

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<b>Shipment Date</b>	Nov 15, 2013		

**History**

Date	Local Time	Location	Description
Nov 18, 2013	8:50 a.m.	Hull, PQ	Shipment delivered to SYLVAIN at: MAIL ROOM
Nov 18, 2013	7:45 a.m.	Hull, PQ	On vehicle for delivery
Nov 15, 2013	8:28 p.m.	Pickering, ON	Picked Up by Purolator at Pickering ON
Nov 15, 2013	5:21 p.m.	Purolator	Shipping label created

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Packages 1 to 1 of 1



November 15, 2013

Via: Courier

Department of Fisheries and Oceans Canada - Southern Ontario District  
District Office, 3027 Harvester Road  
Unit 304  
Brimington ON L7R 4K3

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment**  
File No.: 300032339.0000

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 598  
St. Marys, ON N4X 1B5  
Phone: 519-294-2340 Ext. 209  
Fax: 519-294-0902  
Email: dblake@town.stmarys.on.ca

Jamie Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6K5  
Phone: 905-420-5777 Ext. 903  
Fax: 905-420-5247  
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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	Jamie R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
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 3027 Harvester Road  
 District Office  
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 From R. J. Burnside  
 Jamie Hollingsworth, P.Eng.  
 1465 PICKERING Parkway  
 Suite # 200  
 PICKERING, Ontario  
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Shipment Date	Nov 15, 2013		

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Date	Local Time	Location	Description
Nov 18, 2013	10:52 a.m.	Burlington, ON	Shipment delivered at RECEPTION
Nov 18, 2013	7:01 a.m.	Burlington, ON	On vehicle for delivery
Nov 16, 2013	9:50 p.m.	Toronto Sort Center TR, ON	Arrived at sort facility
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Nov 15, 2013	6:27 p.m.	Purolator	Shipping label created

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330019369793	Nov 18, 2013	Delivered

Packages 1 to 1 of 1



November 15, 2013

Via: Courier

Environment Canada - Ontario Region  
867 Lakeshore Road  
P.O. Box 5050  
Burlington ON L7R 4A6

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The Corporation of the Town of St. Marys  
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Phone: 519-294-2340 Ext. 209  
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James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, ON L1V 6H3  
Phone: 905-420-5777 Ext. 803  
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James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_ .ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## View Shipment Details

*Agency*



Shipment Date  
2013-11-15  
To  
Environment Canada - Ontario R  
Mr. Rob Dobos  
867 Lakeshore Road  
BURLINGTON, Ontario  
Canada, L7R4A6

Created  
2013-11-15 05:25 PM  
From  
R. J. Eumside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite #200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330019371484	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00

Hold For Pickup (receiver will pick up shipment) No  
Declared Value \$0.00  
Bill To Sender  
Dangerous Goods No  
Chain Of Signature No  
OSNR-Signature Not Required No  
Residential Delivery Signature Required No

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.

**Purolator**

*Agency - Rob Dobos*

## Tracking Details

Shipment Status

Package Status  
Package Tracking Number: 330019371484 [View proof of delivery and signature](#)  
**Delivered**  
Monday, November 18, 2013 9:00 a.m.  
Received By: James

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Burlington, ON, CA
Shipment Date	Nov 15, 2013		

**Shipment Summary**  
Tracking # Deliver By Status  
330019371484 Nov 18, 2013 Delivered  
Packages 1 to 1 of 1

History			
Date	Local Time	Location	Description
Nov 18, 2013	9:00 a.m.	Burlington, ON	Shipment delivered to JAMES at SHIP DOCK
Nov 18, 2013	7:02 a.m.	Burlington, ON	On vehicle for delivery
Nov 15, 2013	9:49 p.m.	Toronto Sort Center-Tri, ON	Arrived at sort facility
Nov 15, 2013	8:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	8:27 p.m.	Purolator	Shipping label created



November 15, 2013

Via: Courier

Transport Canada - Ontario Region (PHE) Environment and Engineering  
4800 Yonge Street  
North York ON M2N 6A5

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an Individual Environmental Assessment (IEA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity;
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities; and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's website, <http://www.stmarys.com>. You can find it by clicking on the scrolling banner or going to the *Town Services, Garbage and Recycling* page.

We are enclosing with this letter a DVD-R that contains a searchable PDF copy of the TOR. Should you require a paper copy for your review, please use the attached tax-back form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-254-0800  
Email: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 8H3  
Phone: 905-420-5777 Ext. 603  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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

Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

023339 TOR Availability - Agencies.docx  
15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng., Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	<a href="mailto:james.hollingsworth@rjburnside.com">james.hollingsworth@rjburnside.com</a>

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_

Phone: ( ) - - Fax: ( ) - -

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

023339 TOR Request Form.docx 15/11/2013 10:02 AM

Agency

### View Shipment Details



#### Shipment Date

2013-11-15  
To  
Transport Canada - Ontario Reg  
4900 YONGE ST  
NORTH YORK, Ontario  
Canada, M2N6A5

#### Created

2013-11-15 05:30 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada. L1V7G7  
1-(905)420-5777 x800

PIN 330018375402  
Ship Type Regular  
Package Type Express Envelope  
Number of pieces 1  
Premium Service Purolator Express Envelope

Adjusted Weight 1.00 lb  
Transit Time (days) 1  
Cost \$0.00  
Tax \$0.00  
Total \$0.00

Hold For Pickup (receiver will pick up shipment) No  
Declared Value \$0.00  
Bill To Sender  
Dangerous Goods No  
Chain Of Signature No  
OSNR-Signature Not Required No  
Residential Delivery No  
Signature Required

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



Agency  
Transport Canada

### Tracking Details

#### Shipment Status



Package Status  
Package Tracking Number: 330018375402 [View proof of delivery and signature](#)

**Delivered**  
Monday, November 18, 2013 8:58 a.m.  
Received by: Hossain

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	North York, ON, CA
Shipment Date	Nov 15, 2013		

**History**

Date	Local Time	Location	Description
Nov 18, 2013	8:58 a.m.	Toronto (east/est), ON	Shipment delivered to HOSSIAN at MAIL ROOM
Nov 18, 2013	8:01 a.m.	Toronto (east/est), ON	On vehicle for delivery
Nov 15, 2013	8:44 p.m.	Toronto Sort Center TR, ON	Arrived at sort facility
Nov 15, 2013	8:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	5:35 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330018375402	Nov 18, 2013	Delivered

Packages 1 to 1 of 1



November 15, 2013

Via: Courier

Hydro One Networks Inc.  
483 Bay Street  
North Tower, 15th Floor  
Toronto ON M5G 2P5

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has authorized the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity,
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- describe the evaluation criteria, indicators and data source that will be used during the EA process.

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We are enclosing with this letter a DVD-R that contains a searchable PDF copy of the TOR. Should you require a paper copy for your review, please use the attached fax back form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@townofstmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste\_EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the TOR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by November 30, 2013 to:	
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_



View Shipment Details

Agency



Shipment Date  
2013-11-15  
To  
Hydro One Networks Inc.  
Walter Kloostr  
483 BAY ST  
Floor # 15  
TORONTO, Ontario  
Canada, M5G2P5

Created  
2013-11-15 05:27 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330019372748	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
CSNR-Signature Not Required	No		
Residential Delivery Signature Required	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



Agency  
Walter Kloostr

Tracking Details

Shipment Status



Package Status  
Package Tracking Number: 330019372748 [View proof of delivery and signature](#)

**Delivered**  
Monday, November 18, 2013 8:51 a.m.  
Received By: Corau

Service	Purolator Express Envelope	From	Pickering, ON, CA
To		To	Toronto, ON, CA

Est. Shipment Weight: 1 lb.  
Est. Shipment Date: Nov 15, 2013

History

Date	Local Time	Location	Description
Nov 18, 2013	8:51 a.m.	Toronto (Dundas/John Vile), ON	Shipment delivered to CCNSU at MAIL ROOM
Nov 18, 2013	8:36 a.m.	Toronto (Dundas/John Vile), ON	On vehicle for delivery
Nov 16, 2013	8:49 p.m.	Toronto Sort Ctr/Sc Tri, ON	Arrived at sort facility
Nov 15, 2013	8:29 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	8:27 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330019372748	Nov 18, 2013	Delivered

Packages 1 of 1



November 15, 2013

Via: Courier

Ministry of Agriculture, Food and Rural Affairs- West-Central Region  
6484 Wellington Road 7  
Unit 10  
Eloia ON N0B 1S0

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment**  
File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 988  
St. Marys, ON N4X 1B8  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@townofstmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
13/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - - Fax: ( ) - -  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
032339 TOR Request Form.docx 18/11/2013 10:02 AM

Agency

### View Shipment Details



**Shipment Date**  
 2013-11-15  
**To**  
 Ministry of Agriculture, Food  
 Carol Neumann  
 6484 Wellington Road 7  
 Floor # 10  
 ELORA, Ontario  
 Canada, N0B1S0

**Created**  
 2013-11-15 05:28 PM  
**From**  
 R. J. Burnside  
 Jamie Hollingsworth, P.Eng.  
 1455 PICKERING Parkway  
 Suite # 200  
 PICKERING, Ontario  
 Canada, L1V7G7  
 1-(905)420-5777 x800

<b>PIN</b>	330019374009	<b>Adjusted Weight</b>	1.00 lb
<b>Ship Type</b>	Regular	<b>Transit Time (days)</b>	1
<b>Package Type</b>	Express Envelope	<b>Cost</b>	\$0.00
<b>Number of pieces</b>	1	<b>Tax</b>	\$0.00
<b>Premium Service</b>	Purolator Express Envelope	<b>Total</b>	\$0.00
<b>Hold For Pickup (receiver will pick up shipment)</b>	No		
<b>Declared Value</b>	\$0.00		
<b>Bill To</b>	Sender		
<b>Dangerous Goods</b>	No		
<b>Chain Of Signature</b>	No		
<b>OSNR-Signature Not Required</b>	No		
<b>Residential Delivery</b>	No		
<b>Signature Required</b>			

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.

Agency  
Carol Neumann



### Tracking Details



**Package Status**  
 Package Tracking Number: 330019374009 [View proof of delivery and signature](#)

**Delivered**  
 Monday, November 18, 2013 9:31 a.m.  
 Received By: Ora

Service	Purolator Express Envelope	From To	Pickering, ON, CA Elora, ON, CA
Est. Shipment Weight	1 lb.		
Shipment Date	Nov 15, 2013		

**History**

Date	Local Time	Location	Description
Nov 18, 2013	9:31 a.m.	Guelph, ON	Shipment delivered to ORA at RECEPTION
Nov 18, 2013	8:05 a.m.	Guelph, ON	On vehicle for delivery
Nov 16, 2013	5:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	9:27 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330019374009	Nov 18, 2013	Delivered

Packages 1 of 1



November 15, 2013

Via: Courier

Ministry of Infrastructure - Ontario Growth Secretariat, Growth Policy, Planning and  
Analyse Branch  
777 Bay Street  
4th Floor, Suite 425  
Toronto ON M5G 2E5

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment**  
File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Term of Reference (ToR) for an Individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Deve Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 Jemee Street South, P.O. Box 998  
St. Marys, ON N4X 1B5  
Phone: 519-294-2540 Ext. 209  
Fax: 519-294-0902  
Email: dblade@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, ON L1V 6H5  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-6247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Weeley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

092339 TOR Availability - Agencies.docx  
15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

View Shipment Details

*Agency*



Shipment Date  
2013-11-15  
To  
Ontario Growth Secretariat  
Planning and Analyst  
Andrew Theoharis  
777 BAY ST  
Floor # 4 Suite # 425  
TORONTO, Ontario  
Canada, M5G2E5

Created  
2013-11-15 05:33 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330019377580	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery Signature Required	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.

*Ministry of Agency Infrastructure/Ontario*



Tracking Details

Shipment Status

Package Status

Package Tracking Number 330019377580

[View proof of delivery and signature](#)



Delivered

Monday, November 18, 2013 9:54 a.m.

Received By: Lynn

Service	Purolator Express Envelope	From	Pickering, ON, CA
To		To	Toronto, ON, CA
Est. Shipment Weight	1 lb.		
Shipment Date	Nov 15, 2013		

History

Date	Local Time	Location	Description
Nov 18, 2013	9:54 a.m.	Toronto (dwn/scr/Ville),ON	Shipment delivered to LYNN at RECEPTION
Nov 18, 2013	7:22 a.m.	Toronto (dwn/scr/Ville),ON	On vehicle for delivery
Nov 18, 2013	6:15 a.m.	Toronto (dwn/scr/Ville),ON	Arrived at sort facility
Nov 18, 2013	6:14 a.m.	Toronto (dwn/scr/Ville),ON	Picked up by Purolator
Nov 16, 2013	9:41 p.m.	Toronto Sort Center Trl, ON	Arrived at sort facility
Nov 16, 2013	6:29 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 16, 2013	6:38 p.m.	Purolator	Shipping label created

Shipment Summary

Tracking #	Deliver By	Status
330019377580	Nov 18, 2013	Delivered
Package: 1 of 1 of 1		



November 15, 2013

Via: **Courier**

Ministry of Municipal Affairs and Housing- Western Municipal Services Office  
659 Exeter Road  
2nd Floor  
London ON N6E 1L3

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity,
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's website, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the *Town Services, Garbage and Recycling* page.

We are enclosing with this letter a DVD-R that contains a searchable PDF copy of the ToR. Should you require a paper copy for your review, please use the attached fax-back form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Bleke, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 968  
St. Marys, ON N4X 1B5  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dbleke@town.stmarys.on.ca

Jamie Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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

Yours truly,

**R.J. Burnside & Associates Limited**

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wilgitt, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_ .ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

View Shipment Details

Agency



**Shipment Date**  
 2013-11-15  
**To**  
 MMAH Western Municipal Ser ON  
 Mr. Bruce Curtis  
 659 Exeter Road  
 Floor # 2  
 LONDON, Ontario  
 Canada, N6E1L3

**Created**  
 2013-11-15 05:36 PM  
**From**  
 R. J. Burnside  
 Jamie Hollingsworth, P.Eng.  
 1465 PICKERING Parkway  
 Suite # 200  
 PICKERING, Ontario  
 Canada, L1V7G7  
 1-(905)420-5777 x800

<b>PIN</b>	330019379438	<b>Adjusted Weight</b>	1.00 lb
<b>Ship Type</b>	Regular	<b>Transit Time (days)</b>	1
<b>Package Type</b>	Express Envelope	<b>Cost</b>	\$0.00
<b>Number of pieces</b>	1	<b>Tax</b>	\$0.00
<b>Premium Service</b>	Purolator Express Envelope	<b>Total</b>	\$0.00

**Hold For Pickup (receiver will pick up shipment)** No  
**Declared Value** \$0.00  
**Bill To** Sender  
**Dangerous Goods** No  
**Chain Of Signature** No  
**OSNR-Signature Not Required** No  
**Residential Delivery Signature Required** No

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



Agency  
Bruce Curtis

Tracking Details

Shipment Status



**Package Status**  
 Package Tracking Number: 330019379438 [View more details](#)

**Delivered**  
 Monday, November 18, 2013 12:53 p.m.  
 Signature not required

<b>Service</b>	Purolator Express Envelope	<b>From</b>	Pickering, ON, CA
<b>Est. Shipment Weight</b>	1 lb.	<b>To</b>	London, ON, CA
<b>Shipment Date</b>	Nov 15, 2013		

**History**

Date	Local Time	Location	Description
Nov 18, 2013	12:53 p.m.	London, ON	Shipment delivered at AT DOOR
Nov 18, 2013	7:25 a.m.	London, ON	On vehicle for delivery
Nov 15, 2013	9:41 p.m.	Toronto Sort Ctr/air Trl, ON	Arrived at sort facility
Nov 15, 2013	6:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	6:27 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330019379438	Nov 18, 2013	Delivered

Packages 1 to 1 of 1



November 15, 2013

Via: Courier

Ministry of Natural Resources- Guelph (Southern Region)  
 1 Stone Road West  
 Guelph ON N1G 4Y2

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment**  
 File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an Individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 988  
 St. Marys, ON N4X 1B0  
 Phone: 519-294-2340 Ext. 209  
 Fax: 519-254-0902  
 Email: dblade@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
 Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
 15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamis.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
 Contact Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Address (2<sup>nd</sup> line): \_\_\_\_\_  
 City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
 Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
 Email: \_\_\_\_\_  
 Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_



View Shipment Details

Agency



Shipment Date  
2013-11-15

To  
Mof NR Guelph Southern Reg.  
Mr. David Marriot  
1 STONE RD W  
GUELPH, Ontario  
Canada, N1G4Y2

Created  
2013-11-15 05:39 PM

From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1485 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330019381731	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery Signature Required	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



Agency  
David Marriot

Tracking Details

Shipment Status



Package Status  
Package Tracking Number: 330019381731 [View proof of delivery and signature](#)

**Delivered**  
Monday, November 18, 2013 8:40 a.m.  
Received By: JARINE

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 Lb.	To	Guelph, ON, CA
Shipment Date	Nov 15, 2013		

History

Date	Local Time	Location	Description
Nov 18, 2013	8:40 a.m.	Guelph, ON	Shipment delivered to JANNIE at RECEPTION
Nov 18, 2013	6:58 a.m.	Guelph, ON	On vehicle for delivery
Nov 15, 2013	8:41 p.m.	Toronto Bort Clark Tr, ON	Arrived at sort facility
Nov 15, 2013	6:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	6:27 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330019381731	Nov 18, 2013	Delivered

Packages 1 to 1 of 1



November 15, 2013

Via: Courier

Ministry of Tourism, Culture and Sport, Culture Service Unit  
401 Bay Street  
Suite 1700  
Toronto ON M7A 0A7

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 988  
St. Marys, ON N4X 1B6  
Phone: 519-294-2240 Ext. 209  
Fax: 519-294-1902  
Email: dbleke@townofstmarye.on.ca

Jamie Hollingsworth  
R.J. Burnside & Associates Limited  
1485 Pickering Parkway, Suite 200  
Pickering, ON L1S 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

Jamie R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Weeley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Avail[ed]ly - Ages[ol]e.docx  
15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1485 Pickering Parkway, Suite 200 Pickering, ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

032339 TOR Request Form.docx 18/11/2013 10:02 AM

View Shipment Details

Agency



Shipment Date  
2013-11-15  
To  
M of T, C and S  
Culture Services Uni  
Ms. Paula Kulpa  
401 BAY ST  
Suite # 1700  
TORONTO, Ontario  
Canada, M7A0A7

Created  
2013-11-15 05:42 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1485 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330019383968	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery	No		
Signature Required			

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



Agency  
Paula Kulpa

Tracking Details

Shipment Status

Package Status  
Package Tracking Number: 330019383968 [View proof of delivery and latest scan](#)

**Delivered**  
Monday, November 18, 2013 7:53 a.m.  
Received By: Judy

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Toronto, ON, CA
Shipment Date	Nov 15, 2013		

History

Date	Local Time	Location	Description
Nov 18, 2013	7:53 a.m.	Toronto (Aurora/Scar. Ville), ON	Shipment delivered to JUDY at MAIL ROOM
Nov 18, 2013	7:07 a.m.	Toronto (Aurora/Scar. Ville), ON	On vehicle for delivery
Nov 15, 2013	1:41 p.m.	Toronto Sort Center Trl, ON	Arrived at sort facility
Nov 15, 2013	8:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	8:27 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330019383968	Nov 18, 2013	Delivered

Packages 1 to 1 of 1



November 15, 2013

Via: Courier

Ontario Power Generation  
700 University Avenue  
Toronto ON M5G 1X6

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

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Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 598  
St. Marys, ON N4X 1B6  
Phone: 519-294-2240 Ext. 209  
Fax: 519-294-4932  
Email: dblake@town.stmarys.on.ca

Jamie Hollingsworth  
R.J. Burnside & Associates Limited  
1485 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
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Yours truly,

R.J. Burnside & Associates Limited

Jamie R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

022339 TOR Availability - Agencies.docx  
15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by November 30, 2013 to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1485 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: (\_\_\_\_) - \_\_\_\_\_ Fax: (\_\_\_\_) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

022339 TOR Request Form.docx 15/11/2013 10:02 AM

Agency

### View Shipment Details



Shipment Date  
2013-11-15  
To  
Ontario Power Generation  
Ms. Susan Rapin  
700 UNIVERSITY AVE  
TORONTO, Ontario  
Canada, M5G1X6

Created  
2013-11-15 05:44 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1485 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada. L1V7G7  
1-(905)420-5777 x800

PIN	330019385815	Adjusted Weight	1.00 lb
Shlp Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery Signature Required	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.

Agency  
Susan Rapin



### Tracking Details



**Packages Status**  
Package Tracking Number: 330019385815 [View proof of delivery and signature](#)

**Delivered**  
Monday, November 18, 2013 8:56 a.m.  
Received By: Robinson

Services	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Toronto, ON, CA
Shipment Date	Nov 15, 2013		

**History**

Date	Local Time	Location	Description
Nov 18, 2013	8:56 a.m.	Toronto (downsview V10), ON	Shipment delivered to ROBINSON at MAIL ROOM
Nov 18, 2013	7:23 a.m.	Toronto (downsview V10), ON	On vehicle for delivery
Nov 18, 2013	6:18 a.m.	Toronto (downsview V10), ON	Arrived at sort facility
Nov 18, 2013	6:15 a.m.	Toronto (downsview V10), ON	Picked up by Purolator
Nov 15, 2013	9:41 p.m.	Toronto Sort Cluster Trl, ON	Arrived at sort facility
Nov 15, 2013	8:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	6:49 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330019385815	Nov 18, 2013	Delivered

Packages 1 of 1



November 15, 2013

Via: **Courier**

Bell Canada, Municipal Operations Centre  
100 Borough Drive  
Floor 5 Blue  
Scarborough ON M1P 4W2

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity.
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's website, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the [Town Services, Garbage and Recycling](#) page.

We are enclosing with this letter a DVD-R that contains a searchable PDF copy of the TOR. Should you require a paper copy for your review, please use the attached fax-back form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 598  
St. Marys, ON N4X 1S5  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L4S 9H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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

Yours truly,

**R.J. Burnside & Associates Limited**

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
19/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

View Shipment Details

*Agency*



Shipment Date  
2013-11-15  
To  
Bell Canada  
Municipal Operations  
Mr. John Lachapelle  
100 BOROUGH DR  
SCARBOROUGH, Ontario  
Canada, M1P4W2

Created  
2013-11-15 05:48 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1466 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330019388066	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery Signature Required	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



*Agency  
John Lachapelle*

Tracking Details

Shipment Status



**Package Status**  
 Package Tracking Number: 330019388066 [View copy of delivery and signature](#)  
**Delivered**  
 Monday, November 18, 2013 9:52 a.m.  
 Received By: ZARA

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Scarborough, ON, CA
Shipment Date	Nov 15, 2013		

**History**

Date	Local Time	Location	Description
Nov 18, 2013	9:52 a.m.	Toronto (eastend), ON	Shipment delivered to ZARA at: SHIP DOCK
Nov 18, 2013	8:04 a.m.	Toronto (eastend), ON	On vehicle for delivery
Nov 15, 2013	5:41 p.m.	Toronto Sort Ctr/CD 7H, ON	Arrived at sort facility
Nov 15, 2013	6:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	5:53 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330019388066	Nov 18, 2013	Delivered

Packages 1 to 1 of 1



November 15, 2013

Via: Courier

Enbridge Gas Distribution Inc.  
500 Consumers Road  
North York ON M2J 1P8

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
405 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@townofstmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 6H9  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
18/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Refrn by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_  
Signature \_\_\_\_\_ Date \_\_\_\_\_



## View Shipment Details

Agency



Shipment Date  
2013-11-15  
To  
Enbridge Gas Distribution Inc.  
Mr. Vince Cina  
500 CONSUMERS RD  
NORTH YORK, Ontario  
Canada, M2J1P8

Created  
2013-11-15 05:49 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330019389650	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery	No		
Signature Required			

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.

Purolator

Agency -  
Vince Cina

## Tracking Details

Shipment Status

### Package Status

Package Tracking Number 330019389650

[View proof of delivery and signature](#)

Delivered  
Monday, November 18, 2013 10:39  
a.m.  
Received By: Kirby

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	North York, ON, CA
Shipment Date	Nov 15, 2013		

### History

Date	Local Time	Location	Description
Nov 18, 2013	10:39 a.m.	Toronto (post/est), ON	Shipment delivered to KIRBY at RECEPTION
Nov 15, 2013	7:47 a.m.	Toronto (est/est), ON	On vehicle for delivery
Nov 15, 2013	5:41 p.m.	Toronto Sort Cluster Trl, ON	Arrived at sort facility
Nov 15, 2013	8:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	5:27 p.m.	Purolator	Shipping label created

### Shipment Summary

Tracking #	Deliver By	Status
330019389650	Nov 18, 2013	Delivered
Packages 1 to 1 of 1		



November 15, 2013

Via: Courier

MTS – Allstream  
 50 Worosster Road  
 Etobicoke ON M9M 5X2

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 938  
 St. Marys, ON N4X 1B6  
 Phone: 519-294-2340 Ext. 209  
 Fax: 519-294-0902  
 Email: dblake@townofstmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
 Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

cc: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
 19/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng., Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering, ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

032339 TOR Request Form.docx 19/11/2013 10:02 AM

Agency

### View Shipment Details



Shipment Date  
2013-11-15  
To  
MTS - Allstream  
50 WORCESTER RD  
ETOBICOKE, Ontario  
Canada, M9W5X2

Created  
2013-11-15 05:54 PM  
From  
R. J. Bumside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330019392449	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery Signature Required	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.

Agency  
MTS - Allstream



### Tracking Details

Shipment Status



Package Status  
Package Tracking Number: 330019392449 [View proof of delivery and signature](#)

**Delivered**  
Monday, November 18, 2013 8:32 a.m.  
Received By: DARA

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Etobicoke, ON, CA
Shipment Date	Nov 15, 2013		

**History**

Date	Local Time	Location	Description
Nov 18, 2013	8:32 a.m.	Toronto (dunwinville Villa), ON	Shipment delivered to DARA at: SHIP DOCK
Nov 18, 2013	7:38 a.m.	Toronto (dunwinville Villa), ON	On vehicle for delivery
Nov 16, 2013	6:41 p.m.	Toronto Sort Center Trl, ON	Arrived at sort facility
Nov 15, 2013	6:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	6:27 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330019392449	Nov 18, 2013	Delivered

Packages 1 to 1 of 1

Agency  
MCS - Allstream

Purolator

Tracking Details

Shipment Status



Package Details  
Package Tracking Number: 9320033266  
View Detail of Shipment

**Delivered**  
Monday, November 18, 2013 8:32 a.m.  
Tracked by: Eric  
Service: Priority Express  
Envelope  
To: Nov 15, 2013  
From: Pickering, ON, CA  
To: St. Marys, ON, CA  
Est. 5 (Retail Weight)  
Shipment Code

Shipment Summary  
Tracking # 9320033266  
Status Delivered  
Packages 1 of 1

Date	Local Time	Location	Description
Nov 18, 2013	8:32 a.m.	Pickering, Ontario, M3J 4K7, ON	Shipment delivered to DARA, no 3111 DORA
Nov 16, 2013	7:39 a.m.	Pickering, Ontario, M3J 4K7, ON	On route for delivery
Nov 16, 2013	6:41 a.m.	Pickering, Ontario, M3J 4K7, ON	Arrived at our facility
Nov 16, 2013	6:38 a.m.	Pickering, ON	Picked up by the courier for delivery
Nov 15, 2013	8:27 a.m.	Pickering	Shipping label created

R.J. Burnside & Associates Limited 1465 Pickering Parkway Suite 200 Pickering ON L1V 7G7 Canada  
telephone (905) 420-5777 fax (905) 420-5247 web www.rjburnside.com



November 15, 2013

Via: Courier  
Rogers Communications  
3573 Woffedale Road  
Mississauga ON L5C 3T6

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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November 15, 2013

Page 2 of 34

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Dave Blake, C.E.T. The Corporation of the Town of St. Marys 405 James Street South, P.O. Box 998 St. Marys, ON N4X 1B8 Phone: 519-284-2340 Ext. 209 Fax: 519-284-0502 Email: dbleke@town.stmarys.on.ca	James Hollingsworth R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering, ON L1S 6H5 Phone: 905-420-5777 Ext. 803 Fax: 905-420-5247 Email: St.Marys.Waste.EA@RJBurnside.com
--	---

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

Agency

### View Shipment Details



**Shipment Date**  
2013-11-15  
**To**  
Rogers Communications  
Ms. Marian Wright  
3573 WOLFEDALE RD  
MISSISSAUGA, Ontario  
Canada, L5C3T6

**Created**  
2013-11-15 05:56 PM  
**From**  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

<b>PIN</b>	330019393603	<b>Adjusted Weight</b>	1.00 lb
<b>Ship Type</b>	Regular	<b>Transit Time (days)</b>	1
<b>Package Type</b>	Express Envelope	<b>Cost</b>	\$0.00
<b>Number of pieces</b>	1	<b>Tax</b>	\$0.00
<b>Premium Service</b>	Purolator Express Envelope	<b>Total</b>	\$0.00

**Hold For Pickup (receiver will pick up shipment)** No  
**Declared Value** \$0.00  
**Bill To** Sender  
**Dangerous Goods** No  
**Chain Of Signature** No  
**OSNR-Signature Not Required** No  
**Residential Delivery Signature Required** No

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.

Agency  
Rogers



### Tracking Details

Shipment Status

**Package Status**  
Package Tracking Number: 330019393603 [View proof of delivery and signature](#)

**Delivered**  
Monday, November 18, 2013 11:24 a.m.  
Received By: Brian

<b>Service</b>	Purolator Express Envelope	<b>From</b>	Pickering, ON, CA
<b>Est. Shipment Weight</b>	1 lb.	<b>To</b>	Mississauga, ON, CA
<b>Shipment Date</b>	Nov 15, 2013		

### Shipment Summary

**Tracking #** 330019393603  
**Deliver By** Nov 18, 2013  
**Status** Delivered  
Package 1 of 1

Date	Local Time	Location	Description
Nov 18, 2013	11:24 a.m.	Mississauga (west/oust), ON	Shipment delivered to BRIAN at SHIP DOCK
Nov 18, 2013	7:39 a.m.	Mississauga (west/oust), ON	On vehicle for delivery
Nov 18, 2013	2:45 a.m.	Mississauga (west/oust), ON	Arrived at sort facility
Nov 16, 2013	2:44 a.m.	Mississauga (west/oust), ON	Picked up by Purolator
Nov 16, 2013	8:41 p.m.	Toronto Sor; Ctr/str Trf. ON	Arrived at sort facility
Nov 15, 2013	6:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	6:07 p.m.	Purolator	Shipping label created



November 15, 2013

Via: Courier

Upper Thames Conservation Authority  
1424 Clarkia Road  
London ON N5V 5B9

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously posted for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity,
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The final ToR is now available for download on the Town's website, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the *Town Services, Garbage and Recycling* page.

We are enclosing with this letter a DVD-R that contains a searchable PDF copy of the TOR. Should you require a paper copy for your review, please use the attached feedback form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 988  
St. Marys, ON N4X 1B9  
Phone: 519-294-2340 Ext. 209  
Fax: 519-294-0902  
Email: dblake@town.stmarys.on.ca

Jerome Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 5H3  
Phone: 905-420-5777 Ext. 903  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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Yours truly,

R.J. Burnside & Associates Limited

Jerome R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Weetley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

030339 TOR Availability - Agencies.docx  
13/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Referred by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a hard copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
030339 TOR Request Form.docx 13/11/2013 10:02 AM

Agency

### View Shipment Details



Shipment Date  
2013-11-15  
To  
Upper Thames Conservation Auth  
1424 CLARKE RD  
LONDON, Ontario  
Canada, N5V5B9

Created  
2013-11-15 05:58 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada. L1V7G7  
1-(905)420-5777 x800

PIN	330019394890	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00

Hold For Pickup (receiver will pick up shipment) No  
Declared Value \$0.00  
Bill To Sender  
Dangerous Goods No  
Chain Of Signature No  
OSNR-Signature Not Required No  
Residential Delivery Signature Required No

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.

Upper Thames Conservation



### Tracking Details

Shipment Status

#### Package Status

Package Tracking Number: 330019394890

[View proof of delivery and signature](#)



**Delivered**  
Monday, November 18, 2013 12:08 p.m.  
Received By: Nora

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1.25	To	London, ON, CA
Shipment Date	Nov 15, 2013		

#### History

Date	Local Time	Location	Description
Nov 18, 2013	12:08 p.m.	London, ON	Shipment delivered to NORA at RECEPTION
Nov 18, 2013	7:28 a.m.	London, ON	On vehicle for delivery
Nov 16, 2013	8:41 p.m.	Toronto Sort Center TL, ON	Arrived at sort facility
Nov 15, 2013	8:29 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	9:27 p.m.	Purolator	Shipping label created

#### Shipment Summary

Tracking #	Deliver By	Status
330019394890	Nov 18, 2013	Delivered
Packages 1 of 1		



November 15, 2013

Via: Mail

Union Gas Limited  
PO Box 2001  
Chatham ON N7M 5M1

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Deve Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 988  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0802  
Email: d.blake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

080339 TOR Availability - Agencies.docx  
15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Referred by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering, ON L1V 7G7
Email:	janje.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Contact Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

080339 TOR Request Form.docx 15/11/2013 10:02 AM





November 21, 2013

Via: Mail

Ms. Kathy Pearson  
Festival Hydro, Engineering  
P.O. Box 397  
Stratford, ON N5A 6T5

Dear Ms. Pearson,

Re: **Town of St. Marys Future Solid Waste Disposal Needs**  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 999  
St. Marys, ON N4X 1S6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0602  
Email: dblake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, ON L1S 8H5  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
21/11/2013 2:48 PM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by November 30, 2013 to:	
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jmhollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_





November 21, 2013

Via: Courier

Canadian Pacific Railway  
 1290 Central Parkway West, Suite 800  
 Mississauga, ON L5C 4R3

ATTN: Pension Real Estate/Land Management

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment**  
 File No.: 300032339.0000

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 998  
 St. Marys, ON N4X 1S6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: ddblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering, ON L1V 6H3  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
 2/11/2013 2:48 PM

## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng. Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering, ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

## View Shipment Details

330023790331  
ST MONY  
clk

**Shipment Date**  
2013-11-21  
**To**  
Canadian Pacific Railway  
Pension Real Estate/Land Man.  
1290 CENTRAL PKY W  
Suite # 800  
MISSISSAUGA, Ontario  
Canada, L5C4R3

**Created**  
2013-11-21 03:10 PM  
**From**  
R. J. Burnside  
Jamie Hollingworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

<b>PIN</b>	330023790331	<b>Adjusted Weight</b>	1.00 lb
<b>Ship Type</b>	Regular	<b>Transit Time (days)</b>	1
<b>Package Type</b>	Express Envelope	<b>Cost</b>	\$0.00
<b>Number of pieces</b>	1	<b>Tax</b>	\$0.00
<b>Premium Service</b>	Purolator Express Envelope	<b>Total</b>	\$0.00
<b>Hold For Pickup (receiver will pick up shipment)</b>	No		
<b>Declared Value</b>	\$0.00		
<b>Bill To</b>	Sender		
<b>Dangerous Goods</b>	No		
<b>Chain Of Signature</b>	No		
<b>OSNR-Signature Not Required</b>	No		
<b>Residential Delivery</b>	No		
<b>Signature Required</b>			

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



## Tracking Details

Shipment Status

**Package Status**  
**Package Tracking Number:** 330023790331 [View proof of delivery and signature](#)  
**Delivered**  
**Friday, November 22, 2013 9:29 a.m.**  
 Received By: Glenna

<b>Service</b>	Purolator Express Envelope	<b>From</b>	Pickering, ON, CA
<b>To</b>	Mississauga, ON, CA		
<b>Est. Shipment Weight</b>	1 lb.		
<b>Shipment Date</b>	Nov 21, 2013		

**History**

Date	Local Time	Location	Description
Nov 22, 2013	9:29 a.m.	Mississauga (west/central), ON	Shipment delivered to GLENNA at RECEPTION
Nov 22, 2013	8:10 a.m.	Mississauga (west/central), ON	On vehicle for delivery
Nov 22, 2013	12:44 a.m.	Mississauga (west/central), ON	Arrived at sort facility
Nov 21, 2013	8:59 p.m.	Toronto Sort Ctr: TL, ON	Arrived at sort facility
Nov 21, 2013	4:27 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 21, 2013	3:22 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330023790331	Nov 22, 2013	Delivered
Package 1 of 1 of 1		

CPR

November 21, 2013

Page 2 of 2



November 21, 2013

Via: Courier

Mr. Tony Basson  
Director of Environment and Sustainability  
Rogers Business Solutions  
1 Mount Pleasant Road  
Toronto, ON M4Y 2Y5

Dear Mr. Basson,

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment**  
File No.: 300032339.0000

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Deve Blake, C.E.T.  
The Corporation of the Town of St. Marys  
405 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0802  
Email: dblake@townofstmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
21/11/2013 2:48 PM



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Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng., Technical Leader, Solid Waste
Fax:	(905) 420-5247
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Email:	jemie.hollingsworth@rjburnside.com

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Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_ ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

032339 TOR Request Form.docx 18/11/2013 10:02 AM

## View Shipment Details

300032339  
St. Marys.



**Shipment Date**  
2013-11-21  
**To**  
Rogers Business Solutions  
Mr. Tony Basson  
1 MOUNT PLEASANT RD  
TORONTO, Ontario  
Canada, M4Y2Y5  
1-(416)935-3140

**Created**  
2013-11-21 03:08 PM  
**From**  
R. J. Bumside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite #200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-6777 x800

<b>PIN</b>	330023785372	<b>Adjusted Weight</b>	1.00 lb
<b>Ship Type</b>	Regular	<b>Transit Time (days)</b>	1
<b>Package Type</b>	Express Envelope	<b>Cost</b>	\$0.00
<b>Number of pieces</b>	1	<b>Tax</b>	\$0.00
<b>Premium Service</b>	Purolator Express Envelope	<b>Total</b>	\$0.00
<b>Hold For Pickup (receiver will pick up shipment)</b>	No		
<b>Declared Value</b>	\$0.00		
<b>Bill To</b>	Sender		
<b>Dangerous Goods</b>	No		
<b>Chain Of Signature</b>	No		
<b>OSNR-Signature Not Required</b>	No		
<b>Residential Delivery Signature Required</b>	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



Rogers Business

## Tracking Details

### Shipment Status

#### Package Status

Package Tracking Number: 330023785372

[View proof of delivery and signature](#)



**Delivered**  
Friday, November 22, 2013 10:13 a.m.  
Received By: Martin

<b>Service</b>	Purolator Express Envelope	<b>From</b>	Pickering, ON, CA
<b>Est. Shipment Weight</b>	1 lb.	<b>To</b>	Toronto, ON, CA
<b>Shipment Date</b>	Nov 21, 2013		

#### History

Date	Local Time	Location	Description
Nov 22, 2013	10:13 a.m.	Toronto (west/central), ON	Shipment delivered to MARTIN at MAIL ROOM
Nov 22, 2013	8:16 a.m.	Toronto (west/central), ON	On vehicle for delivery
Nov 22, 2013	1:07 a.m.	Toronto (west/central), ON	Arrived at sort facility
Nov 21, 2013	3:50 p.m.	Toronto Sort Order TR, ON	Arrived at sort facility
Nov 21, 2013	4:27 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 21, 2013	3:21 p.m.	Purolator	Shipping label created

#### Shipment Summary

<b>Tracking #</b>	<b>Deliver By</b>	<b>Status</b>
330023785372	Nov 22, 2013	Delivered
Packages: 1 of 1		

Municipality

### View Shipment Details



**Shipment Date**  
2013-11-15  
**To**  
Town of St. Marys  
Mr. Dave Blake  
175 Queen Street E.  
ST MARYS, Ontario  
Canada, N4X1B6

**Created**  
2013-11-15 06:19 PM  
**From**  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

<b>PIN</b>	330019404749	<b>Adjusted Weight</b>	1.00 lb
<b>Ship Type</b>	Regular	<b>Transit Time (days)</b>	1
<b>Package Type</b>	Express Envelope	<b>Cost</b>	\$0.00
<b>Number of pieces</b>	1	<b>Tax</b>	\$0.00
<b>Premium Service</b>	Purolator Express Envelope	<b>Total</b>	\$0.00

**Hold For Pickup (receiver will pick up shipment)** No  
**Declared Value** \$0.00  
**Bill To** Sender  
**Dangerous Goods** No  
**Chain Of Signature** No  
**OSNR-Signature Not Required** Yes  
**Residential Delivery Signature Required** No

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



### Tracking Details

Shipment Status

Package Status

Package Tracking Number: 330019404749

[View more details](#)



**Delivered**

Monday, November 18, 2013 12:33

p.m.

Origin signature not required

<b>Service</b>	Purolator Express Envelope	<b>From</b>	Pickering, ON, CA
<b>Est. Shipment Weight</b>	1 lb.	<b>To</b>	St Marys, ON, CA
<b>Shipment Date</b>	Nov 15, 2013		

History

Date	Local Time	Location	Description
Nov 18, 2013	12:33 p.m.	Stafford, ON	Shipment delivered at: RECEPTION
Nov 18, 2013	10:19 a.m.	Stafford, ON	Attempted delivery - incomplete / incorrect address provided
Nov 18, 2013	8:28 a.m.	Stafford, ON	On vehicle for delivery
Nov 18, 2013	8:20 a.m.	Stafford, ON	Arrived at sort facility
Nov 18, 2013	8:19 a.m.	Stafford, ON	Picked up by Purolator
Nov 16, 2013	10:45 p.m.	Tweeno Sort Office TJL ON	Departed ext facility
Nov 16, 2013	8:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	6:27 p.m.	Purolator	Shipping label created

### Shipment Summary

Tracking # **330019404749** Delivered By **Nov 18, 2013** Status **Delivered**  
Packages 1 to 1 of 1

## View Shipment Details



Shipment Date  
2013-11-15  
To  
Perty County  
Kerri Ann O'Rourke  
1 HURON ST  
STRATFORD, Ontario  
Canada, N5A5S4

Created  
2013-11-15 08:21 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330019405555	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery	No		
Signature Required	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



## Tracking Details

Shipment Status

Package Status  
Package Tracking Number: 330019405555 [View proof of delivery and signature](#)

**Delivered**  
Monday, November 18, 2013 10:40 a.m.  
Received By: Drouin

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Stratford, ON, CA
Shipment Date	Nov 15, 2013		

**Shipment Summary**  
Tracking # Deliver By Status  
330019405555 Nov 18, 2013 Delivered  
Packages 1 to 1 of 1

### History

Date	Local Time	Location	Description
Nov 18, 2013	10:40 a.m.	Stratford, ON	Shipment delivered to OHRURKE at RECEPTION
Nov 18, 2013	8:14 a.m.	Stratford, ON	On vehicle for delivery
Nov 15, 2013	9:48 p.m.	Toronto Sort Ctr/Id: Ttl, ON	Arrived at sort facility
Nov 15, 2013	8:20 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	6:27 p.m.	Purolator	Shipping label created



## View Shipment Details



**Shipment Date**  
2013-11-15  
**To**  
Township of Perth South  
Lizet Scott, Clerk  
3191 Road 122  
ST. PAULS, Ontario  
Canada, N0K1V0

**Created**  
2013-11-15 06:16 PM  
**From**  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

**PIN** 330019403592  
**Ship Type** Regular  
**Package Type** Express Envelope  
**Number of pieces** 1  
**Premium Service** Purolator Express Envelope

**Adjusted Weight** 1.00 lb  
**Transit Time (days)** 1  
**Cost** \$0.00  
**Tax** \$0.00  
**Total** \$0.00

**Hold For Pickup (receiver will pick up shipment)** No  
**Declared Value** \$0.00  
**Bill To** Sender  
**Dangerous Goods** No  
**Chain Of Signature** No  
**OSNR-Signature Not Required** No  
**Residential Delivery Signature Required** No

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



## Tracking Details

Shipment Status



**Package Status**  
Package Tracking Number: 330019403592 [View more details](#)

**Delivered**  
Monday, November 18, 2013 10:02  
A.M.  
Signature not required

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	St. Pauls, ON, CA
Shipment Date	Nov 15, 2013		

**History**

Date	Local Time	Location	Description
Nov 18, 2013	10:02 a.m.	Stratford, ON	Shipment delivered at: RECEPTION
Nov 18, 2013	8:32 a.m.	Stratford, ON	On vehicle for delivery
Nov 18, 2013	8:16 p.m.	Toronto South Central, ON	Arrived at sort facility
Nov 16, 2013	8:28 p.m.	Pickering, ON	Picked up by Purolator at Pickering ON
Nov 15, 2013	8:21 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	Deliver By	Status
330019403592	Nov 18, 2013	Delivered

Package 1 to 1 of 1



**Town of St. Marys Future Solid Waste Disposal Needs EA**

**Jamie Hollingsworth** to: EACoordination\_ON

11/21/2013 09:05 AM

Cc: "Dave Blake", "Wright, Wesley (ENE)"

To whom it may concern,

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. A draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity,
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's website, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the Town Services, Garbage and Recycling page. Should you require a paper copy for your review, please use the attached fax-back form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy through the Town's website.

For your information, the Town's EA process has included consultation with the aboriginal communities that may be affected by the project, as documented in the ToR. Further, copies of the ToR have been provided to aboriginal communities. Communication with these aboriginal communities will be ongoing.

To further assist with your review we have attached Figure 5.2 of the ToR to this email. This figure identifies the EA study area should landfill expansion be selected as the preferred alternative.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will also be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

Under the Freedom of Information and Protection of Privacy Act and the Environmental Assessment

Act, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public record files for this matter and will be released, if requested, to any person.

Yours truly,



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



032339 TOR Request Form.pdf



32339 St. Marys Study Area-STUDY AREAS.pdf



**BURNSIDE**

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## Terms of Reference Hard Copy Request Form

---

<b>Project:</b>	<b>Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment</b>
<b>File No.:</b>	300032339.0000
<b>Return by <u>November 30, 2013</u> to:</b>	
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
<b>Fax:</b>	(905) 420-5247
<b>Mail:</b>	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
<b>Email:</b>	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - Fax: ( ) -

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

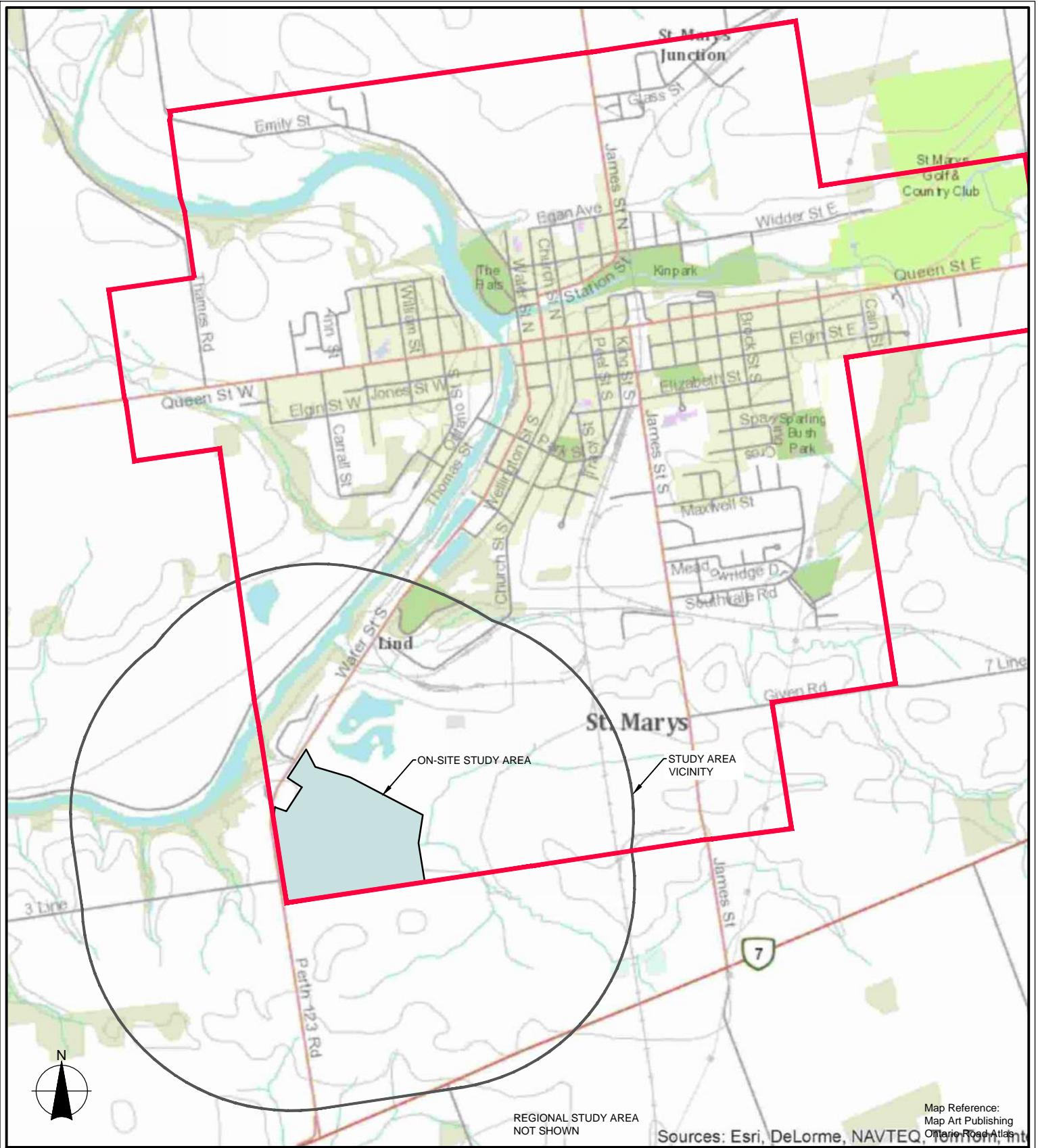


Figure Title

**TOWN OF ST. MARYS  
TERMS OF REFERENCE  
STUDY AREAS**

Client  
**THE CORPORATION OF THE  
TOWN OF ST. MARYS**

Drawn AE	Checked JRH	Date 13/06/25
Scale 1:25,000	Project No. 300032339	

Figure No.  
**5.2**



## Town of St. Marys Future Solid Waste Disposal Needs EA

**Jamie Hollingsworth** to: MAA.EA.Review

11/21/2013 12:48 PM

Cc: "Dave Blake", "Wright, Wesley (ENE)"

To whom it may concern,

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. A draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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To further assist with your review we have attached Figure 5.2 of the ToR to this email. This figure identifies the EA study area should landfill expansion be selected as the preferred alternative.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

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Act, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in a submission will become part of the public record files for this matter and will be released, if requested, to any person.

Yours truly,



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



032339 TOR Request Form.pdf



32339 St. Marys Study Area-STUDY AREAS.pdf



**BURNSIDE**

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## Terms of Reference Hard Copy Request Form

---

<b>Project:</b>	<b>Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment</b>
<b>File No.:</b>	300032339.0000
<b>Return by <u>November 30, 2013</u> to:</b>	
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
<b>Fax:</b>	(905) 420-5247
<b>Mail:</b>	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
<b>Email:</b>	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - Fax: ( ) -

Email: \_\_\_\_\_

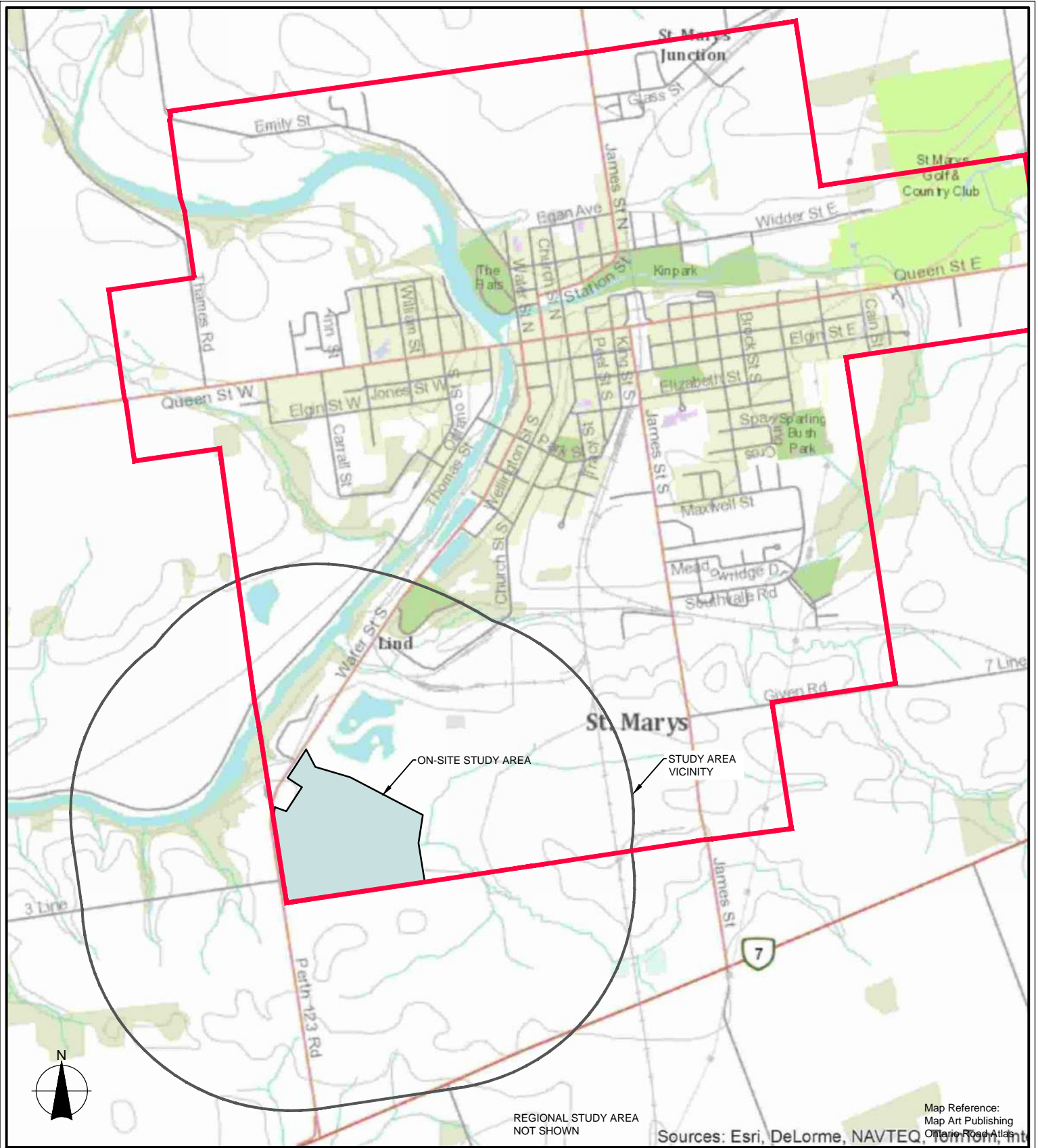
Courier Instructions: \_\_\_\_\_

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature


\_\_\_\_\_  
Date





REGIONAL STUDY AREA  
NOT SHOWN

Sources: Esri, DeLorme, NAVTEQ, TomTom, Int  
Map Reference:  
Map Art Publishing  
Ontario Road Atlas

	Figure Title			<p align="center"><b>TOWN OF ST. MARYS TERMS OF REFERENCE STUDY AREAS</b></p>
	<p>Client</p> <p align="center"><b>THE CORPORATION OF THE TOWN OF ST. MARYS</b></p>	<p>Drawn</p> <p>AE</p>	<p>Checked</p> <p>JRH</p>	
<p>Scale</p> <p>1:25,000</p>		<p>Project No.</p> <p>300032339</p>		



## Town of St. Marys Future Solid Waste Disposal Needs EA

**Jamie Hollingsworth** to: Keith.Noronha

11/21/2013 12:51 PM

Cc: "Dave Blake", "Wright, Wesley (ENE)"

Mr. Keith Noronha,  
Environmental Management Team Assistant,  
Infrastructure Ontario

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

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Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

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Yours truly,



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



032339 TOR Request Form.pdf



32339 St. Marys Study Area-STUDY AREAS.pdf



**BURNSIDE**

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## Terms of Reference Hard Copy Request Form

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<b>File No.:</b>	300032339.0000
<b>Return by <u>November 30, 2013</u> to:</b>	
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
<b>Fax:</b>	(905) 420-5247
<b>Mail:</b>	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
<b>Email:</b>	jamie.hollingsworth@rjburnside.com

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Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - Fax: ( ) -

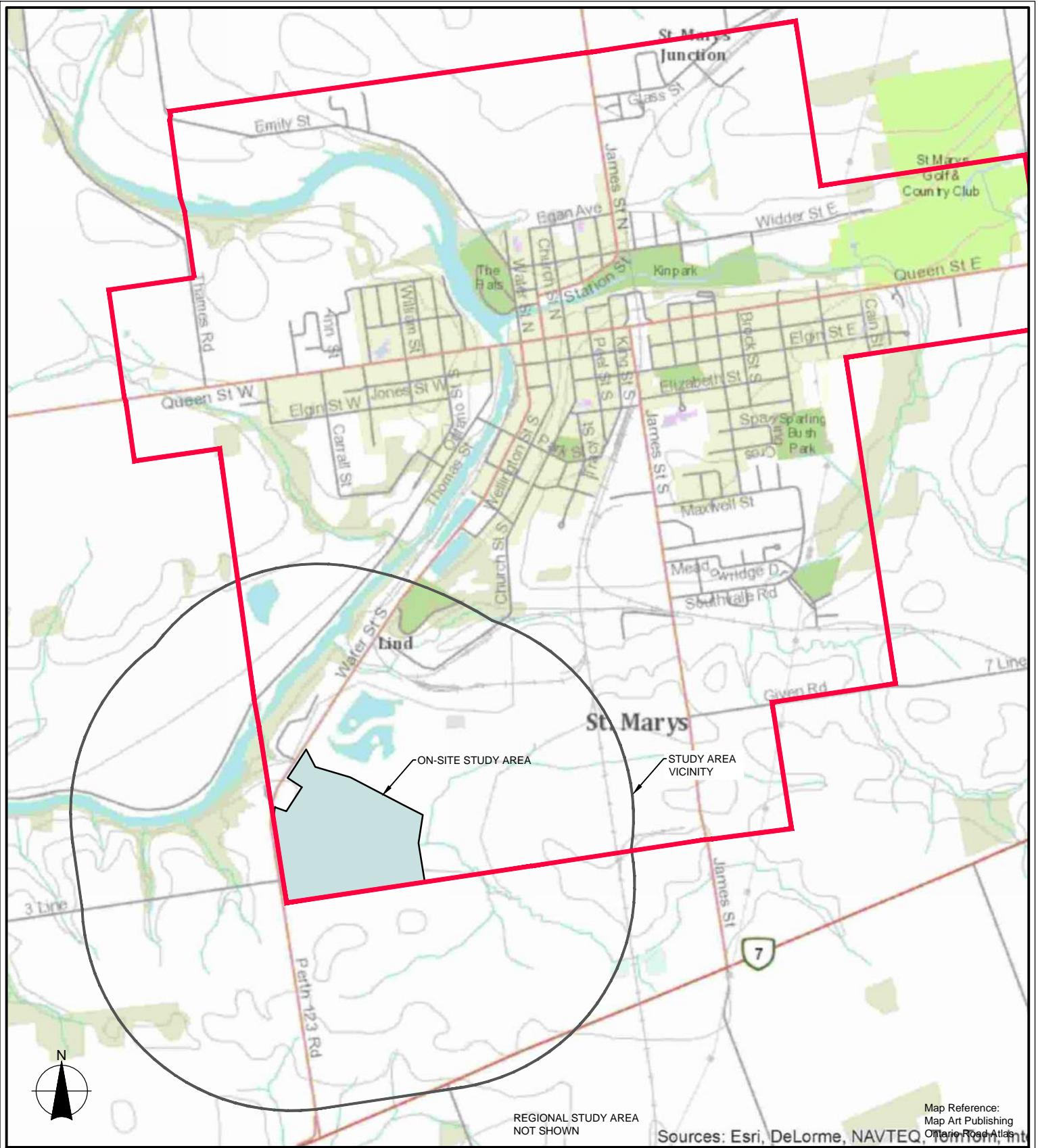
Email: \_\_\_\_\_


Courier Instructions: \_\_\_\_\_

\_\_\_\_\_  
Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



		Figure Title		Figure No.	
		<b>TOWN OF ST. MARYS TERMS OF REFERENCE STUDY AREAS</b>			
Client	<b>THE CORPORATION OF THE TOWN OF ST. MARYS</b>		Drawn AE	Checked JRH	Date 13/06/25
			Scale 1:25,000	Project No. 300032339	
5.2					



## Town of St. Marys Future Solid Waste Disposal Needs EA

**Jamie Hollingsworth** to: cs\_e

11/21/2013 03:23 PM

Cc: "Dave Blake", "Wright, Wesley (ENE)"

Trans Canada Corporation  
Head Office, Attention: Community, Safety and Environment  
450 - 1 Street SW  
Calgary, AB T2P 5H1

To whom it may concern;

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. A draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity,
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's website, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the Town Services, Garbage and Recycling page. Should you require a paper copy for your review, please use the attached fax-back form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy through the Town's website.

To further assist with your review we have attached Figure 5.2 of the ToR to this email. This figure identifies the EA study area should landfill expansion be selected as the preferred alternative.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will also be forwarded to the

Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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

Yours truly,



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



032339 TOR Request Form.pdf



32339 St. Marys Study Area-STUDY AREAS.pdf



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

## Terms of Reference Hard Copy Request Form

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<b>Project:</b>	<b>Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment</b>
<b>File No.:</b>	300032339.0000
<b>Return by <u>November 30, 2013</u> to:</b>	
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
<b>Fax:</b>	(905) 420-5247
<b>Mail:</b>	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
<b>Email:</b>	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - Fax: ( ) -

Email: \_\_\_\_\_

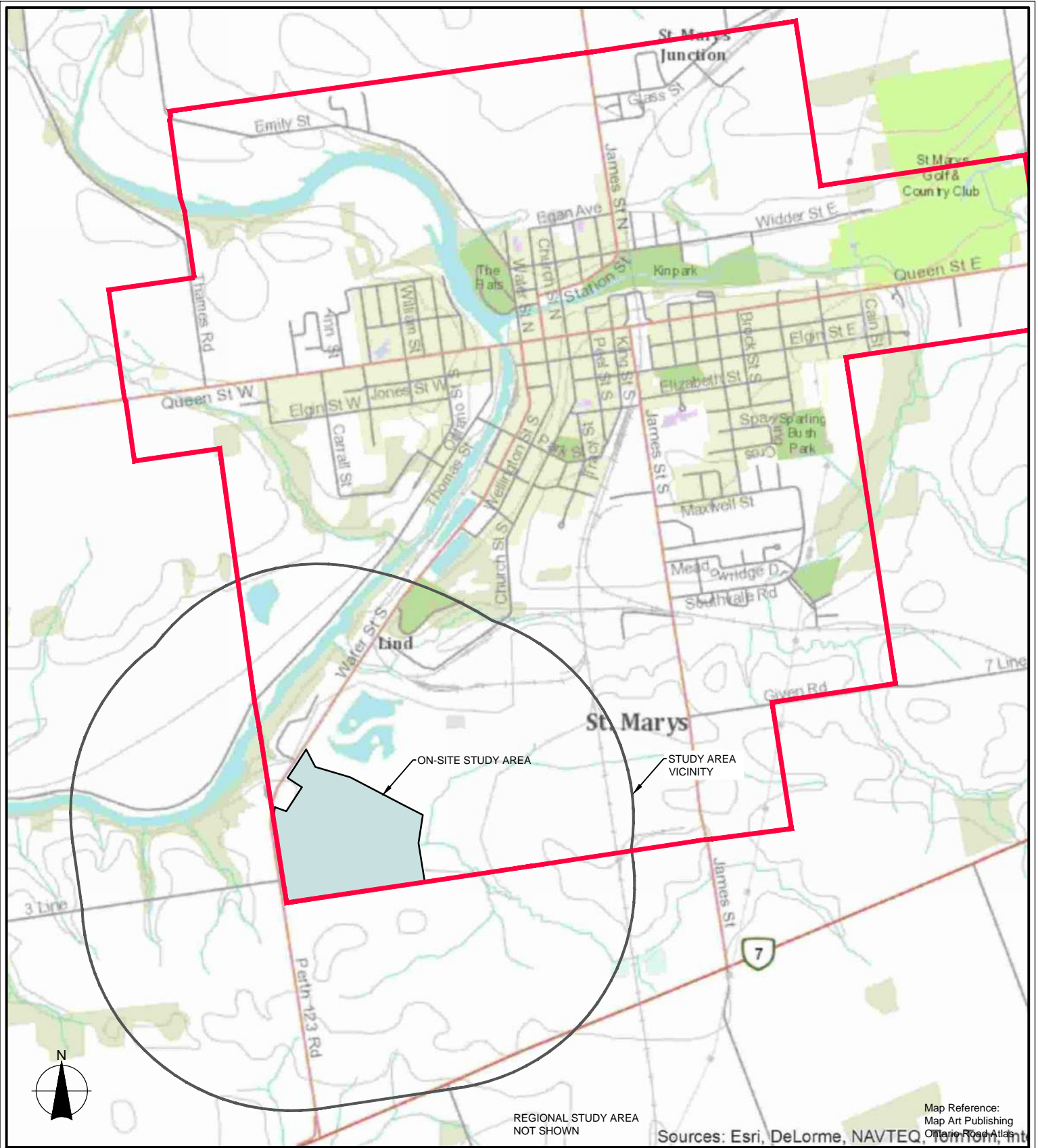
Courier Instructions: \_\_\_\_\_

\_\_\_\_\_  
Name


\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date





Map Reference:  
Map Art Publishing  
Ontario Road Atlas  
Sources: Esri, DeLorme, NAVTEQ, TomTom, Int

		Figure Title		Figure No.	
		<p><b>TOWN OF ST. MARYS TERMS OF REFERENCE STUDY AREAS</b></p>			
Client	<p><b>THE CORPORATION OF THE TOWN OF ST. MARYS</b></p>		Drawn	Checked	Date
			AE	JRH	13/06/25
		Scale	Project No.		<p><b>5.2</b></p>
		1:25,000	300032339		



**Town of St. Marys Future Solid Waste Disposal Needs EA**

**Jamie Hollingsworth** to: EACoordination\_ON

11/21/2013 09:05 AM

Cc: "Dave Blake", "Wright, Wesley (ENE)"

To whom it may concern,

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. A draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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For your information, the Town's EA process has included consultation with the aboriginal communities that may be affected by the project, as documented in the ToR. Further, copies of the ToR have been provided to aboriginal communities. Communication with these aboriginal communities will be ongoing.

To further assist with your review we have attached Figure 5.2 of the ToR to this email. This figure identifies the EA study area should landfill expansion be selected as the preferred alternative.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

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Under the Freedom of Information and Protection of Privacy Act and the Environmental Assessment



**RE: St. Marys - Agency Consultation : MNR** 

**Jamie Hollingsworth** to: Marriott, David (MNR)

11/29/2013 11:51 AM

Cc: "Dave Blake", Debanjan Mookerjea, Ashley Gallagher, Andrew Evans

Dave;

Thank you for your proposed revisions to Table 5.4. Though my intent was the same, I think your proposed wording for the *Land Use, rational* and *indicator* is better. Burnside will incorporate your wording into Table 5.4 of the TOR. We will also document this correspondence in the Record of Consultation (Appendix E).

Have a great weekend,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

"Marriott, David (MNR)"

Hi Jamie, The Ministry of Natural Resourc...

11/29/2013 11:07:56 AM

From: "Marriott, David (MNR)" <David.Marriott@ontario.ca>  
To: Jamie Hollingsworth <Jamie.Hollingsworth@rjburnside.com>,  
Date: 11/29/2013 11:07 AM  
Subject: RE: St. Marys - Agency Consultation: MNR

Hi Jamie,

The Ministry of Natural Resources (MNR) appreciates the project teams response below.

MNR staff have reviewed the proposed revisions to Table 5.4 in the Terms of Reference (TOR), and can offer the project team the following comments for consideration :

- The Ministry's comments on the original TOR noted that a portion of the site appears to be licenced under the *Aggregate Resources Act* . In addition, the areas immediately to the north, east and south of the landfill are also currently licensed under the Act.

The revisions to the Land Use Rationale in Table 5.4 (Aggregate Resources) appears to address the portion of the on-site study area that is still under license. However, it is recommended that additional consideration be given to the licensed areas within the study area vicinity that are directly adjacent to the landfill. For example, the Rationale and Indicators in Table 5.4 could

be amended as follows:

Rationale: Previous mineral aggregate extraction within the site by St. Marys Cement indicates that a portion of the proposed expansion area maybe under license in accordance with the *Aggregate Resources Act* . The areas directly adjacent to the site are also licensed under the Act.

Indicator: Conditions and status of the license relevant to the site. Potential for interference with mineral aggregate operations on-site and within the study area vicinity.

If further comment or clarification is required please contact the undersigned.

Thanks

Dave

**Dave Marriott**

District Planner  
Ministry of Natural Resources, Guelph District  
1 Stone Road West  
Guelph ON, N1G 4Y2  
(P) 519-826-4926  
(F) 519-826-6849

email: [david.marriott@ontario.ca](mailto:david.marriott@ontario.ca)

**From:** Jamie Hollingsworth [<mailto:Jamie.Hollingsworth@rjburnside.com>]

**Sent:** November 21, 2013 2:28 PM

**To:** Marriott, David (MNR)

**Cc:** Dave Blake

**Subject:** St. Marys - Agency Consultation: MNR

Marriott, David

Phone: 519-826-4926 Email: [david.marriott@ontario.ca](mailto:david.marriott@ontario.ca)

Address:

David Marriott

District Planner - GUELPH DISTRICT

Ontario Government Bldg

1 Stone Rd W

Guelph ON N1G4Y2

David,

Thank you for your call earlier today.

Upon further review of the Ministry of Natural Resources (MNR) earlier comments and the responses suggested by the Town's previous consultant (PDF page 105 of the TOR), Burnside proposes some slight revisions to Table 5.4 (page 37 of the TOR, which is PDF page 42). The changes on the attached "updated Table 5.4" increase the clarity of the information and efforts necessary for the Town's EA work

program with respect to the Aggregate Resources Act licence at and surrounding the site, and specifically relating to your comments #34 and 35 (again, PDF page 105 of the TOR). I trust these edits address the MNR's concerns.

Relative to your comment that the MNR may have detailed natural heritage information and advice relevant to the EA (#33 on PDF page 105), we have incorporated the MNR as a source of data for our EA work program. It is specifically identified in Table 5.4 that the MNR will be a source of data for our studies. The TOR also generally identifies the types of data that we will be seeking in Section 5.1.2.

Finally, Burnside has copied this email to Dave Blake, Environmental Coordinator for the Town of St. Marys. Burnside will determine if the Town has discussed the status of the Aggregate License for the Town's landfill property. This Aggregate License is apparently held by St. Marys Cement. As noted by the previous consultant's comments, the landfill property was to be removed from the Aggregate License, and the Town was to have discussed this matter with St. Marys Cement. I will let you know the outcome of this matter. Dave Blake may contact you - **outside of the EA process** - to determine if there are any specific requirements of the Aggregate License that must be met or amended to properly accommodate the current landfill site operations.

If you require any additional information or have any further comments or concerns please to not hesitate to contact me.

Take Care,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

\*\*\*\* CONFIDENTIALITY NOTICE \*\*\*\*

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Thank you.

\*\*\*\*\*

**COMMENT / MEMORANDUM TO FILE****Memo Details**

<b>Date:</b>	2013/12/02
<b>Module</b>	Technical Support      Main Document Reference Number: 3241-9DZQJ4
<b>Client:</b>	Town of St. Mary's Client Number: 6832-7PTPGL
<b>Site(s):</b>	St. Marys Landfill Site Number: 7574-5NPSMW
<b>Subject:</b>	EA Terms of Reference. Ground water comments.
<b>Created by:</b>	Mark Harris
<b>File Storage Number:</b>	

**MEMORANDUM**

**TO:**            **Wesley Wright**  
                  **Project Officer**  
                  **Environmental Assessment & Approvals Branch**  
                  **Ministry of the Environment**  
                  **2 St. Clair Ave. West, 14th Floor**  
                  **Toronto ON M4V 1L5**

**FROM:**        **Mark Harris, P.Geo**  
                  **Hydrogeologist**  
                  **Ministry of the Environment, Southwestern Region**

**DATE:**        **December 3, 2013**

**RE:**            **Environmental Assessment. Amended Terms of Reference. 2013**  
                  **St. Marys Landfill Site Expansion. Town of St. Marys. Perth County.**  
                  **Review of ground water components.**

This memorandum presents comments pertaining to my review of the amended Terms of Reference (ToR) submitted under the Environmental Assessment Act for a proposed expansion to the St. Marys Landfill. The document reviewed is entitled "Proposed Terms of Reference for St. Marys Future Solid Waste Disposal Needs" and was prepared by RJ Burnside & Associates, dated October 2013 (their file No.300032339). My review and comments are limited to the potential for the site to impact ground water resources and function.

1. The ToR document is a revision of a earlier submission provided to the Ministry in 2010. I had provided comments on the 2010 version of the ToR in a memorandum dated April 6, 2010 (Reference No. 8214-84AKFA) to Antonia Capotorto, formerly of your office.

2. A second version, dated September 2012 was also submitted. In an email to you, dated December 3, 2012, I indicated that the comments in my initial 2010 review were still valid, and added an additional comment. I indicated in my email that I did not see any major deficiencies with the ToR.
3. The most recent ToR includes a table entitled "Summary of Review Comments." Each of my earlier comments is provided in the table, with an acknowledgement by the consultant.
4. One of the major themes of my initial comments was that there was little site-specific detail included in the documentation. It is my understanding that the ToR is typically intended to be more general in nature, while the full EA document is the more appropriate vehicle for site-specific details to be addressed.

I recognize that this proposal is to expand an existing waste site that has been monitored for a number of years. We already have a reasonable understanding of the existing site and the effects of waste on ground water resources. For this reason, provided that my concerns are addressed during the preparation of the full EA Document, then I have no reason to oppose the ToR. I encourage the proponent and their consultant to contact me to discuss my comments early on during the process.

In summary, I have no reason to oppose the Terms of Reference at this time. The Ministry will review the full Environmental Assessment report once it is complete. If the issues raised in my previous correspondence are not appropriately addressed, it is my expectation that the Ministry would require the proponent to revise and/or update the EA report appropriately.

- c. Ryan Smith, Surface Water Specialist. MOE Southwestern Region  
Bob Aggerholm, Environmental Planner. MOE Southwestern Region.  
Pat Almost, Supervisor, Air, Pesticides and Environmental Planning. MOE Southwestern Region.

Agency/Organization	Title	First Name	Last Name	Position	Telephone	Fax	Contact Notes	Comments Received
Canadian Transportation Agency - Rail, Air and Marine Disputes Directorate	Mr.	Luc	Fortin	Senior Environmental Officer	(819) 953-2238	(819) 953-8353		Luc Fortin indicated that they will not be providing comments on the ToR. He added that it was a traditional practice to include the Canadian Transport Agency on such matters but that this was no longer necessary unless the proposed development related to rail/ transport. Otherwise the CTA does not need to participate in the EA process.
Department of Fisheries and Oceans Canada - Southern Ontario District	Mr.	Paul	Savoie	Regional Environmental Assessment Analyst	(905) 639-8687	(905) 639-3549		Obtained a voice recording that Paul Savoie would be out of office until December 18. Left a message regarding our request for comments on the draft ToR and asked that he contact James Hollingsworth.
Environment Canada - Ontario Region	Mr.	Rob	Dobos	Manager, Environmental Assessment Section	(905) 336-4953	(905) 336-8901	Electronic (CD) version of EA preferred	Rob Dobos was unavailable; left a message regarding our request for comments on the draft ToR and asked that he contact James Hollingsworth.
Transport Canada - Ontario Region (PHE) Environment and Engineering	Ms.	Denise	Jarvais	Environmental Coordinator	(419) 952-0575	(416) 952-0514		message regarding our request for comments on the draft ToR and asked that she contact James Hollingsworth.
Hydro One Networks Inc.	Mr.	Walter	Kloostra	Manager, Transmission Lines Sustainment Investment Planning	(416) 345-5114	(416) 345-5443	Send 2 hard copies of EA or 1 hard copy if download available	Walter Kloostra was unavailable; left a message regarding our request for comments on the draft ToR and asked that he contact James Hollingsworth.
Ministry of Agriculture, Food and Rural Affairs- West-Central Region	Ms.	Carol	Neumann	Rural Planner	(519) 846-3393	(519) 846-8178	Send 1 copy of EA	Carol Newman was out of office attending meetings; left a message regarding our request for comments on the draft ToR and asked that he contact James Hollingsworth.
Ministry of Infrastructure - Ontario Growth Secretariat, Growth Policy, Planning and Analysis Branch	Mr.	Andrew	Theoharis	Manager (A), Growth Policy	(416) 325-5794	(416) 325-7403	Screening criteria updated May 28, 2013 by AG as per GRT Master Distribution List	Spoke to Charles O'Hare (who answered the telephone) who informed that he (Charles) had replaced Andrew Theoharis as manager and that they would not be providing any comments on the draft ToR.
Ministry of Municipal Affairs and Housing- Western Municipal Service Office	Mr.	Bruce	Curtis	Manager, Community Planning and Development	(519) 873-4026	(519) 873-4018	Contact manager to determine if planner should be contacted; send 1 hard copy of EA	Obtained a voice recording that Bruce Curtis would be out of office for the remainder of the week. Left a message regarding our request for comments on the draft ToR and asked that he contact James Hollingsworth.
Ministry of Natural Resources- Guelph (Southern Region)	Mr.	David	Marriot	District Planner (A)	District Office: (519) 826-4955; (519) 826-4912; (519) 826-4929 (David Marriott) ; (519) 826-4929 (Lorraine Normington)	(519) 826-4929	Multiple contacts per district; email should be placed to all people of this position at time of agency list preparation and name confirmed; send 2 hard copies once contact confirmed	On November 21, 2013, Jamie Hollingsworth (burnside) spoke on phone with David Marriot (MNR). Mr. Marriot wanted to ensure compatibility between expanding landfill & existing aggregate resource permits. He noted that could not locate changes in revised TOR that address his comments. Also noted that existing landfill property is aggregate resource site. JH replied that resource extracted by St. Mary's Cement then property sold to Town for
Ministry of Tourism, Culture and Sport, Culture Services Unit	Ms.	Paula	Kulpa	Team Lead, Heritage and Land Use Planning, Culture Services Unit	(416) 314-7137	(416) 314-7175	Paula Kulpa added May 13, 2013 by AG, as per email received from Joseph Muller May 3, 2013 indicating that team lead (Paula Kulpa) to be contacted for new projects. Email preferred.	Spoke to Paula Kulpa who indicated that comments will be provided before December 17.
Ontario Power Generation	Ms.	Susan	Rapin	Director, Environment Services	(416) 592-6399		Prefers email notifications	No voicemail recording was available for Susan Rapin. The telephone number listed reached a recording for Andy Hofer who was out of office. No message was left
Bell Canada, Municipal Operations Centre	Mr.	John	Lachapelle					of these calls were successful. Tel numbers included: (905)614-6612 (voicemail for Lina DeMarco), (866)865-3708; (905)853-4044; (905)895-3872; (416)296-
Enbridge Gas Distribution Inc.	Mr.	Vince	Cina	Supervisor, Planning and Design				of these calls were successful. Tel numbers included: (866)844-9994 (promotions only); (877)362-7473 (customer service only); (416)495-5160
MTS – Allstream					(416) 649-7527			D.Evans updated email November 1, 2013 as per correspondence from 300033597. Requested that all future correspondence be sent via email.
Rogers Communications	Ms.	Marian	Wright	Planning Coordinator	(905) 897-3914; (888) 764-3771 Ahleam Halbouni (519-660-7527)			deals with filing, etc and is not the correct person to speak to on these matters; Ms Wright referred us to Ahleam Halbouni (519-660-7527) who was already out of office for the day. Ms Wright suggested w call back around 9am on Monday December 10. Spoke to Ahleam
Upper Thames Conservation Authority	Ms.	Tracy	Annett	Planner	(519) 451-2800 Ext: 253	(519) 451-1188	Contact agency to determine appropriate contact for specific project; send 1 hard copy of EA	Ms Annett was out of office. Left a message with receptionist asking Ms Annett to contact James Hollingsworth regarding the ToR for the Town of St. Mary's.
Union Gas Limited	Ms.	Lindsay	Robinson	District Engineer	(519) 352-3100			Lindsay Robinson was not in office and although several transfers were made, her voicemail recording was not obtained. No message was left.
Consultation and Accommodation Unit (CAU) Ontario Office								Email only ; contact only once then remove from contact list
Ministry of Aboriginal Affairs - Policy and Relationships Branch								Email in addition to AANDC; separate contact
Infrastructure Ontario	Mr.	Keith	Noronha	Environmental Management, Team Assistant	(416) 327-2755			Mr Noronha was unavailable. A message was left on his voicemail regarding our request for comments on the draft ToR and asking that he contact James Hollingsworth with any questions/ concerns.
Aboriginal Affairs and Northern Development Canada - Environmental Assessment Coordination, Environment Unit, Lands and Trusts Services								Email only; send legal description of property, location map AND description of project; Email updated April 2013 as per Niska Road NOC mailing list. AG updated screening criteria based off of conversation with Allison Berman (AANDC) May 10, 2013 in regards to appropriate time to contact AANDC EA Coordination Unit.
Canadian Environmental Assessment Agency - Ontario Region	Ms.	Anjala	Puvananathan	Ontario Region Director	(416) 952-1575	(416) 952-1573		AG had conversation with Allison Berman (AANDC) May 10, 2013 in regards to appropriate time to contact AANDC EA Coordination Unit. Allison noted that AANDC Coordination unit to be contacted when AANDC Consultation Report indicates that project will intercept FN lands, to receive more information on affected groups.
Department of Fisheries and Oceans Canada - Fish Habitat Management	Ms.	Sara	Eddy	Senior Habitat Biologist, Ontario-Great Lakes Area	(905) 336-4535	(905) 336-6286	Screening criteria updated May 28, 2013 by AG as per GRT Master Distribution List	
Hydro One Inc.	Mr.	Tony	Ierullo	Manager	(416) 345-5213	(416) 345-5395		



Agency/Organization	Title	First Name	Last Name	Position	Telephone	Fax	Contact Notes	Comments Received
Hydro One Real Estate Management	Ms.	Joan	Zhao		(905) 946-6230		Contact added to list as per correspondence between Jamie Hollingsworth and Cyrus Elmpak-Mackie from Hydro One on November 19, 2013.	Email received from Cyrus Elmpak-Mackie (Hydro One) on November 19, 2013. Noted that initial review had confirmed that Hydro One Transmission facilities located within vicinity of Project area. Requested that time given to allow relocation or modification if necessary. Requested that development should not reduce line clearance, limit access to facilities and that construction must maintain electrical clearance from transmission line conductors. Integrity of structure foundations must be maintained at all times with no disturbance to earth around poles, guy wires, and tower footings. Must not be grading, excavating, filling or other civil work close to structures. Noted planning shall consider that existing rights of ways may have provisions for future lines or existing secondary land uses. Once impact on facilities is determined, RJB must submit plans that detail development of affected Hydro One facilities to Joan Zhao. Proponent responsible for costs of modification or relocation of Hydro One facilities. / Phone call between Jamie Hollingsworth and Joan Zhao on November 20, 2013. Ms. Zhao noted doubt that Hydro One needs to be involved/is interested in the revised TOR. Requested a map and said would confirm interest.
Hydro One Networks Inc.	Mr.	Walter	Kloostra	Sustainment Investment Planning	(416) 345-5114	(416) 345-5443	Send 2 hard copies of EA or 1 hard copy if download available	
Ministry of Environment - Environmental Assessment and Approvals Branch							E-mail Notice of Completion only.	
Ministry of the Environment - London Regional and District Office, Southwestern Region				Planner and Environmental Assessment Coordinator	code 519: 1-800-265-7672 (519) 873-5000	(519) 873-5020		
Ministry of Transportation - Southwestern Region	Mr.	Kevin	Bentley	Manager- Engineering Office	(519) 873-4373	(519) 873-4388	Send 2 hard copies of EA	
Ontario Provincial Police- Operations Policy and Strategic Planning Bureau	Ms.	Paula	Brown		(705) 329-6903		Prefers to download EA or electronic copy	
Ministry of Health and Long-Term Care	Mr.	Tony	Amalfa	Manager, Environmental Health Policy and Programs	(416) 327-7634	(416) 327-0984		
Bell Canada	Ms.	Wendy	Lefebvre	Design Manager, Access Network	(905) 219-4558	(416) 701-6489		
Bell Canada	Mr.	Scott	Moon	Implementation Department	(905) 219-4558	(416) 701-6489		
Festival Hydro	Ms.	Kathy	Pearson	Engineering	(519) 271 4700 ext. 203	(519) 271 7204		Spoke to Kathy Pearson who referred us to Doug Eckel (519-271-4703, ext. 246). Mr Eckel had only recently received the package and had not yet reviewed the ToR. He will try to provide comments as soon as possible.
Rogers Business Solutions	Mr.	Tony	Basson	Director of Environment and Sustainability	(416) 935-3140			Tony Basson was unavailable; left a message regarding our request for comments on the draft ToR and that he contact James Hollingsworth.
<b>Telus</b>								
Enbridge Pipelines Ltd.	Ms.	Ann	Newman	Crossing Co-ordinator				
Perth District Health Unit	Dr.	Miriam	Klassen	Medical Officer of Health & Chief Executive Officer	(519) 271-7600	(519) 271-2195		
Trans Canada Corporation- Community, Safety and					1.855.920.1909	1.403.920.2397		
Trans-Northern Pipelines Inc.	Mr.	Satish	Korpal	Coordinator, Crossings and Facilities	(905) 770-3353 ext. 211	(905) 770-8675		
Ausable Bayfield Conservation Authority				Planner	Toll Free: 1-888-286-2610; (519) 235-2610	(519) 235-1963	Contact agency to determine appropriate contact for specific project; send 1 hard copy of EA	
St. Marys Fire Department	Mr.	Dennis	Brownlee	Fire Chief	Tel: 519-284-1752	Fax: 519-284-1751	Send 1 hard copy of EA	
County of Perth Ambulance	Mr.	Cliff	Eggleton	EMS Deputy Chief/Operations Manager	(519) 273-7382 ext. 224			
Heritage St. Marys	Mr.	Larry	Pfaff	Co-Chairperson			c/o Trisha McKibbin, Manager of Cultural Services	
Heritage St. Marys	Ms.	Jan	Mustard	Co-Chairperson	Tel: 519-284-3556	519-284-3881		
Middlesex (London) OPP Dispatch	Mr.	Steve	Porter	Inspector	519-681-0300	519-680-2649		
Avon Maitland District School Board				Planner	(519) 527-0111 or 1-800-592-5437	(519) 527-0222		
Huron Perth District Catholic School Board				Planner	(519) 345-2440	(519) 345-2449		
Conseil scolaire Viamonde Conseil scolaire de district des écoles catholiques dt Sud-Ouest				Planner	(416) 614-0844	(416) 397-2012	Send 1 hard copy of EA to appropriate school board	
Canadian Pacific Railway- Pension Real Estate/ Land Management Office					(519) 948-9227	(519) 948-1091	Send 1 hard copy of EA to appropriate school board	
					905-896-0808			Three calls were made to this agency. The number was busy all three time and the call was dropped.
CN Rail	Mr.	Stefan	Linder	Manager, Public Works Design and Construction	(905) 669-3264	(905) 760-3406	Send 1 hard copy of EA	
The Corporation of the Town of St. Marys	Mr.	David	Blake	Environmental Coordinator	519-284-2340 Ext. 209	519-284-0902		
Township of Perth South	Ms	Lizet	Scott	Clerk	519-271-0619 ext. 224	519-271-0647		Lizet Scott was unavailable; left a message regarding our request for comments on the draft ToR and asked that she contact James Hollingsworth.

Project Name: Town of St. Marys Future Solid Waste Disposal Needs  
Client Name: The Corporation of the Town of St. Marys  
Project No.: 300032339

Agency/Organization	Title	First Name	Last Name	Position	Telephone	Fax	Contact Notes	Comments Received
Perth County	Ms.	Kerri Ann	O'Rourke	County Clerk	519-271-0531	519-271-2723		<a href="#">Kerri Ann O'Rourke was unavailable; left a message regarding our request for comments on the draft ToR and asked that she contact James Hollingsworth.</a>



## Terms of Reference - Phone Contact

**Dave Blake** to: jamie.hollingsworth@rjburnside.com

12/11/2013 10:20 AM

Cc: "Debanjan Mookerjea (Debanjan.Mookerjea@rjburnside.com)"

Good Morning,

Just wanted to pass along a phone conversation which was just had with Festival hydro regarding the proposed Terms of Reference for the landfill Site.

*Spoke with Mr. Ken Levy*

*December 11, 2013 @ 10:15 am*

*Mr. Levy inquired as to the type of comments required or sought with regards to the Terms of Reference, or if we needed anything from Festival Hydro for this process. It was explained to Mr. Levy that the TOR is out for comment, whereas people, industry, government agencies, first nations, etc. can comment on the document regarding specific processes, or actions to be considered or incorporated into the EA process moving forward. Mr. Levy inquired if the document covered details related to the Site's hydro needs moving forward, which it was conveyed that, that type of detail was not included in the TOR.*

*Mr. Levy confirmed that Festival hydro has no concerns with regards to the TOR and that any and all future hydro demand requirements will have to go through the appropriate approval channels.*

### **Dave Blake, C.E.T.**

Environmental Coordinator

The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6

T: 519-284-2340 Ext. 209 | F: 519-284-0902 | E: [dBlake@town.stmarys.on.ca](mailto:dBlake@town.stmarys.on.ca) | Website: [www.townofstmarys.com](http://www.townofstmarys.com)

[Please consider the environment before printing this e-mail.](#)

This communication and the accompanying document(s) are confidential and are intended for the the sole use of the addressee If you are not the intended recipient, please notify me by return e mail and delete this e mail and any copies Thank you.



**Town of St. Marys Future Solid Waste Disposal Needs EA**

**Jamie Hollingsworth** to: ahleam.halbouni

12/10/2013 09:26 AM

Cc: "Dave Blake"

Attention: **Ahleam Halbouni , Planner  
Rogers Communications  
3573 Wolfedale Road  
Mississauga ON L 5C 3T6**

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

Ms. Halbouni,

Further to a call made by my colleague recently, I understand that you have not received Burnside's letter (PDF attached), or the DVD with a searchable PDF of the Town's draft Terms of Reference (ToR) for the above referenced project. Burnside has a courier receipt showing delivery, so I assume it has not made it to your desk as yet. In any event please don't waste your time tracking the courier package as this email should provide you with sufficient background.

The full ToR is available for download on the Town's website, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the Town Services, Garbage and Recycling page. Should you require a paper copy for your review, please use the fax-back form included as part of Burnside's letter. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy through the Town's website.

To further assist with your review we have attached Figure 5.2 of the ToR to this email. This figure identifies the EA study area should landfill expansion be selected as the preferred alternative.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to either:

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The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: [dblake@town.stmarys.on.ca](mailto:d Blake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: [St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com)

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Yours truly,



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



Rogers Communications.pdf



32339 St. Marys Study Area-STUDY AREAS.pdf



November 15, 2013

Via: Courier

Rogers Communications  
 3573 Wolfedale Road  
 Mississauga ON L5C 3T6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

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We are enclosing with this letter a DVD-R that contains a searchable PDF copy of the TOR. Should you require a paper copy for your review, please use the attached fax-back form. Alternately, you may mail or email the form or call Burnside at 905-420-5777 to arrange receipt of a paper copy. However, in the interest of the environment, we encourage use of the electronic copy provided or access through the Town's website.

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 998  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: dblake@town.stmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
 Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

**R.J. Burnside & Associates Limited**

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
 15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

<b>Project:</b>	<b>Town of St. Marys Future Solid Waste Disposal Needs          Proposed Terms of Reference for an Environmental Assessment</b>
<b>File No.:</b>	300032339.0000
<b>Return by November 30, 2013 to:</b>	
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
<b>Fax:</b>	(905) 420-5247
<b>Mail:</b>	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
<b>Email:</b>	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

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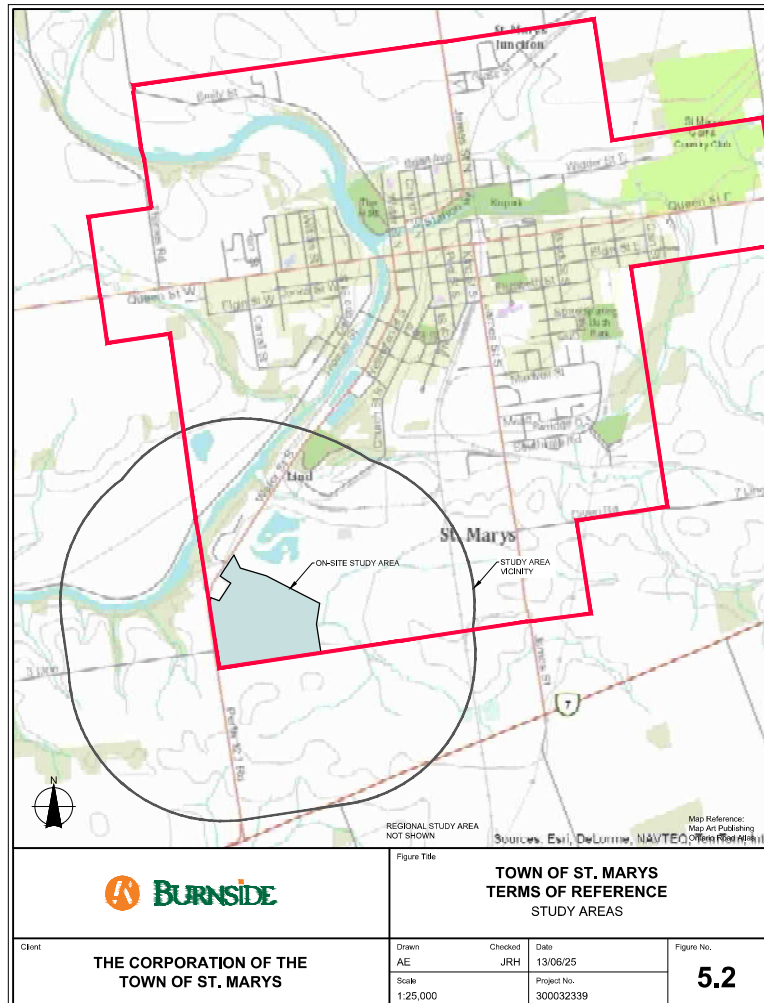


		Figure Title		Figure No.
		<b>TOWN OF ST. MARYS                  TERMS OF REFERENCE                  STUDY AREAS</b>		
Client <b>THE CORPORATION OF THE                  TOWN OF ST. MARYS</b>	Drawn AE	Checked JRH	Date 13/06/25	<b>5.2</b>
	Scale 1:25,000	Project No. 300032339		



**Town of St. Marys Future Solid Waste Disposal Needs EA**

**Jamie Hollingsworth** to: anna.grossi  
Cc: "Dave Blake"

12/10/2013 09:44 AM

Attention: **Ms. Anna Grossi, Administrative Assistant**  
**MTS - Allstream**  
**50 Worcester Road**  
**Etobicoke ON M 9M 5X2**

Re: **Town of St. Marys Future Solid Waste Disposal Needs**  
**Proposed Terms of Reference for an Environmental Assessment**  
**File No.: 300032339.0000**

Ms. Grossi,

Further to a call made by my colleague recently, I understand that you have not received Burnside's letter (PDF attached), or the DVD with a searchable PDF of the Town's draft Terms of Reference (ToR) for the above referenced project. Burnside has a courier receipt showing delivery, so I assume it has not made it to your desk as yet. In any event you need not waste your time tracking the courier package as this email should provide you with sufficient background. -- I can supply the receipt if that is helpful to you.

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408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
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R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
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James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

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1465 Pickering Parkway, Suite 200  
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[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



MTS Allstream.pdf



32339 St. Marys Study Area-STUDY AREAS.pdf





November 15, 2013

Via: Courier

MTS – Allstream  
 50 Worcester Road  
 Etobicoke ON M9M 5X2

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 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

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James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability - Agencies.docx  
 15/11/2013 4:43 PM



## Terms of Reference Hard Copy Request Form

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<b>File No.:</b>	300032339.0000
<b>Return by November 30, 2013 to:</b>	
<b>Attention:</b>	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
<b>Fax:</b>	(905) 420-5247
<b>Mail:</b>	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
<b>Email:</b>	<a href="mailto:jamie.hollingsworth@rjburnside.com">jamie.hollingsworth@rjburnside.com</a>

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Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

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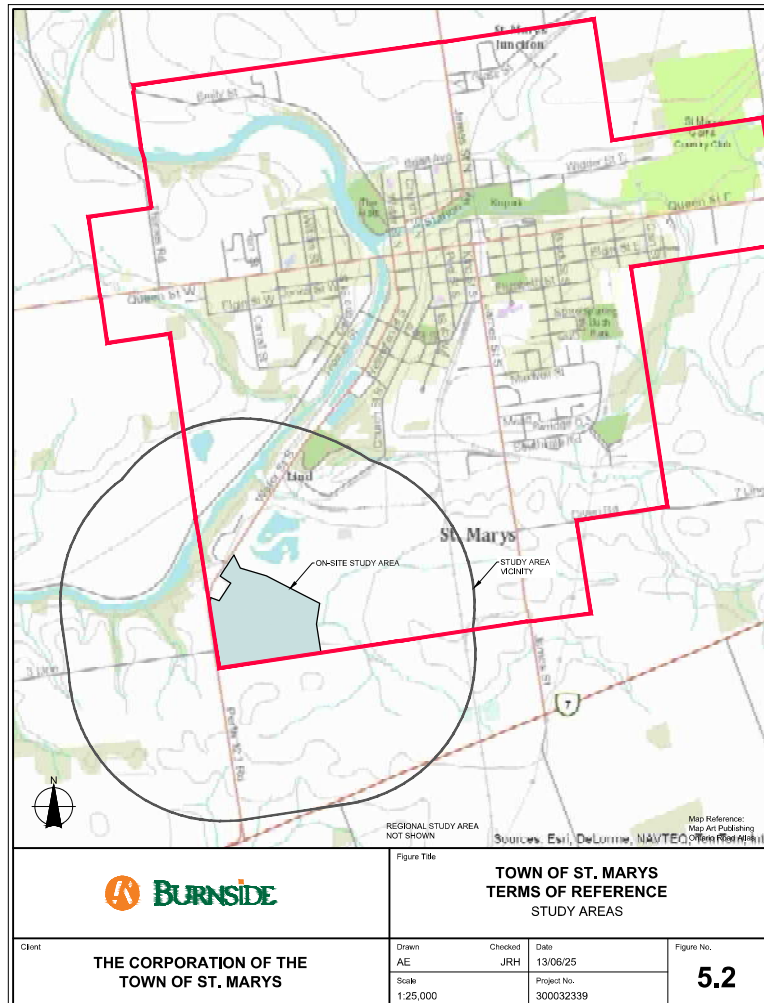


		Figure Title		Figure No.
		TOWN OF ST. MARYS TERMS OF REFERENCE STUDY AREAS		
Client <b>THE CORPORATION OF THE TOWN OF ST. MARYS</b>	Drawn AE	Checked JRH	Date 13/06/25	<b>5.2</b>
	Scale 1:25,000	Project No. 300032339		



**Fw: St. Marys landfill TOR**  
**Jamie Hollingsworth** to: Andrew Evans  
Cc: Debanjan Mookerjea

12/17/2013 02:18 PM

Andrew;

Attached are comments from the MOE's "Air, Pesticides and Environmental Planning" department. I have not reviewed any of this. Please let me know if you think this requires changes to the TOR.

Take Care,  
Jamie

----- Forwarded by Jamie Hollingsworth/RJB on 12/17/2013 02:16 PM -----

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>  
To: "jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>, "Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>, Date: 12/16/2013 03:30 PM  
Subject: FW: St. Marys landfill TOR

---

[Comments from our Regional office...](#)

Thanks,

Wesley



Please consider the environment before printing this email.

**From:** Aggerholm, Bob (ENE)  
**Sent:** December 16, 2013 3:18 PM  
**To:** Wright, Wesley (ENE)  
**Cc:** Almost, Patricia (ENE)  
**Subject:** St. Marys landfill TOR

Hello Wesley

RE: Burnside Revised TOR for the St. Marys Landfill Expansion

This is in reply to your request for comments of November 20, 2013 concerning the above.

The APEP Unit submitted comments on April 6, 2010 regarding the CRA version. A copy has been appended to this e-mail.

My interest at the time related to land use planning, particularly the control over land use in the surrounding area (the area affected by MOE Guideline D-4 and any CAZ). This interest is documented in the 2010 APEP submission.

The CRA record of consultation, which seems to have been adopted by Burnside, notes that these concerns will be dealt with in the "Existing and Planned Land Use" part of the EA. Consequently, it was concluded that no change in the TOR was warranted.

On the strength of this commitment, I have no objection to the latest TOR.

Section 4.1 describes "Alternatives to the Undertaking." Under Item 4 (Export of Waste to Another Jurisdiction), we will expect to see a discussion of the state of upper-tier (County of Perth and other) waste management planning. Granted, St. Marys is a Separated Municipality, but we live in an age where waste management planning on a regional basis should be stressed and there should be some discussion in the EA about the potential benefit of a waste management planning capability at the upper-tier level (to examine shared landfill sites, long-term planning of new facilities based on demand and least-cost transportation, etc.). The office is currently dealing with a landfill expansion in Perth East (under the EA Screening Guideline) and it is a challenging file. Perth County has no upper-tier waste management plan and we know of no process or infrastructure to achieve this end.

Bob Aggerholm  
Environmental Planner / Regional EA Coordinator  
Ministry of Environment  
Southwestern Region  
733 Exeter Road  
London, Ontario N6E 1L3  
Voice Direct: (519) 873-5012  
Office Switchboard (no human attendant): (519) 873-5000  
Office Fax: (519) 873-5020  
E-mail Direct: [bob.aggerholm@ontario.ca](mailto:bob.aggerholm@ontario.ca)

Message from "Robak, Trevor (OMAFRA)" <Trevor.Robak@ontario.ca> on Tue, 6 Apr 2010 19:07:25 -----  
----- 0000+

<Testa, Antonia (ENE)" <Antonia.Testa@ontario.ca" :To  
<Gerald.Diamond@ontario.ca>, "Aggerholm, Bob (ENE)" <Bob.Aggerholm@ontario.ca>, "Kerr, Ian"  
<ENE)" <Ian.Kerr@ontario.ca) :cc

RE: Town of St Marys Landfill Site Expansion EA Terms of Reference - draft review **Subject**  
:

Hi Antonia,

Please find attached SWR APEP comments on the St Marys Landfill Site Expansion EA Terms of Reference from both the Planning/EA and Air program perspectives.

Please let me know if you have any questions or need follow-up.

Thanks,

Trevor Robak,  
Supervisor – Air, Pesticides and Environmental Planning (APEP)  
Ministry of the Environment - Southwestern Region  
733 Exeter Road  
London ON, N6B 1L3  
Phone: (519) 873-5043  
Fax: (519) 873-5020

---

**From:** Capotorto, Antonia (ENE)

**Sent:** February 24, 2010 9:09 AM

**To:** Aggerholm, Bob (ENE); Diamond, Gerald (ENE); Colonnello, Jack (ENE); Harris, Mark (ENE); Slivar, Bob (ENE)

**Cc:** Kerr, Ian (ENE); Robak, Trevor (ENE); Blanchard, Kanina (ENE)

**Subject:** RE: Town of St Marys Landfill Site Expansion EA Terms of Reference - draft review

Hello,

As per the email below, here is a PDF copy of the proposed Terms of Reference for the Town of St Marys Landfill Expansion EA. You should receive a hard copy sometime today or tomorrow. Please see the attached memo requesting your review of the draft ToR and provide your comments to me by **April 9, 2010**.

If you have any questions, feel free to contact me. Thank you very much for your assistance.

Cheers,

**Antonia Capotorto, M.A.Sc.**  
Project Officer

EA Project Coordination Section  
Environmental Assessment & Approvals Branch  
Ministry of the Environment  
2 St. Clair Avenue West, 14th Floor  
Toronto ON M4V 1L5

☎ (416) 314-1181

📠 (416) 314-8452

✉ [antonia.capotorto@ontario.ca](mailto:antonia.capotorto@ontario.ca)



Please consider the environment before printing this email.

---

**From:** Aggerholm, Bob (ENE)

**Sent:** February 16, 2010 8:43 AM

**To:** Capotorto, Antonia (ENE); Blanchard, Kanina (ENE); Colonnello, Jack (ENE); Harris, Mark (ENE); Diamond, Gerald (ENE); Slivar, Bob (ENE); Kerr, Ian (ENE); Robak, Trevor (ENE)

**Subject:** RE: Town of St Marys Landfill Site Expansion EA Terms of Reference (draft)

Hello Antonia:

Thanks for the advance notice.

There will be a few of us in the Region reviewing this document. Would you please arrange to have 5 copies and one CD/DVD (with the document in text-searchable PDF format) delivered to us? E-mail is fine for the PDF.

Please include Bob Slivar of the London District on the e-mail and other distribution/notice lists.

Also, would you please list the people you intend to consult in the Region and District? I may need to speak with them regarding their view on certain policies and guidelines.

Thanks.

Bob Aggerholm  
Environmental Planner / Regional EA Coordinator  
Ministry of Environment  
Southwestern Region  
733 Exeter Road  
London, Ontario N6E 1L3  
Voice Direct: (519) 873-5012  
Office Switchboard: (519) 873-5000  
Office Fax: (519) 873-5020  
E-mail Direct: [bob.aggerholm@ontario.ca](mailto:bob.aggerholm@ontario.ca)

---

**From:** Capotorto, Antonia (ENE)  
**Sent:** February 16, 2010 8:04 AM  
**To:** Gebrezghi, Tesfaye (ENE); Low, Victor (ENE); Blanchard, Kanina (ENE); Colonnello, Jack (ENE); Harris, Mark (ENE); Aggerholm, Bob (ENE); Diamond, Gerald (ENE); Habtom, Stefanos (ENE)  
**Cc:** Robak, Trevor (ENE); Kerr, Ian (ENE); Mahmood, Mansoor (ENE)  
**Subject:** RE: Town of St Marys Landfill Site Expansion EA Terms of Reference (draft)  
**Importance:** High

Hello,

This is just a heads up that the Town of St. Marys intends on submitting a copy its draft Terms of Reference for the St. Marys Landfill Site Expansion this week for your review. I will send a hard copy of this draft ToR as soon as I receive them. If you have any questions please feel free to contact me.

Cheers,

**Antonia Capotorto, M.A.Sc.**  
Project Officer

EA Project Coordination Section  
Environmental Assessment & Approvals Branch  
Ministry of the Environment  
2 St. Clair Avenue West, 14th Floor  
Toronto ON M4V 1L5  
☎ (416) 314-1181  
📠 (416) 314-8452  
✉ [antonia.capotorto@ontario.ca](mailto:antonia.capotorto@ontario.ca)



Please consider the environment before printing this email.

---

**From:** Capotorto, Antonia (ENE)  
**Sent:** December 16, 2009 8:37 AM  
**To:** Gebrezghi, Tesfaye (ENE); Low, Victor (ENE); Mahmood, Mansoor (ENE); Blanchard, Kanina (ENE); Robak, Trevor (ENE); Kerr, Ian (ENE)  
**Subject:** Town of St Marys Landfill Site Expansion EA Terms of Reference (draft)

Hello,

The Town of St. Marys (town) plans on expanding the existing St. Marys Landfill Site so that it is capable of receiving post diversion municipal solid waste from the town over a 40 year planning period. The town has determined that this project is subject to the *Environmental Assessment Act* and will require an Individual Environmental Assessment. The town intends on submitting a draft Terms of Reference (ToR) to the Ministry of the Environment for the above-mentioned project sometime in January and has requested that the Ministry of the Environment review and provide its comments on the draft ToR.

If you could assign a reviewer for this project, it would be greatly appreciated. Please let me know once someone is assigned. If you have any questions, feel free to contact me.

Cheers,

**Antonia Capotorto, M.A.Sc.**  
Project Officer

EA Project Coordination Section  
Environmental Assessment & Approvals Branch  
Ministry of the Environment  
2 St. Clair Avenue West, 14th Floor  
Toronto ON M4V 1L5  
☎ (416) 314-1181  
📠 (416) 314-8452  
✉ [antonia.capotorto@ontario.ca](mailto:antonia.capotorto@ontario.ca)



Please consider the environment before printing this email.



St. Marys TOR Remarks tr1.doc



**Fw: St. ary's Future Solid Waste Needs EA - TOR**

**Jamie Hollingsworth** to: Andrew Evans

Cc: Debanjan Mookerjea

12/17/2013 02:23 PM

Andrew;

Please let me know if changes to the TOR are required as a result of the comments from the MOE's Waste Water engineer. -- I don't have any of these MOE comments in Adept yet. Can you look after that?

Take Care,  
Jamie

----- Forwarded by Jamie Hollingsworth/RJB on 12/17/2013 02:19 PM -----

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>  
To: "jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>, "Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>, Date: 12/16/2013 11:29 AM  
Subject: FW: St. ary's Future Solid Waste Needs EA - TOR

---

Comments from our WW engineer...

Thanks,

Wesley



Please consider the environment before printing this email.

**From:** Habtom, Stefanos (ENE)  
**Sent:** December 16, 2013 10:34 AM  
**To:** Wright, Wesley (ENE)  
**Cc:** Tovilla, Edgar (ENE)  
**Subject:** St. ary's Future Solid Waste Needs EA - TOR

Hi Wesley,

Please find attached review comments on the final St. Mary's Future Solid Waste Needs EA – TOR.

Best regards,



Stefanos Habtom St. Marys Future Solid Waste Needs EA- Terms of Reference.pdf

**Ministry of the Environment**

Environmental Assessment and  
Approvals Branch

2 St. Clair Avenue West  
Floor 12A  
Toronto, ON M4V 1L5  
Tel.: 416 314-8298  
Fax: 416 314-8452

**Ministère de l'Environnement**

Direction des évaluations et des  
autorisations environnementales

2, avenue St. Clair Ouest  
Étage 12A  
Toronto, ON M4V 1L5  
Tél. : 416 314-8298  
Télééc. : 416 314-8452



December 16, 2013

**MEMORANDUM**

**TO:** Wesley Wright  
Project Officer  
Environmental Assessment Services Section  
Environmental Approvals Branch

**FROM:** Stefanos Habtom  
Senior Wastewater Engineer  
Environmental Approval Services Section  
Environmental Approvals Branch

**RE:** Proposed Terms of Reference St. Mary's Future Solid Waste Needs Environmental  
Assessment (Amended)  
EA FILE No. 03-08-02

---

Pursuant to your memorandum dated November 20, 2013, I have completed my review of the Proposed Terms of Reference for the St. Mary's Future Solid Waste Needs Environmental Assessment (Amended) dated October 2013. I do not have any additional review comments other than what I provided during the draft TOR review process shown below.

The outline provided in the above noted proposed terms of reference is acceptable with respect to the mandate of the Environmental Approval Services Section, EAB, under Section 53 of the *Ontario Water Resources Act* (OWRA), and we will provide review comments on the Environmental Assessment Report when submitted.

If you require any additional information, please do not hesitate to contact me at (416) 314 8298.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Stefanos Habtom".

---

Stefanos Habtom, P. Eng.

c: Edgar Tovilla, Supervisor (A), Environmental Approval Services Section, EAB



*"Inspiring a Healthy Environment"*

December 9, 2013

R.J. Burnside and Associates Limited  
1465 Pickering Parkway, Suite #200  
Pickering, Ontario  
L1V 7G7

**Attention:** James Holingsworth – (via e-mail: [jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com))

Dear Mr. Hollingsworth:

**Re: Proposed Terms of Reference  
Town of St. Mary's Future Solid Waste Disposal Needs  
Environmental Assessment  
File No.: 300032339.0000**

We are in receipt of your letter (dated November 15, 2013) and attached DVD-R regarding the *Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment File No.: 300032339.0000*. The UTRCA previously provided comments for the (2006, 2009, 2012) draft Terms of Reference (ToR). Having reviewed this updated ToR, our only comments entail items related to Drinking Water Source Protection information. Please be advised of the following:

#### General Information

- 1) It is important that all Environmental Assessments consider Drinking Water Source Protection in their assessment of the environmental impacts and consideration of alternatives. This consideration should include the vulnerability of the subject lands and the drinking water threats associated with each of the alternatives being considered. The consideration of threats should include the relative risk and potential risk mitigation measures. Specific consideration needs to be given to any significant threats and the implications of Source Protection Plan policies on those activities. Moderate and Low threats should also be considered.
- 2) The Source Protection Committee has submitted the Source Protection Plan to the Minister of the Environment for approval. Updates to the Source Protection Plan will be submitted next year. Assessment Reports for all Source Protection Areas in the Region have been approved. Updates to Assessment Reports are planned to be submitted with the updates to the Source Protection Plan. Current versions of approved and proposed documents are available at [www.sourcewaterprotection.on.ca](http://www.sourcewaterprotection.on.ca). More detailed mapping is available on a mapping portal at <http://maps.thamesriver.on.ca/maps/source/> or through a

data use agreement from the local Conservation Authority. Once a Source Protection Plan is approved for the region, the policies may have a bearing on proposals assessed through an EA. As those policies may affect existing activities as well as future activities it is important that the EA be flexible in its consideration of the impacts of Source Protection Planning on the project as the plan continues through its approval and updates.

#### Information Specific to the Amended ToR

- 3) The Terms of Reference includes the identification of vulnerable areas within the study area, but does not make reference to consideration of risk posed from the project. This was previously reflected in comments on the earlier version of the Terms of Reference, but does not appear to be indicated in the revised (2013) ToR.
- 4) Appendix D includes Source Water Protection in exclusion criteria. It is interesting to note that the areas identified for exclusion include some of the areas where the project would be a significant threat as well as some of the areas where it would be a moderate threat. The reference to the Technical Bulletin provides details on the vulnerability assessment process but no explanation as to why these zones were excluded while other areas which may have significant or moderate threats were not excluded. The comment provided by MOE (#41 of Aug 26, 2013) may have been confusing in this regard as there are areas in WHPA-C where the project would be a significant threat (although these are outside of the municipality) while there are areas within WHPA-B where it would be a moderate threat.

Our office would like to be included in future circulations regarding this project (please address all future project correspondence to the undersigned). We would appreciate receiving information and reports as they become available in order to ensure that we can meet the project deadlines with our comments.

If you have any questions, please do not hesitate to contact the undersigned.

Yours truly,  
UPPER THAMES RIVER CONSERVATION AUTHORITY



**Karen M. Winfield**  
*Land Use Regulations Officer*  
LN/IS/TT/CT/KW/kw

c.c. – Project E-mail – ([St.Marys.Waste.EA@RJBurnside.com](mailto:St.Marys.Waste.EA@RJBurnside.com))  
Wesley Wright, Ministry of the Environment – (via e-mail: [wesley.wright@ontario.ca](mailto:wesley.wright@ontario.ca))  
Dave Blake, Town of St. Marys – (via e-mail: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca))



**Re: ToR - EA - St. Marys Future Solid Waste Disposal Needs** 

**Jamie Hollingsworth** to: Karen Winfield

12/19/2013 01:50 PM

Cc: dblake, wesley.wright

Karen,

Thank you for your comments regarding the Proposed Terms of Reference. Please find our responses to your letter's numbered items below:

*1) It is important that all Environmental Assessments consider Drinking Water Source Protection in their assessment of the environmental impacts and consideration of alternatives. This consideration should include the vulnerability of the subject lands and the drinking water threats associated with each of the alternatives being considered. The consideration of threats should include the relative risk and potential risk mitigation measures. Specific consideration needs to be given to any significant threats and the implications of Source Protection Plan policies on those activities. Moderate and Low threats should also be considered.*

We agree that Drinking Water Source Protection is an important aspect of evaluating the risks and potential impacts as a result of the project. This will be reflected in the EA evaluation criteria, playing a significant impact within the Hydrogeology Section. We have modified table 5.4 to highlight the Source Water Protection Plan as an information source, and potential impacts to drinking water sources as an indicator.

*2) The Source Protection Committee has submitted the Source Protection Plan to the Minister of the Environment for approval. Updates to the Source Protection Plan will be submitted next year. Assessment Reports for all Source Protection Areas in the Region have been approved. Updates to Assessment Reports are planned to be submitted with the updates to the Source Protection Plan. Current versions of approved and proposed documents are available at [www.sourcewaterprotection.on.ca](http://www.sourcewaterprotection.on.ca). More detailed mapping is available on a mapping portal at <http://maps.thamesriver.on.ca/maps/source/> or through a data use agreement from the local Conservation Authority. Once a Source Protection Plan is approved for the region, the policies may have a bearing on proposals assessed through an EA. As those policies may affect existing activities as well as future activities it is important that the EA be flexible in its consideration of the impacts of Source Protection Planning on the project as the plan continues through its approval and updates.*

Thank you for this information. The source water protection plan will be referred to during the EA period in assessing the level of risk, and appropriate mitigation measures. Burnside will periodically review the UTRCA website to check for updated document versions as you have indicated that some are undergoing approvals and updates.

*3) The Terms of Reference includes the identification of vulnerable areas within the study area, but does not make reference to consideration of risk posed from the project. This was previously reflected in comments on the earlier version of the Terms of Reference, but does not appear to be indicated in the revised (2013) ToR.*

Positive and negative effects (risks) are included in the TOR per our proposed evaluation. The level of risk will be included as a portion of the evaluation of the criteria identified in Table 5.4, and described in 5.5.1-5.5.2 where the potential negative effects represent risks with respect to the development.

*4) Appendix D includes Source Water Protection in exclusion criteria. It is interesting to note that the areas identified for exclusion include some of the areas where the project would be a significant threat as well as some of the areas where it would be a moderate threat. The reference to the Technical Bulletin provides details on the vulnerability assessment process but no explanation as to why these zones were excluded while other areas which may have significant or moderate threats were not excluded. The comment provided by MOE (#41 of Aug 26, 2013) may have been confusing in this*

*regard as there are areas in WHPA-C where the project would be a significant threat (although these are outside of the municipality) while there are areas within WHPA-B where it would be a moderate threat.*

The Town and Burnside are of the opinion that the WHPAs for the Town of St. Marys represented areas that would be deemed to be unlikely candidates for landfill siting based on technical restrictions as well as the anticipated public consultation. If a landfill were sited in these areas there are potential negative effects to the Town's water supply. We believe your comment #1 is similarly applicable to our evaluation in Appendix D. Additional evaluation of the zones within the study area will be conducted during the EA.

We will continue to provide documents for your comment during the EA process.

Regards,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

"Karen Winfield"      Hi James, Please see attached UTRCA Comme...      12/09/2013 04:10:33 PM

From: "Karen Winfield" <WinfieldK@thamesriver.on.ca>  
To: jamie.hollingsworth@rjburnside.com,  
Cc: St.Marys.Waste.EA@RJBurnside.com, dblake@town.stmarys.on.ca, wesley.wright@ontario.ca  
Date: 12/09/2013 04:10 PM  
Subject: ToR - EA - St. Marys Future Solid Waste Disposal Needs

Hi James,

Please see attached UTRCA Comments regarding the updated Terms of Reference for the St. Marys Future Solid Waste Disposal Needs EA.

Thank-you,

**Karen Winfield**

Land Use Regulations Officer  
1424 Clarke Road London, Ontario, N5V 5B9  
519.451.2800 Ext. 237 | Fax: 519.451.1188  
[winfieldk@thamesriver.on.ca](mailto:winfieldk@thamesriver.on.ca)



[attachment "UTRCA Comments - EA ToR - Future Marys.pdf" deleted by Jamie Hollingsworth/RJB]

Solid Waste Disposal Needs, St.



FW: Town of St. Marys solid waste disposal needs amended ToR - comments due December 17, 2013

Wright, Wesley (ENE)

to:

Debanjan.Mookerjea@rjburnside.com, jamie.hollingsworth@rjburnside.com

12/17/2013 03:49 PM

Hide Details

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>

To: "Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>,

"jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>,

No comments from the officer assigned to this file at the London District Office.

Thanks,

Wesley



Please consider the environment before printing this email.

---

**From:** Smith, Mark (ENE)

**Sent:** December 17, 2013 3:43 PM

**To:** Wright, Wesley (ENE)

**Subject:** RE: Town of St. Marys solid waste disposal needs amended ToR - comments due December 17, 2013

No comments at this time Wesley.

**Mark Smith**

**Provincial Officer  
Ministry of the Environment  
733 Exeter Road  
London, ON, N6E 1L3**

**Tel: (519) 873-5032**

**Fax: (519) 873-5020**



*Please consider the environment before printing this email!*

---

**From:** Wright, Wesley (ENE)

**Sent:** December 16, 2013 5:27 PM

**To:** Merza, Header (ENE); Diamond, Gerald (ENE); Van Dusen, Jean (ENE); Smith, Ryan (ENE); Smith, Mark (ENE)

**Cc:** Dobrin, Dan (ENE); Kerr, Ian (ENE); Homewood, Angela (ENE)

**Subject:** FW: Town of St. Marys solid waste disposal needs amended ToR - comments due December 17, 2013

**Importance:** High

Hi, everyone. A friendly reminder that I have not yet received comments from you on the amended ToR for the St. Marys solid waste management EA. They are due tomorrow (December 17). If you have already submitted comments to me, I don't seem to have a record of them so kindly re-send them.

Comments received to date: Stefanos Habtom, Dale Gable, Bob Aggerholm, and Mark Harris. Ryan spoke with

me today and indicated he is intending to provide them to me today or tomorrow.

Thanks,

Wesley



Please consider the environment before printing this email.

---

**From:** [wesley.wright@ontario.ca](mailto:wesley.wright@ontario.ca) [<mailto:wesley.wright@ontario.ca>]

**Sent:** November 21, 2013 9:37 AM

**To:** Harris, Mark (ENE)

**Subject:** Town of St. Marys solid waste disposal needs amended ToR - comments due December 17, 2013

Hi, everyone. The Town of St. Marys submitted its proposed ToR for the St. Marys landfill EA in November 2012. there were a number of outstanding issues identified by EAB staff that were unresolved at the time, so the Town took a timeout in order to address these issues. They have now completed those amendments (owing also to a marked delay because the Town changed consultants from CRA to RJ Burnside). Please see the attached for the amended ToR and supporting documentation.

Should you have any comments, please send them to me by December 17, 2013.

Jason: I don't seem to have a record of who the EO is for this project; if you could, please forward this to her/him.

NOTE: the pdf is searchable but if you for any reason require a hardcopy of any of the documents, please let me know ASAP so I can arrange to have it couriered to you.

The first document is a notice sent out by the Town highlighting the nature of the amendments; this may help to guide your review and help you determine if you wish to review or add comments (above and beyond your comments on the November 2012 ToR).

Please let me know if you have any questions or concerns.

File(s) will be available for download until **26 November 2013**:

File: [032339 TOR Ad 2013 Nov.docx](#), 61.86 KB [[Fingerprint](#): 0fa4987a2bd6de55f4442950a9c791e7]

File: [32339 St Marys Study Area-STUDY AREAS.pdf](#), 478.72 KB [[Fingerprint](#): 96c8e2b77acf252fe2ed7b0f7e87a516]

File: [032339 St. Marys Landfill TOR.pdf](#), 13,037.51 KB [[Fingerprint](#): e658e0b7a164c2a34d6ba8c381164de6]

File: [St. Marys updated RoC.pdf](#), 6,487.00 KB [[Fingerprint](#): dd29f2c37f5537626e5ca5f2ba68ed02]

You have received attachment link(s) within this e-mail message sent via Enterprise Attachment Transfer Service. To retrieve the attachment(s), please click on the link(s).

[Accellion File Transfer](#)



FW: Town of St. Marys solid waste disposal needs amended ToR - comments due December 17, 2013

Wright, Wesley (ENE)

to:

jamie.hollingsworth@rjburnside.com, Debanjan.Mookerjea@rjburnside.com

12/17/2013 04:52 PM

Hide Details

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>

To: "jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>,

"Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>

Comments from our SW engineer

Thanks,

Wesley



Please consider the environment before printing this email.

---

**From:** Smith, Ryan (ENE)

**Sent:** December 17, 2013 4:42 PM

**To:** Wright, Wesley (ENE)

**Cc:** Abernethy, Scott (ENE)

**Subject:** RE: Town of St. Marys solid waste disposal needs amended ToR - comments due December 17, 2013

Wesley:

For Surface Water concerns, I have reviewed the document "Proposed Terms of Reference, St. Mary's Future Solid Waste Disposal Needs, Environmental Assessment (Amended)", prepared for the Town of St. Mary's by R.J. Burnside and Associates Limited, dated October 2013.

As such, I offer the following comments:

I note that the previous iteration of the Draft TOR was commented on by Jack Colonello, a Surface Water Specialist in our office. Jack noted on Dec 3, 2012 with regards to a previous iteration of the TOR that he had some concern around the realignment of one of the drainage ditches in the Study area.

Under "Actions to Address MOE Comments on the TOR- Section 9.1.1.2- Surface Water- August 6, 2013", found in "Attachment E4- Additional Agency Consultation Undertaken by Burnside (2013)" in the current iteration of the TOR, the consultant states that "the relocation of the existing municipal drain is not dependent upon the Alternative that is selected through this EA process. We have therefore removed specific discussion in these TOR. Per the general description provided, if an alternative requires relocation of the drain, then the environmental effects of such a relocation effort will be accounted for in the EA process."

I note under "Plan to address comments on the TOR- April 23, 2013" located in the current TOR that the realignment may however be necessary for the existing, ongoing operations of the landfill site. As such, the Region will work with the District to address any



monitoring/water quality impact assessments outside of the EA process if this proposed works occurs.

I have no further concerns with the proposed TOR at this time.

Please feel free to contact me if you require further information regarding the above.

Regards,

Ryan Smith.

**Ryan Smith**

Work: (519) 873-5038

[ryan.smith@ontario.ca](mailto:ryan.smith@ontario.ca)



Please consider the environment before printing this email.

---

**From:** Wright, Wesley (ENE)

**Sent:** December 16, 2013 5:27 PM

**To:** Merza, Header (ENE); Diamond, Gerald (ENE); Van Dusen, Jean (ENE); Smith, Ryan (ENE); Smith, Mark (ENE)

**Cc:** Dobrin, Dan (ENE); Kerr, Ian (ENE); Homewood, Angela (ENE)

**Subject:** FW: Town of St. Marys solid waste disposal needs amended ToR - comments due December 17, 2013

**Importance:** High

Hi, everyone. A friendly reminder that I have not yet received comments from you on the amended ToR for the St. Marys solid waste management EA. They are due tomorrow (December 17). If you have already submitted comments to me, I don't seem to have a record of them so kindly re-send them.

Comments received to date: Stefanos Habtom, Dale Gable, Bob Aggerholm, and Mark Harris. Ryan spoke with me today and indicated he is intending to provide them to me today or tomorrow.

Thanks,

Wesley



Please consider the environment before printing this email.

---

**From:** [wesley.wright@ontario.ca](mailto:wesley.wright@ontario.ca) [<mailto:wesley.wright@ontario.ca>]

**Sent:** November 21, 2013 9:37 AM

**To:** Harris, Mark (ENE)

**Subject:** Town of St. Marys solid waste disposal needs amended ToR - comments due December 17, 2013

Hi, everyone. The Town of St. Marys submitted its proposed ToR for the St. Marys landfill EA in November 2012. there were a number of outstanding issues identified by EAB staff that were unresolved at the time, so the Town took a timeout in order to address these issues. They have now completed those amendments (owing also to a marked delay because the Town changed consultants from CRA to RJ

Burnside). Please see the attached for the amended ToR and supporting documentation.

Should you have any comments, please send them to me by December 17, 2013.

Jason: I don't seem to have a record of who the EO is for this project; if you could, please forward this to her/him.

NOTE: the pdf is searchable but if you for any reason require a hardcopy of any of the documents, please let me know ASAP so I can arrange to have it couriered to you.

The first document is a notice sent out by the Town highlighting the nature of the amendments; this may help to guide your review and help you determine if you wish to review or add comments (above and beyond your comments on the November 2012 ToR).

Please let me know if you have any questions or concerns.

File(s) will be available for download until **26 November 2013**:

File: [032339 TOR Ad 2013 Nov.docx](#), 61.86 KB [Fingerprint: 0fa4987a2bd6de55f4442950a9c791e7]

File: [32339 St Marys Study Area-STUDY AREAS.pdf](#), 478.72 KB [Fingerprint:

96c8e2b77acf252fe2ed7b0f7e87a516]

File: [032339 St. Marys Landfill TOR.pdf](#), 13,037.51 KB [Fingerprint:

e658e0b7a164c2a34d6ba8c381164de6]

File: [St. Marys\\_updated RoC.pdf](#), 6,487.00 KB [Fingerprint: dd29f2c37f5537626e5ca5f2ba68ed02]

You have received attachment link(s) within this e-mail message sent via Enterprise Attachment Transfer Service. To retrieve the attachment(s), please click on the link(s).

[Accellion File Transfer](#)

**Ministry of Tourism, Culture & Sport**  
Culture Division  
Culture Services Unit  
Programs and Services Branch  
401 Bay Street, Suite 1700  
Toronto, ON, M7A 0A7  
Telephone: 416 314 7147  
Facsimile: 416 314 7175  
Email : dan.minkin@ontario.ca

**Ministère du Tourisme de la Culture et du Sport**  
Division de culture  
Unité des services culturels  
Direction des programmes et des services  
401, rue Bay, Bureau 1700  
Toronto, ON, M7A 0A7  
Téléphone: 416 314 7147  
Télécopieur: 416 314 7175  
Email : dan.minkin@ontario.ca



17 December 2013

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6

Dear Mr. Blake,

**Our File No. : 14EA016**  
**Proponent : Town of St. Marys**  
**Project : St. Marys Future Solid Waste Disposal Needs**  
**Subject : Draft Terms of Reference for Environmental Assessment**  
**Location : 1221 Water St. South**  
**Town of St. Marys, County of Perth**

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As part of the *Environmental Assessment Act* process, the Ministry of Tourism, Culture and Sport (MTCS) has an interest in the conservation of cultural heritage resources including archaeological resources, built heritage resources and cultural heritage landscapes.

We have reviewed the November 2013 proposed Terms of Reference for the above-referenced project being undertaken by the Town of St. Marys, and offer the following comments.

#### **Section 5.1.2: Methodology for Evaluating the *Alternatives to the Undertaking***

This section says that the alternatives to the undertaking will be subject to a qualitative screening based on criteria including archaeological resources, heritage structures and heritage landscapes. It is unclear what a “qualitative screening” based on these criteria would entail. In our comments on the November 2012 version of the Terms of Reference, we suggested that the Terms of Reference be amended to commit to technical studies that will identify known and unknown cultural heritage resources, potential effects of the undertaking on them, and preferred mitigation strategies. This comment was not addressed in the Summary of Review Comments table provided in Attachment E2, and in spite of the Proponent Response in the same table that “a section will be added to Section 9.1 to add a Cultural Heritage and Archaeological Assessment”, it remains unclear from the body of the Terms of Reference whether such studies will be included in the Environmental Assessment process or how it will be determined whether they are necessary.

#### **Table 5.4: Evaluation Criteria, Indicators and Data Sources**

This table lists “presence of significant archaeological resources” as an indicator for the Archaeological Resources environmental sub-component. It is unclear what “significant archaeological resources” means. We would expect all archaeological resources to be considered where applicable in the evaluation of alternatives, including any archaeological sites, and lands with archaeological potential if they have not yet been surveyed at the point in the Environmental Assessment process when the evaluation is taking place. Ideally, however, all necessary archaeological surveying would be completed before it became necessary to select a preferred alternative.



**Re: St. Marys Future Solid Waste Disposal Needs Proposed ToR - MTCS  
Comments**

**Jamie Hollingsworth** to: Minkin, Dan (MTCS)

12/19/2013 03:03 PM

Cc: "dblake@town.stmarys.on.ca", "Wright, Wesley (ENE)"

Dan,

Thank you for your comments on the proposed TOR. We are pleased to respond as follows.

*Section 5.1.2: Methodology for Evaluating the Alternatives to the Undertaking*

*This section says that the alternatives to the undertaking will be subject to a qualitative screening based on criteria including archaeological resources, heritage structures and heritage landscapes. It is unclear what a "qualitative screening" based on these criteria would entail. In our comments on the November 2012 version of the Terms of Reference, we suggested that the Terms of Reference be amended to commit to technical studies that will identify known and unknown cultural heritage resources, potential effects of the undertaking on them, and preferred mitigation strategies. This comment was not addressed in the Summary of Review Comments table provided in Attachment E2, and in spite of the Proponent Response in the same table that "a section will be added to Section 9.1 to add a Cultural Heritage and Archaeological Assessment", it remains unclear from the body of the Terms of Reference whether such studies will be included in the Environmental Assessment process or how it will be determined whether they are necessary.*

The qualitative screening is intended to review the sites based on known information prior to the commencement of full EA technical studies to determine if the options remain suitable for investigation. Following this assessment technical studies will be undertaken to determine in more detail the significance and potential level of impact to the technical components. As part of the more detailed studies a qualified person will conduct a review of the site to determine if the potential for archaeological resources exist. Based on our understanding of the previous site use as part of an aggregate extraction operation the site has been previously excavated to a depth of several meters. As such it is our current expectations that the possibility for archaeological resources to exist within the site to be very low. Based on the findings of the site review an additional work plan will be developed for the Cultural Heritage and Archaeological Assessment to be in-line with the potential findings and value of the site. A statement to this effect has been added to section 5.4.6.

*Table 5.4: Evaluation Criteria, Indicators and Data Sources*

*This table lists "presence of significant archaeological resources" as an indicator for the Archaeological Resources environmental sub-component. It is unclear what "significant archaeological resources" means. We would expect all archaeological resources to be considered where applicable in the evaluation of alternatives, including any archaeological sites, and lands with archaeological potential if they have not yet been surveyed at the point in the Environmental Assessment process when the evaluation is taking place. Ideally, however, all necessary archaeological surveying would be completed before it became necessary to select a preferred alternative.*

*The potential data sources for the "presence of significant archaeological resources" indicator include Stage I Archaeological Assessment. Stage I of the Archaeological Assessment process identifies archaeological potential and known archaeological sites; it is in the subsequent stages that surveying is carried out to identify previously unknown archaeological sites. If the intent is to complete an Archaeological Assessment to fully identify archaeological resources, it would be preferable to simply list Archaeological Assessment as the data source rather than a particular stage.*

*Built heritage resources and cultural heritage landscapes are not specifically listed as environmental*

*sub-components in this table, nor elsewhere in the Terms of Reference, and it is unclear from the corresponding potential data sources whether a Heritage Impact Assessment would be carried out.*

The term significant has been replaced with 'or likelihood' in Table 5.4

As described above based on our current understanding of the sites history it is anticipate that nearly all the site has been previously disturbed as part of aggregate extraction operations . As such it is likely that the Stage I portion of the assessment will identify that the site has no archaeological potential . In the event that this is not the case the assessment will continue into the remaining stages , it was our indication to reflect the most likely extent of work required in the Table . It is our intent to complete the review of the site for archaeological potential early in the process to allow adequate time for additional work programs to take place if required .

With respect to the built heritage resources and cultural heritage landscapes , the proposed expansion site occupies the same area as the existing landfill and is adjacent to the Town 's industrial area. As such a Heritage Impact Assessment appears inappropriate and not expected to be carried out under the current EA framework. Similarly in the evaluation of the export option , this option would utilize existing transportation infrastructure and thus similarly a Heritage Impact Assessment is unnecessary .

If you have additional comments or would like to discuss the matters further please do not hesitate to contact the undersigned.

Regards.

Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)

"Minkin, Dan (MTCS)"

Please see attached. Dan Minkin

12/17/2013 06:36:30 PM

From: "Minkin, Dan (MTCS)" <Dan.Minkin@ontario.ca>  
To: "dblake@town.stmarys.on.ca" <dblake@town.stmarys.on.ca>,  
Cc: "St.Marys.Waste.EA@RJBurnside.com" <St.Marys.Waste.EA@RJBurnside.com>  
Date: 12/17/2013 06:36 PM  
Subject: St. Marys Future Solid Waste Disposal Needs Proposed ToR - MTCS Comments

Please see attached.

**Dan Minkin**

Heritage Planner

Ministry of Tourism, Culture and Sport

Culture Division | Programs and Services Branch | Culture Services Unit

401 Bay Street, Suite 1700

Toronto, Ontario M7A 0A7

Tel. 416.314.7147 | Fax. 416.314.7175

[attachment "St Marys Future Solid Waste Disposal Needs ToR - MTCS comment letter-17Dec2013.pdf"  
deleted by Jamie Hollingsworth/RJB]

The potential data sources for the “presence of significant archaeological resources” indicator include Stage I Archaeological Assessment. Stage I of the Archaeological Assessment process identifies archaeological potential and known archaeological sites; it is in the subsequent stages that surveying is carried out to identify previously unknown archaeological sites. If the intent is to complete an Archaeological Assessment to fully identify archaeological resources, it would be preferable to simply list Archaeological Assessment as the data source rather than a particular stage.

Built heritage resources and cultural heritage landscapes are not specifically listed as environmental sub-components in this table, nor elsewhere in the Terms of Reference, and it is unclear from the corresponding potential data sources whether a Heritage Impact Assessment would be carried out.

Thank you for the opportunity to comment on these proposed Terms of Reference. Should you have any questions, please do not hesitate to contact the undersigned.

Best regards,

Dan Minkin  
Heritage Planner  
416.314.7147  
[dan.minkin@ontario.ca](mailto:dan.minkin@ontario.ca)

CC James Hollingsworth

**Ministry of the Environment**

Environmental Assessment and  
Approvals Branch

2 St. Clair Avenue West  
Floor 12A  
Toronto, ON M4V 1L5  
Tel.: 416 314-8298  
Fax: 416 314-8452

**Ministère de l'Environnement**

Direction des évaluations et des  
autorisations environnementales

2, avenue St. Clair Ouest  
Étage 12A  
Toronto, ON M4V 1L5  
Tél. : 416 314-8298  
Télééc. : 416 314-8452



December 16, 2013

MEMORANDUM

TO: Wesley Wright  
Project Officer  
Environmental Assessment Services Section  
Environmental Approvals Branch

FROM: Stefanos Habtom  
Senior Wastewater Engineer  
Environmental Approval Services Section  
Environmental Approvals Branch

RE: Proposed Terms of Reference St. Mary's Future Solid Waste Needs Environmental  
Assessment (Amended)  
EA FILE No. 03-08-02

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Pursuant to your memorandum dated November 20, 2013, I have completed my review of the Proposed Terms of Reference for the St. Mary's Future Solid Waste Needs Environmental Assessment (Amended) dated October 2013. I do not have any additional review comments other than what I provided during the draft TOR review process shown below.

The outline provided in the above noted proposed terms of reference is acceptable with respect to the mandate of the Environmental Approval Services Section, EAB, under Section 53 of the *Ontario Water Resources Act* (OWRA), and we will provide review comments on the Environmental Assessment Report when submitted.

If you require any additional information, please do not hesitate to contact me at (416) 314 8298.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Stefanos Habtom".

---

Stefanos Habtom, P. Eng.

c: Edgar Tovilla, Supervisor (A), Environmental Approval Services Section, EAB



**Ministry of  
the Environment**

Environmental Approvals  
Branch

2 St. Clair Avenue West  
Floor 12A  
Toronto ON M4V 1L5  
Tel.: 416 314-8001  
Fax: 416 314-8452

**Ministère de  
l'Environnement**

Direction des autorisations  
environnementales

2, avenue St. Clair Ouest  
Étage 12A  
Toronto ON M4V 1L5  
Tél : 416 314-8001  
Télééc. : 416 314-8452



**MEMORANDUM**

December 18, 2013

**To:** Wesley Wright, Project Officer  
Environmental Assessment Services - Project Coordination Section  
Environmental Approvals Branch

**From:** Dale Gable, P.Eng.  
Supervisor – Team 1  
Approval Services Section  
Environmental Approvals Branch

**Re:** Review of the Proposed Terms of Reference for the St. Marys Landfill  
Site Capacity Expansion - Environmental Assessment  
EA File No. 03-08-02

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As per your request, I have reviewed the additional/amended documents submitted by the Town of St. Marys in November 2013. Based on my review, I have no additional comments to my December 18, 2012 memorandum in which was submitted to you.

If you have any questions, please contact me at (416) 314-8317.

Regards,

A handwritten signature in black ink, appearing to read "Dale Gable".

Dale Gable, P.Eng.  
Supervisor  
Environmental Assessment – Approvals Services Section



**Re: St. Marys - Aboriginal consultation** 

**Jamie Hollingsworth** to: Wright, Wesley (ENE)

12/16/2013 12:05 PM

Cc: "Debanjan.Mookerjea@rjburnside.com", "Dave Blake", Andrew Evans

Wesley;

1. OASS Contact List:

Regarding development of the aboriginal community contact list with the Ontario Secretariat for Aboriginal Affairs (OASS):

- CRA's November 2012 Record of Consultation (Appendix E, Attachment E1 of the TOR, provided on a DVD as a searchable PDF) references the OSAA having been contacted to provide a list of aboriginal communities that should be consulted. See PDF page numbers 7 and 443 of the file (032339 CRA Nov 2012 Record of Consultation.pdf) in this regard.
- CRA's letter/request to OSAA is not included in their Record of Consultation, nor does Burnside have a copy.
- Per item 3 of our March 28, 2013 meeting minutes (TOR, PDF page number 216), you had indicated that the existing (CRA) consultation list was acceptable. (follow-up contact with the Haudenosaunee Documentation Committee (HDC) had been omitted from some of the correspondence/consultation efforts. This was subsequently corrected by the Town and Burnside (see Appendix E, Section 3.2 and Attachment .E3b of the draft TOR)).
- In the draft Terms of Reference, page 224 of the PDF, there is an email forwarded by you attaching updated contact information from the MOE's Aboriginal Affairs Branch. It was noted that the CRA had contacted OSAA to obtain the list of aboriginal communities.

I had presumed that your email (final bullet above) was sufficient to show that the aboriginal community contact list was compiled appropriately. However, I would be happy to revise Appendix E if you want to provide a copy of the correspondence referenced by your colleague, Ms. Lareina Rising.

2. Comments from Aboriginal Communities:

During the first week of December, Burnside contacted the aboriginal communities by telephone to follow-up on the draft TOR that was submitted. I am attaching a draft Word file that contains the notes collected by my colleague, Ashley Gallagher (AG in the file). I have not reviewed or edited this file as yet, though it will become the basis of Burnside's up-dated aboriginal communities contact list and a part of our Record of Consultation, to be submitted with the finalized TOR.

To date, neither the Town nor Burnside have received any comments from aboriginal communities beyond those noted from my colleague's phone contact efforts. None of those had any impact on the content of the draft TOR.

3. Aboriginal Contact Information:

As noted in item #2, I have attached a draft Word file that contains the most up-to-date version of the aboriginal contact information. Burnside will be cleaning-up the file and possibly formatting it for use in the finalized TOR.

I trust this draft Word file is sufficient for your current needs. I do not expect it will be put into final form until later this week.

4. Other Consultation Efforts:

On the Town's behalf, Burnside has also contacted the agencies and adjacent municipalities by

telephone to see that they obtained the draft TOR. Two agencies requested an email. All of this will be documented similarly to the aboriginal communities contact efforts .

We have also received the following correspondence since my previous email update (27-Nov-2013):

- Update from Ministry of Natural Resources regarding the aggregate extraction license that applies to the existing landfill and the surrounding properties . They suggested a further revision to Table 5.4 which I feel is acceptable and will therefore be incorporated into the revised /finalized TOR.
- Passmore Family - local land owner, concerned with odours if landfill is expanded . You were copied on this correspondence.
- Upper Thames River Conservation Authority - comments on the TOR. You were copied by UTRCA on the email submitting their letter. No response has been prepared as yet, though I am aiming to do so this week.
- Festival Hydro - local electrical utility , telephone conversation: Asked if the TOR included discussion of electrical needs for the site , replied that it does not. Festival Hydro indicated that they have no concerns with the TOR and that any and all future hydro demand requirements will have to go through the appropriate approval channels.
- You have passed two sets of comments from your MOE colleagues... one for groundwater (email of 3-Dec-2013) which will be added to our Record of Consultation but require no changes to the TOR. A second set of comments, for surface water (email dated today) has not yet been reviewed.

I believe that covers all of the consultation efforts . All of this will be reported upon in the updated Record of Consultation.

I trust all of the above (and attached) addresses your current needs. Please feel free to contact me if I can be of any further assistance.

Take Care,  
Jamie



James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering, Ontario L1V 7G7  
[jamie.hollingsworth@rjburnside.com](mailto:jamie.hollingsworth@rjburnside.com)  
tel: 905.420.5777 ext. 803  
fax: 905.420.5247  
[www.rjburnside.com](http://www.rjburnside.com)



UPDATE\_\_032339\_St Marys Landfill FN TOR Consultation Summary.doc

"Wright, Wesley (ENE)"

Hi, Jamie. Page 41 of the ToR states that t...

12/16/2013 09:53:43 AM

From: "Wright, Wesley (ENE)" <Wesley.Wright@ontario.ca>  
To: "jamie.hollingsworth@rjburnside.com" <jamie.hollingsworth@rjburnside.com>,  
Cc: "Debanjan.Mookerjea@rjburnside.com" <Debanjan.Mookerjea@rjburnside.com>  
Date: 12/16/2013 09:53 AM  
Subject: St. Marys - Aboriginal consultation

Hi, Jamie. Page 41 of the ToR states that the list of 14 Aboriginal communities was provided by OSAA – can you please either fwd the correspondence (letter/email) to me, or direct me to where in the ToR I can find it?

Have you received any responses from the Aboriginal communities on the amended ToR? If so, pls fwd to me as I have not seen these.

Lastly, if you have contact info at each of the Aboriginal communities other than what is listed on the Chiefs of Ontario website (which is generally the Chief), please forward that information to me.

To prioritize the above:

- Aboriginal contact information to me optimally by noon today (it should already be in a single document that you can simply forward to me)
- Response(s) by Aboriginal communities – to me by 2 PM today
- OSAA letter – by end of day today

Thanks,

Wesley Wright | Project Officer

**Environmental Approvals Branch | Ministry of the Environment**

2 St. Clair Avenue West, Floor 12A | Toronto ON | M4V 1L5

T 416.325.5500 | TF 1.800.461.6290 | F 416.314.8452 | E [wesley.wright@ontario.ca](mailto:wesley.wright@ontario.ca)



Please consider the environment before printing this email.



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**Attachment E5  
Landowner Consultation Undertaken  
by Burnside (2013)**

PROPNUM	Primary Owner	Secondary Owner	Address1	Address2	CityProv	PostalCode
312014000510700	UNION GAS LIMITED		PROPERTY TAX DEPARTMENT	50 KEIL DRIVE NORTH	CHATHAM ON	N7M 5M1
312009000699900	CANADIAN NATIONAL RAILWAY	COMPANY	ATT SUPERVISOR CONTRACTS & 150 RESEARCH LANE	1 ADMINISTRATION RD SUITE 200	CONCORD ON GUELPH, ON	L4K 1B9 N1G 4T2
312014000515200	NUTRECO CANADA INC					
312014000510400	MCCURDY TAMMY BARBARA	MCCURDY JASON REGINALD	1760 PERTH RD 123	P O BOX 18	KIRKTON ON	N0K 1K0
312014000515900	SUNOVA FARMS INC	C/O STEVE & MONICA DE BOER	256778 LINE 25	RR 2 STN MAIN	LAKESIDE ON	N0M 2G0
311600006022775	DANA CANADA INC		ATTENTION: TAX DEPARTMENT	PO BOX 3029 STN MAIN	ST CATHARINES ON	L2R 7K9
312014000415800, 312014000515100, 312014000515600	ST MARYS CEMENT COMPANY A	DIVISION OF ST MARYS CEMENT	ATTN: LISA BALDI, EXEC ASSIS	55 INDUSTRIAL STREET	TORONTO ON	M4G 3W9
311600008099900	CANADIAN NATIONAL RAILWAY COMPANY	CN REAL ESTATE MANAGEMENT	C/O MANAGER PROPERTY TAX	277 FRONT ST W 8TH FLOOR	TORONTO ON	M5V 2X4
311600007020900	ST MARYS CEMENT COMPANY	A DIVISION OF ST MARYS	410 WAVERLY RD	R.R. #2	BOWMANVILLE, ON	L1C 3K3
311600007021200	RIORDAN ARTHUR D ESTATE		C/O CHERYL RIORDAN	129 ARBOUR GLEN CRES	LONDON, ON	N5Y 2A4

PROPNUM	PrimaryOwner	SecondaryOwner	Address1	Address2	CityProv	PostalCode
312014000514900	1/2 CENTURY HOLDINGS INC		PO BOX 789 STN MAIN		ST MARYS ON	N4X 1B5
312014000510915	BAFFES ANGELA HELEN	SMIT JOHANNES ADRIANUS	1642 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000510800	BATTEN KELLY	WEESSIES CHRISTINE	4468 LINE 3	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000510610	BLACKLOCK RICHARD JAMES	BLACKLOCK CANDICE LOUISE	1730 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000511300.						
312014000511410	BRADLEY GLENN WILBUR	BRADLEY MARGARET JEAN	4642 LINE 3	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000510605	CARLBERG DAVID ROY	RICHARDSON MARLENE FERN	PO BOX 624 STN MAIN		ST MARYS ON	N4X 1B4
312014000510900	CARR LYNN MARIE	CARR WILLIAM JOHN	1628 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
311600007021700	CHRISTIE BRIAN KEITH	CASSAR EVELYN ROSE	25 FRONT ST	GENERAL DELIVERY	ST MARYS ON	N4X 1B9
312014000511000	CLOSE JEREMIAH JACKSON	KIPFER CASSIE LEE	4469 LINE 3	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000510940	FOSTER GLORIA YVONNE	FOSTER CLARENCE ALLEN	1668 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000511002	GRATTON RICHARD DAVID HUGH	GRATTON KIMBERLEY ANNE	4461 LINE 3	R R 3	ST MARYS ON	N4X 1C6
312014000511004	GROVER MICHAEL ALBERT VINCEN	GROVER PHYLLIS ELAINE	4457 LINE 3	R R 3	ST MARYS ON	N4X 1C6
312014000510500	HEARD WILLIAM DOUGLAS	HEARD AUDREY EILEEN	PO BOX 1592 STN MAIN		ST MARYS ON	N4X 1B9
312014000511400	HUESTON KNOWLSON BROCK	HUESTON BONNIE BELLE	4546 LINE 3	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000510420	KING WILLIAM FRANKLIN	KING JULIE ANN	1740 PERTH RD 123	P O BOX 1285	ST MARYS ON	N4X 1B8
312014000511074	LANDOWNER		4469 LINE 3	R R 3	ST MARYS ON	N4X 1C6
311600006022805	MAPLE LEAF FOODS INC	T/A SHURGAIN	ATTN TOM WARREN	600 JAMES ST S RR 4	ST MARYS ON	N4X 1C7
312014000510300	MCCURDY DANIEL WAYNE	MCCURDY KRISTENE ANNE	1764 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000515800	MUIR TRACEY LYNN	GRENDA CHRISTOPHER JOHN	1602 PERTH RD 123	BOX 406	ST MARYS ON	N4X 1B2
312014000510410	MUMBERSON MARY LYNN	MILLER DANIEL CHARLES	1748 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000510920	PARTRIDGE RANDY CLAYTON	PARTRIDGE WENDY LOUISE	1646 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000511200,						
312014000511225	PASSMORE ROBERT MITCHELL	PASSMORE CAROL ANN	4495 LINE 3	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000510925	PENNER ROLAND LLOYD	PENNER DORIS INGA	1652 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000415700	PERTH SOUTH TOWNSHIP		C/O MUNICIPAL CLERK	3191 RD 122	ST PAULS ON	NOK 1V0
312014000510620	POWELL ERNEST WILLIAM	POWELL AMY	1720 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000510935	PRIMEAU NEIL JOSEPH	PRIMEAU ELAINE RACHEL	PO BOX 2437		ST MARYS ON	N4X 1A3
311600007021600	REID JOHN HUGH	REID ROSEMARY KATHERINE	PO BOX 512 STN MAIN		ST MARYS ON	N4X 1B3
312014000510105,						
312014000510200	RIORDAN ZORA		1774 PERTH RD 123	R R 3	ST MARYS ON	N4X 1C6
312014000510615	RODWELL DOUGLAS BRUCE	RODWELL CATHERINE ANNE	1726 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000511070	SOUTTER GORDON HENDERSON		57 30 ANN ST		ST MARYS ON	N4X 1C8
311600007021400,						
311600007021500,						
311600007021000,						
311600008002600	ST MARYS CEMENT COMPANY	A DIVISION OF ST MARYS	PO BOX 1000 STN MAIN		ST MARYS ON	N4X 1B6
311600006022801	ST MARYS TOWN	DAVE BLAKE	PO Box 998, 408 James St. S.		ST MARYS ON	N4X 1B6
312014000516000	VAN NES JACOBUS JOHANNES	VAN NES TERESA MARIE	3516 RD 119	RR 2 STN MAIN	STRATFORD ON	N5A 6S3
312014000510945	VERHULST JACOBUS MARINES	VERHULST TRYNTJE MARIA	1670 PERTH RD 123	RR 3 STN MAIN	ST MARYS ON	N4X 1C6
312014000510930	WESTON BRIAN KEITH		1654 RD 123	R R 3	ST MARYS ON	N4X 1C6
311600007021900	WIEGERS ANNA MARIA C		RR 3 STN MAIN		ST MARYS ON	N4X 1C6



November 15, 2013

Via: Courier

UNION GAS LIMITED  
PROPERTY TAX DEPARTMENT  
50 KEIL DRIVE NORTH  
CHATHAM ON N7M 5M1

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment**  
File No.: 300032339.0000

Parcel(s): 312014000510700

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an Individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity,
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's web site, <http://townofstmarys.com/>. You can find it by clicking on the scrolling banner or going to the *Town Services, Garbage and Recycling* page. Paper copies of the full ToR are available for review at the following locations:

- Town Hall: 175 Queen Street East, St. Marys, ON N4X 1B6
- Municipal Operations Centre: 408 Jemee St. S., St. Marys, ON N4X 1B6

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 988  
St. Marys, ON N4X 1B6  
Phone: 519-294-2340 Ext. 209  
Fax: 519-294-0902  
Email: dblake@town.stmarys.on.ca

Jamee Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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

Yours truly,

R.J. Burnside & Associates Limited

Jamee R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

cc: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability.docx  
15/11/2013 11:35 AM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	Jamee R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamee.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

032339 TOR Request Form.docx 15/11/2013 10:02 AM



View Shipment Details

*Residence  
Landowners.*



Shipment Date  
2013-11-15  
To  
Union Gas Limited  
50 Kell Drive North  
CHATHAM, Ontario  
Canada, N7M5M1

Created  
2013-11-15 01:05 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330018864001	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery	No		
Signature Required			

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



Tracking Details

Shipment Status

Package Status

Package Tracking Number: 330018864001

[View proof of delivery and signature](#)



Delivered

Monday, November 18, 2013 3:27 p.m.

Received by: Mctavish

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Chatham, ON, CA
Shipment Date	Nov 15, 2013		

History

Date	Local Time	Location	Description
Nov 18, 2013	3:27 p.m.	Chatham, ON	Shipment delivered to MCTAVISH at SHIP DOCK
Nov 18, 2013	10:18 a.m.	Chatham, ON	On vehicle for delivery
Nov 18, 2013	4:08 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 16, 2013	2:40 p.m.	Purolator	Shipping label created

Shipment Summary

Tracking #	Deliver By	Status
330018864001	Nov 18, 2013	Delivered
Packages 1 to 1 of 1		



November 15, 2013

Via: Courier

CANADIAN NATIONAL RAILWAY  
COMPANY  
ATT SUPERVISOR CONTRACTS &  
1 ADMINISTRATION RD  
CONCORD ON L4K 1B9

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment**  
File No.: 300032339.0000

Parcel(s): 312009000699900

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
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- Town Hall: 175 Queen Street East, St. Marys, ON N4X 1B8
- Municipal Operations Centre: 408 James St. S., St. Marys, ON N4X 1B6

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B8  
Phone: 519-294-2340 Ext. 209  
Fax: 519-294-0902  
Email: dbleke@townofstmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft ToR. This will include a table summarizing all comments received and a response to each comment raised, including how the ToR was modified to address the comment. The amended draft ToR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability.docx  
09/12/2013 11:35 AM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

032339 TOR Request Form.docx 10/15/2013 10:02 AM

## View Shipment Details



**Shipment Date**  
 2013-11-15  
**To**  
 Canadian National Railway  
 1 Administration Rd.  
 CONCORD, Ontario  
 Canada, L4K1B9

**Created**  
 2013-11-15 01:10 PM  
**From**  
 R. J. Bumsida  
 Jamie Hollingsworth, P.Eng.  
 1485 PICKERING Parkway  
 Suite # 200  
 PICKERING, Ontario  
 Canada, L1V7G7  
 1-(905)420-5777 x800

<b>PIN</b>	330018873860	<b>Adjusted Weight</b>	1.00 lb
<b>Ship Type</b>	Regular	<b>Transit Time (days)</b>	1
<b>Package Type</b>	Express Envelope	<b>Cost</b>	\$0.00
<b>Number of pieces</b>	1	<b>Tax</b>	\$0.00
<b>Premium Service</b>	Purolator Express Envelope	<b>Total</b>	\$0.00

**Hold For Pickup (receiver will pick up shipment)** No  
**Declared Value** \$0.00  
**Bill To** Sender  
**Dangerous Goods** No  
**Chain Of Signature** No  
**OSNR-Signature Not Required** No  
**Residential Delivery Signature Required** No

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



## Tracking Details

Shipment Status

### Package Status

Package Tracking Number: 330018873860

[View more details](#)

**Delivered**  
 Monday, November 18, 2013 10:07

a.m.  
Signature not required

<b>Service</b>	Purolator Express Envelope	<b>From</b>	Pickering, ON, CA
<b>Est. Shipment Weight</b>	1 lb.	<b>To</b>	Concord, ON, CA
<b>Shipment Date</b>	Nov 15, 2013		

### History

Date	Local Time	Location	Description
Nov 18, 2013	10:07 a.m.	Vaughan, ON	Shipment delivered at MAIL ROOM
Nov 18, 2013	7:38 a.m.	Vaughan, ON	On vehicle for delivery
Nov 18, 2013	12:44 a.m.	Vaughan, ON	Arrived at sort facility
Nov 15, 2013	7:54 p.m.	Toronto Sort Centre (Y), ON	Arrived at sort facility
Nov 15, 2013	4:05 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 15, 2013	2:40 p.m.	Purolator	Shipping label created

### Shipment Summary

Tracking # 330018873860  
 Delivered By Nov 18, 2013  
 Status Delivered  
 Packages 1 of 1



November 15, 2013

Via: Courier

NUTRECO CANADA INC  
150 RESEARCH LANE  
SUITE 200  
GUELPH, ON N1G 4T2

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

Parcel(s): 312014000515200

The Town of St. Marye (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the Identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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- Municipal Operations Centre: 408 James St. S., St. Marye, ON N4X 1B6

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 988  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0802  
Email: dblake@townofstmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 8H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marye

032339 TOR Availability.docx  
15/11/2013 11:58 AM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jenie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

032339 TOR Request Form.docx 10/15/2013 10:02 AM

## View Shipment Details



Shipment Date  
2013-11-15  
To  
Nutreco Canada Inc.  
150 RESEARCH LANE  
GUELPH, Ontario  
Canada, N1G4T2

Created  
2013-11-15 01:12 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1455 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330018877333	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery Signature Required	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



## Tracking Details

Shipment Status

### Package Status

Package Tracking Number: 330018877333

[View proof of delivery and signature](#)



Delivered

Monday, November 18, 2013 9:42 a.m.

Received By: Jen

Service	Purolator Express Envelope	From To	Pickering, ON, CA Guelph, ON, CA
Est. Shipment Weight	1 lb.		
Shipment Date	Nov 16, 2013		

### History

Date	Local Time	Location	Description
Nov 16, 2013	9:42 a.m.	Guelph, ON	Shipment delivered to JEN at RECEPTION
Nov 18, 2013	6:59 a.m.	Guelph, ON	On vehicle for delivery
Nov 16, 2013	7:54 p.m.	Toronto Sort Cntr Trl, ON	Arrived at sort facility
Nov 16, 2013	4:08 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 16, 2013	2:40 p.m.	Purolator	Shipping label created

### Shipment Summary

Tracking #	Deliver By	Status
330018877333	Nov 18, 2013	Delivered
Packages 1 to 1 of 1		



November 15, 2013

Via: Courier

MCCURDY TAMMY BARBARA  
MCCURDY JASON REGINALD  
1790 PERTH RD 123  
P O BOX 18  
KIRKTON ON N0K 1K0

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000

Parcel(s): 312014000510400

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- Municipal Operations Centre: 408 James St. S., St. Marys, ON N4X 1B6

\*NOTE: Sent via Purolator (courier) on November 15, 2013 but was returned December 17, 2013 noted unable to deliver due to required appointment to deliver

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: d.blake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
Phone: 905-420-5777 Ext. 803  
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R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability.docx  
15/11/2013 11:35 AM

## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

032339 TOR Request Form.docx 15/11/2013 10:02 AM



handwritten  
McCurdy Tommy  
Barbara

### Tracking Details

#### Shipment Status

Shipment Created      Picked Up      **Attention**      Delivered

#### Package Status

Package Tracking Number: 330018884149

[View more details](#)



#### Attention

#### Estimated Time of Delivery Not Available

Appointment required for delivery. Receiver will be contacted to reschedule delivery

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Kirkton, ON, CA
Shipment Date	Nov 15, 2013		
Original Delivery	Nov 18, 2013		

#### History

Date	Local Time	Location	Description
Nov 27, 2013	9:14 a.m.	Stratford, ON	Appointment required for delivery. Receiver will be contacted to reschedule.
Nov 26, 2013	9:12 a.m.	Stratford, ON	Appointment required for delivery. Receiver will be contacted to reschedule.
Nov 25, 2013	9:44 a.m.	Stratford, ON	Appointment required for delivery. Receiver will be contacted to reschedule.
Nov 22, 2013	8:53 a.m.	Stratford, ON	Appointment required for delivery. Receiver will be contacted to reschedule.
Nov 21, 2013	8:58 a.m.	Stratford, ON	Appointment required for delivery. Receiver will be contacted to reschedule.
Nov 20, 2013	9:10 a.m.	Stratford, ON	Appointment required for delivery. Receiver will be contacted to reschedule.
Nov 19, 2013	8:54 a.m.	Stratford, ON	Appointment required for delivery. Receiver will be contacted to reschedule.
Nov 18, 2013	4:30 p.m.	Stratford, ON	Appointment required for delivery. Receiver will be contacted to reschedule.
Nov 18, 2013	3:12 p.m.	Stratford, ON	Attempted delivery - incomplete / incorrect address provided
Nov 18, 2013	8:41 a.m.	Stratford, ON	On vehicle for delivery
Nov 15, 2013	4:06 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 15, 2013	1:21 p.m.	Purolator	Shipping label created

#### Shipment Summary

Tracking #	Deliver By	Status
330018884149	Not Available	Attention

Packages 1 to 1 of 1

#### E-mail Notifications

Get notified by e-mail as soon as your shipment is delivered.

#### From

Name

E-mail

#### To

Name

E-mail

Notify of  Delivery

[Terms of Use](#)

Send

handanner

## View Shipment Details

**Shipment Date**

2013-11-15

**To**

McCurdy Tammy Barbara  
1760 Perth Road  
Suite # 123  
KIRKTON, Ontario  
Canada, N0K1K0

**Created**

2013-11-15 01:15 PM

**From**

R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

<b>PIN</b>	330018884149	<b>Adjusted Weight</b>	1.00 lb
<b>Ship Type</b>	Regular	<b>Transit Time (days)</b>	1
<b>Package Type</b>	Express Envelope	<b>Cost</b>	\$0.00
<b>Number of pieces</b>	1	<b>Tax</b>	\$0.00
<b>Premium Service</b>	Purolator Express Envelope	<b>Total</b>	\$0.00
<b>Hold For Pickup (receiver will pick up shipment)</b>	No		
<b>Declared Value</b>	\$0.00		
<b>Bill To</b>	Sender		
<b>Dangerous Goods</b>	No		
<b>Chain Of Signature</b>	No		
<b>OSNR-Signature Not Required</b>	No		
<b>Residential Delivery Signature Required</b>	No		

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.





November 15, 2013

Via: Courier

SUNOVA FARMS INC  
C/O STEVE & MONICA DE BOER  
258775 LINE 25  
RR 2 STN MAIN  
LAKESIDE ON N0M 2G0

Re: **Town of St. Marys Future Solid Waste Disposal Needs**  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000  
Parcel(s): 312014000515900

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

- review additional or alternative waste diversion efforts, minimizing the need for disposal capacity,
- consider either expanding the existing Town landfill site or directing waste to alternative disposal facilities, and
- describe the evaluation criteria, indicators and data sources that will be used during the EA process.

The full ToR is now available for download on the Town's web site, <http://www.stmarys.com/>. You can find it by clicking on the scrolling banner or going to the *Town Services, Garbage and Recycling* page. Paper copies of the full ToR are available for review at the following locations:

- Town Hall: 175 Queen Street East, St. Marys, ON N4X 1B6
- Municipal Operations Centre: 408 James St. S., St. Marys, ON N4X 1B6

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@town.stmarys.on.ca

Jamie Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the ToR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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

Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability.docx  
18/11/2013 11:28 AM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by:	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postcode: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## View Shipment Details



**Shipment Date**  
 2013-11-15  
**To**  
 Sunova Farms Inc.  
 256778 Line 25  
 RR 2 Stn. Main  
 LAKESIDE, Ontario  
 Canada, N0M2G0

**Created**  
 2013-11-15 01:21 PM  
**From**  
 R. J. Burnside  
 Jamie Hollingsworth, P. Eng.  
 1466 PICKERING Parkway  
 Suite # 200  
 PICKERING, Ontario  
 Canada, L1V7G7  
 1-(905)420-5777 x800

<b>PIN</b>	330018896093	<b>Adjusted Weight</b>	1.00 lb
<b>Ship Type</b>	Regular	<b>Transit Time (days)</b>	1
<b>Package Type</b>	Express Envelope	<b>Cost</b>	\$0.00
<b>Number of pieces</b>	1	<b>Tax</b>	\$0.00
<b>Premium Service</b>	Purolator Express Envelope	<b>Total</b>	\$0.00
<b>Hold For Pickup (receiver will pick up shipment)</b>	No		
<b>Declared Value</b>	\$0.00		
<b>Bill To</b>	Sender		
<b>Dangerous Goods</b>	No		
<b>Chain Of Signature</b>	No		
<b>OSNR-Signature Not Required</b>	No		
<b>Residential Delivery</b>	No		
<b>Signature Required</b>			

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



## Tracking Details

Shipment Status

**Package Status**  
 Package Tracking Number: 330018896093 [View proof of delivery and signature](#)

**Delivered**  
 Monday, November 18, 2013 10:36 a.m.  
 Received By: Steve Deboer

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	Lakeside, ON, CA
Shipment Date	Nov 18, 2013		

**History**

Date	Local Time	Location	Description
Nov 18, 2013	10:36 a.m.	Stratford, ON	Shipment delivered to STEVE DEBOER at AT DCCR
Nov 18, 2013	8:32 a.m.	Stratford, ON	On vehicle for delivery
Nov 15, 2013	7:53 p.m.	Toronto Sort Ctr/Ch-TL, ON	Arrived at sort facility
Nov 15, 2013	4:06 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 15, 2013	2:40 p.m.	Pickering	Shipping label created

Shipment Summary		
Tracking #	Deliver By	Status
330018896093	Nov 18, 2013	Delivered
Packages 1 to 1 of 1		



November 15, 2013

Via: Mail

DANA CANADA INC  
ATTENTION: TAX DEPARTMENT  
PO BOX 3029 STN MAIN  
ST CATHARINES ON L2R 7K9

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment**  
File No.: 300032339.0000

Parcel(s): 311600006022775

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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- Town Hall: 175 Queen Street East, St. Marys, ON N4X 1B6
- Municipal Operations Centre: 408 James St. S., St. Marys, ON N4X 1B6

\*NOTE: Sent via courier (Purolator) on  
Nov. 15, 2013, Purolator returned parcel  
Sent out via Postal Service (Mail).

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2540 Ext. 209  
Fax: 519-284-0502  
Email: dblake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

cc: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

012339 TOR Availability.docx  
15/11/2013 11:32 AM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_  
Signature \_\_\_\_\_ Date \_\_\_\_\_



November 15, 2013

Via: Courier

ST MARYS CEMENT COMPANY A  
 DIVISION OF ST MARYS CEMENT  
 ATTN: LISA BALDI, EXEC ASSIS  
 55 INDUSTRIAL STREET  
 TORONTO ON M4G 3W9

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment**  
 File No.: 300032339.0000

Parcel(s): 312014000415800, 312014000515100, 312014000515800

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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- Municipal Operations Centre: 406 James St. S., St. Marys, ON N4X 1B6

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 598  
 St. Marys, ON N4X 1B6  
 Phone: 519-294-2340 Ext. 209  
 Fax: 519-264-0902  
 Email: dblake@townofstmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1V 6H9  
 Phone: 905-420-5777 Ext. 803  
 Fax: 905-420-5247  
 Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability.docx  
 15/11/2013 11:35 AM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by <b>November 30, 2013</b> to:	
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a printed copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ Fax: ( ) \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## View Shipment Details



Shipment Date  
2013-11-15  
To  
St. Marys Cement Company  
55 INDUSTRIAL ST  
EAST YORK, Ontario  
Canada, M4G3W9

Created  
2013-11-15 01:28 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1466 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330018911033	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00
Hold For Pickup (receiver will pick up shipment)	No		
Declared Value	\$0.00		
Bill To	Sender		
Dangerous Goods	No		
Chain Of Signature	No		
OSNR-Signature Not Required	No		
Residential Delivery	No		
Signature Required			

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



## Tracking Details

### Shipment Status

#### Package Status

Package Tracking Number: 330018911033

[View proof of delivery and signature](#)

**Delivered**  
Monday, November 18, 2013 10:57 a.m.

Received By: Debbie

Service	Purolator Express Envelope	From	Pickering, ON, CA
To		To	East York, ON, CA
Est. Shipment Weight	1 lb.		
Shipment Date	Nov 15, 2013		

#### History

Date	Local Time	Location	Description
Nov 18, 2013	10:57 a.m.	Toronto (west/ouse), ON	Shipment delivered to DEBBIE at RECEPTION
Nov 18, 2013	6:12 a.m.	Toronto (west/ouse), ON	On vehicle for delivery
Nov 18, 2013	1:22 a.m.	Toronto (west/ouse), ON	Arrived at sort facility
Nov 16, 2013	7:53 p.m.	Toronto Sort Centre TR, ON	Arrived at sort facility
Nov 16, 2013	4:55 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 15, 2013	2:40 p.m.	Purolator	Shipping label created

#### Shipment Summary

Tracking #	Deliver By	Status
330018911033	Nov 18, 2013	Delivered

Packages 1 to 1 of 1



November 15, 2013

Via: Courier

CANADIAN NATIONAL RAILWAY  
COMPANY  
CN REAL ESTATE MANAGEMENT  
CIO MANAGER PROPERTY TAX  
277 FRONT ST W 8TH FLOOR  
TORONTO ON M5V 2X7

Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300022339.0000

Parcel(s): 311600008099900

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (TOR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed TOR. Draft TOR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the TOR. The revised TOR has enhanced the proposed EA work program to:

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- Municipal Operations Centre: 408 James St. S., St. Marys, ON N4X 1B6

Please submit any comments you may have on the revised TOR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 988  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: d.blake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 7G7  
Phone: 905-420-5777 Ext. 603  
Fax: 905-420-5247  
Email: St.Marys.Waste\_EA@RJBurnside.com

Comments received by December 17, 2013 will be incorporated into an amended draft TOR. This will include a table summarizing all comments received and a response to each comment raised, including how the TOR was modified to address the comment. The amended draft TOR will then be submitted to The Ministry of the Environment for review. Once approved by the Minister, the TOR will serve as a guide to the Town, the public, government agencies and Aboriginal communities for the preparation and review of the EA. Any comments received after December 17, 2013 will be forwarded to the Ministry and will become part of the EA record. Consultation programs will continue throughout the EA process.

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Westey Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability.docx  
15/11/2013 11:35 AM



## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300022339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng., Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

032339 TOR Request Form.docx 15/11/2013 10:02 AM

## View Shipment Details



Shipment Date  
2013-11-15  
To  
Canadian National Railway  
277 Front Street W.  
Floor # 8  
TORONTO, Ontario  
Canada, M5V2X4

Created  
2013-11-15 01:32 PM  
From  
R. J. Burnside  
Jamie Hollingsworth, P.Eng.  
1465 PICKERING Parkway  
Suite # 200  
PICKERING, Ontario  
Canada, L1V7G7  
1-(905)420-5777 x800

PIN	330018918806	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00

Hold For Pickup (receiver will pick up shipment)	No
Declared Value	\$0.00
Bill To	Sender
Dangerous Goods	No
Chain Of Signature	No
OSNR-Signature Not Required	No
Residential Delivery Signature Required	No

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.



## Tracking Details

Shipment Status

### Package Status

Package Tracking Number: 330018918806

[View proof of delivery and signature](#)

**Delivered**  
Wednesday, November 20, 2013 9:13

a.m.

Received By: Wendy

Service	Purolator Express Envelope	From To	Pickering, ON, CA Toronto, ON, CA
Est. Shipment Weight	1 lb.		
Shipment Date	Nov 15, 2013		

### History

Date	Local Time	Location	Description
Nov 20, 2013	9:13 a.m.	Mississauga (west/central), ON	Shipment delivered to WENDY at MAIL ROOM
Nov 20, 2013	7:46 a.m.	Mississauga (west/central), ON	On vehicle for delivery
Nov 20, 2013	2:00 a.m.	Mississauga (west/central), ON	Arrived at sort facility
Nov 19, 2013	2:12 p.m.	Toronto (downtown/Ville), ON	Arrived at sort facility
Nov 19, 2013	2:09 p.m.	Toronto (downtown/Ville), ON	Attempted delivery - incomplete / incorrect address provided
Nov 19, 2013	8:00 a.m.	Toronto (downtown/Ville), ON	Attempted delivery - incomplete / incorrect address provided
Nov 19, 2013	7:09 a.m.	Toronto (downtown/Ville), ON	Attempted delivery - incomplete / incorrect address provided
Nov 18, 2013	3:18 p.m.	Toronto (downtown/Ville), ON	Attempted delivery - incomplete / incorrect address provided
Nov 10, 2013	3:07 p.m.	Toronto (downtown/Ville), ON	Attempted delivery - incomplete / incorrect address provided
Nov 18, 2013	8:05 p.m.	Toronto (downtown/Ville), ON	Attempted delivery - incomplete / incorrect address provided
Nov 18, 2013	1:44 p.m.	Toronto (downtown/Ville), ON	Attempted delivery - incomplete / incorrect address provided
Nov 18, 2013	7:19 a.m.	Toronto (downtown/Ville), ON	On vehicle for delivery
Nov 18, 2013	5:18 a.m.	Toronto (downtown/Ville), ON	Arrived at sort facility
Nov 18, 2013	5:17 a.m.	Toronto (downtown/Ville), ON	Picked up by Purolator
Nov 15, 2013	7:54 p.m.	Toronto Sort Circle 16, ON	Arrived at sort facility
Nov 15, 2013	4:08 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 15, 2013	1:57 p.m.	Purolator	Shipping label created

### Shipment Summary

Tracking #	Delivered By	Status
330018918806	Nov 20, 2013	Delivered

Packages 1 to 1 of 1



November 15, 2013

Via: Courier

ST MARYS CEMENT COMPANY  
 A DIVISION OF ST MARYS  
 410 WAVERLY RD  
 R.R. #2  
 BOWMANVILLE, ON L1C 3K3

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment  
 File No.: 300032339.0000**

Parcel(s): 311600007020900

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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- Municipal Operations Centre: 408 James St. S., St. Marys, ON N4X 1B6

Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

David Blake, C.E.T.  
 The Corporation of the Town of St. Marys  
 408 James Street South, P.O. Box 998  
 St. Marys, ON N4X 1B6  
 Phone: 519-284-2340 Ext. 209  
 Fax: 519-284-0902  
 Email: d.blake@townofstmarys.on.ca

James Hollingsworth  
 R.J. Burnside & Associates Limited  
 1465 Pickering Parkway, Suite 200  
 Pickering ON L1S 6H3  
 Phone: 905-420-5777 Ext. 603  
 Fax: 905-420-5247  
 Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

R.J. Burnside & Associates Limited

James R. Hollingsworth, P.Eng.  
 Technical Leader, Solid Waste

cc: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
 David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability.docx  
 10/11/2013 2:15 PM

## Terms of Reference Hard Copy Request Form

Project:	Town of St. Marys Future Solid Waste Disposal Needs Proposed Terms of Reference for an Environmental Assessment
File No.:	300032339.0000
Return by	November 30, 2013 to:
Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jsmhs.hollingsworth@rjburnside.com

This is to confirm that we would like to receive a bound copy of the above noted Terms of Reference.

Agency: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address (2<sup>nd</sup> line): \_\_\_\_\_

City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_

Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_

Email: \_\_\_\_\_

Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

032339 TOR Request Form.docx 10/11/2013 10:02 AM





Tracking Details

Shipment Status

**Shipment Summary**  
 Tracking # 30018134916  
 Delivered  
 Status  
 30018134916 Nov 18, 2013 Delivered  
 Packages 1 of 1

View order details and shipping

Package Status  
 Package Tracking Number: 30018134916  
**Delivered**  
 Monday, November 18, 2013 9:51 a.m.  
 Received By: Dave  
 Service: Parcel Express  
 1 lb. Envelope  
 Ship Date: Nov 15, 2013

From: Pickering, ON, CA  
 To: Bowmanville, ON, CA

Date	Local Time	Location	Description
Nov 16, 2013	9:51 a.m.	Pickering, ON	Shipment delivered to ONVE at SHIP DOCK
Nov 15, 2013	8:10 a.m.	Pickering, ON	On vehicle for delivery
Nov 15, 2013	1:38 a.m.	Pickering, ON	Arrived at sort facility
Nov 15, 2013	7:59 p.m.	Toronto Sort Cluster T4, ON	Arrived at sort facility
Nov 15, 2013	4:05 p.m.	Pickering, ON	Loaded up by Partner at PICKERING ON ON
Nov 15, 2013	3:05 p.m.	Partner	Shipping label created

**CONDITIONS OF CARRIAGE**

DESCRIPTION: Letter  
 No Declared Value Entered By Sender / Aucune valeur déclarée entrée par l'expéditeur

IMPORTANT - PLEASE READ: The consignee agrees that the act of lifting the shipment to the carrier for transportation shall be sufficient to constitute acceptance of this bill of lading by the consignee and shall bind the consignee to the conditions of carriage stated below.

SHIPPER'S LIABILITY: Carrier's liability in respect of the shipment described in the bill of lading, including any loss, damage, delay, or other loss, shall be limited to the actual value of the goods at the time of loss, damage, delay, or other loss, less any amount paid by the consignee for insurance or other protection. Carrier's liability shall not extend to loss, damage, delay, or other loss, resulting from the carrier's negligence or that of its employees, agents, or independent contractors.

SHIPPER'S OBLIGATIONS: Shipper warrants that the goods are as described, including any and all accessories, and that the goods are in conformity with the bill of lading. Shipper warrants that the goods are in conformity with the bill of lading and that the goods are in conformity with the bill of lading. Shipper warrants that the goods are in conformity with the bill of lading and that the goods are in conformity with the bill of lading.

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**Purolator**  
 R. J. Bunsida  
 1468 PICKERING PKY  
 PICKERING, ON L1V 7G7  
 (905) 420-5777 ext. 800  
**RECEIVED**

**OSNR**

410 Waverly Road  
 Bowmanville, ON L1C 3K3

**NOTE:**  
 DATE: 15 Nov 2013  
 WEIGHT/PIECES: 1.00 lb. 1 of 1  
 DATE: 15 Nov 2013  
 WEIGHT/PIECES: 1.00 lb. 1 of 1

PIN: 830 019 134 916

45

ALL RIGHTS RESERVED © 2013

*Handwritten:* St. Marys Bunsida copy



November 15, 2013

Via: Courier

RIORDAN ARTHUR D ESTATE  
C/O CHERYL RIORDAN  
129 ARBOUR GLEN CRES  
LONDON, ON N5Y 2A4

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

Parcel(s): 311600007021200

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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The Corporation of the Town of St. Marys  
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St. Marys, ON N4X 1B6  
Phone: 519-294-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@townofstmarys.on.ca

Jamie Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1V 6H2  
Phone: 905-420-5777 Ext. 903  
Fax: 905-420-5247  
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Yours truly,

R.J. Burnside & Associates Limited

Jamie R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

cc: Weeley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability.docx  
15/11/2013 2:13 PM



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File No.:	300032339.0000
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Attention:	James R. Hollingsworth, P.Eng, Technical Leader, Solid Waste
Fax:	(905) 420-5247
Mail:	R.J. Burnside & Associates Limited 1465 Pickering Parkway, Suite 200 Pickering ON L1V 7G7
Email:	jamie.hollingsworth@rjburnside.com

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Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Address (2<sup>nd</sup> line): \_\_\_\_\_  
City: \_\_\_\_\_, ON Postal Code: \_\_\_\_\_  
Phone: ( ) - \_\_\_\_\_ Fax: ( ) - \_\_\_\_\_  
Email: \_\_\_\_\_  
Courier Instructions: \_\_\_\_\_

Name: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

View Shipment Details

*Londoner*  
 Courier Returned →  
 Post office → Mailed →  
 Nov. 28/13

Shipment Date  
 2013-11-15  
 To  
 Riordan Arthur D. Estate  
 Cheryl Riordan  
 129 ARBOUR GLEN CRES  
 LONDON, Ontario  
 Canada, N5Y2A4

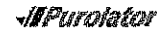
Created  
 2013-11-16 03:02 PM  
 From  
 R. J. Burnside  
 Jamie Hollingsworth, P.Eng.  
 1485 PICKERING Parkway  
 Suite # 200  
 PICKERING, Ontario  
 Canada, L1V7G7  
 1-(905)420-5777 x800

PIN	330019138040	Adjusted Weight	1.00 lb
Ship Type	Regular	Transit Time (days)	1
Package Type	Express Envelope	Cost	\$0.00
Number of pieces	1	Tax	\$0.00
Premium Service	Purolator Express Envelope	Total	\$0.00

Hold For Pickup (receiver will pick up shipment) No  
 Declared Value \$0.00  
 Bill To Sender  
 Dangerous Goods No  
 Chain Of Signature No  
 OSNR-Signature Not Required Yes  
 Residential Delivery No  
 Signature Required

Weight restrictions/limits/limitations and service availability are subject to Purolator's Terms and Conditions.

*Londoner*  
 Courier Returned &  
 Postal Service mailed /  
 Nov. 28/13



Tracking Details



Package Status  
 Package Tracking Number: 330019138040 [View more details](#)

**Attention**  
 Estimated Time of Delivery  
 Not Available  
 Attempted delivery - Incomplete / incorrect address provided. [Contact us \(Purolator / resources and support/the Incomplete packages?\)](#) to correct address.

Service	Purolator Express Envelope	From	Pickering, ON, CA
Est. Shipment Weight	1 lb.	To	London, ON, CA
Shipment Date	Nov 15, 2013		
Original Delivery	Nov 13, 2013		

History

Date	Local Time	Location	Description
Nov 25, 2013	8:01 a.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 25, 2013	6:34 a.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 22, 2013	6:26 a.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 21, 2013	6:14 a.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 20, 2013	6:15 a.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 19, 2013	1:42 p.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 19, 2013	1:42 p.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 19, 2013	8:21 a.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 18, 2013	8:24 p.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 18, 2013	8:16 p.m.	London, ON	Arrived at sort facility
Nov 10, 2013	8:14 p.m.	London, ON	Picked up by Purolator
Nov 18, 2012	1:36 p.m.	London, ON	Attempted delivery - Incomplete / incorrect address provided
Nov 18, 2012	7:26 a.m.	London, ON	On vehicle for delivery
Nov 15, 2012	7:59 p.m.	Toronto Sort Centre TL, ON	Arrived at sort facility
Nov 15, 2012	4:06 p.m.	Pickering, ON	Picked up by Purolator at PICKERING ON
Nov 15, 2012	3:07 p.m.	Purolator	Shipping label created

**Shipment Summary**

Tracking #	330019138040	Deliver By	Not Available	Status	Attention
Packages 1 of 1					

**E-mail Notifications**

Get notified by e-mail as soon as your shipment is delivered.

From \_\_\_\_\_  
 Name \_\_\_\_\_  
 E-mail \_\_\_\_\_

To \_\_\_\_\_  
 Name \_\_\_\_\_  
 E-mail \_\_\_\_\_

Notify of  Delivery

[Terms & Conditions](#) [Send](#)



BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

## Memorandum

---

**Date:** November 18, 2013 **File No.:** 300032339  
**Project:** St. Marys Landfill Long-Term Capacity  
**To:** Various  
**From:** R.J. Burnside

### Comments

The following letters were hand delivered to residents in the St. Marys area. In some cases they were submitted to the post office for placement in PO boxes.



November 15, 2013

**Via: Hand Delivered**

1/2 CENTURY HOLDINGS INC  
PO BOX 789 STN MAIN  
ST MARYS ON N4X 1B5

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000514900**

The Town of St. Marys (Town) is continuing efforts to prepare a Terms of Reference (ToR) for an individual Environmental Assessment (EA) for the identification and selection of a preferred Solid Waste Disposal option for the Town. Under the EA Act, the first step in the EA process is the preparation of proposed ToR. Draft ToR was previously issued for public comment in November 2012. Since then, the Town has been working to address comments through further consultation and by making modifications to the ToR. The revised ToR has enhanced the proposed EA work program to:

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Fax: 519-284-0902  
Email: [dblake@town.stmarys.on.ca](mailto:dblake@town.stmarys.on.ca)

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
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**R.J. Burnside & Associates Limited**

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

Via: Hand Delivered

BAFFES ANGELA HELEN  
SMIT JOHANNES ADRIANUS  
1642 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

Re: **Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

Parcel(s): 312014000510915

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James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

032339 TOR Availability.docx  
15/11/2013 11:29 AM



November 15, 2013

**Via: Hand Delivered**

BATTEN KELLY  
WEESSIES CHRISTINE  
4468 LINE 3  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510800**

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James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

BLACKLOCK RICHARD JAMES  
BLACKLOCK CANDICE LOUISE  
1730 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510610**

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**R.J. Burnside & Associates Limited**

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys





November 15, 2013

**Via: Hand Delivered**

BRADLEY GLENN WILBUR  
BRADLEY MARGARET JEAN  
4642 LINE 3  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000511300. 312014000511410**

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Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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15/11/2013 11:29 AM



November 15, 2013

**Via: Hand Delivered**

CARLBERG DAVID ROY  
RICHARDSON MARLENE FERN  
PO BOX 624 STN MAIN  
ST MARYS ON N4X 1B4

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510605**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

CARR LYNN MARIE  
CARR WILLIAM JOHN  
1628 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510900**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

CHRISTIE BRIAN KEITH  
CASSAR EVELYN ROSE  
25 FRONT ST  
GENERAL DELIVERY  
ST MARYS ON N4X 1B9

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 311600007021700**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

Via: Hand Delivered

CLOSE JEREMIAH JACKSON  
KIPFER CASSIE LEE  
4469 LINE 3  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000511000**

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David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

FOSTER GLORIA YVONNE  
FOSTER CLARENCE ALLEN  
1668 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
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**Parcel(s): 312014000510940**

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David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

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GRATTON RICHARD DAVID HUGH  
GRATTON KIMBERLEY ANNE  
4461 LINE 3  
R R 3  
ST MARYS ON N4X 1C6

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**Parcel(s): 312014000511002**

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November 15, 2013

**Via: Hand Delivered**

GROVER MICHAEL ALBERT VINCEN  
GROVER PHYLLIS ELAINE  
4457 LINE 3  
R R 3  
ST MARYS ON N4X 1C6

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File No.: 300032339.0000**

**Parcel(s): 312014000511004**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys





November 15, 2013

**Via: Hand Delivered**

HEARD WILLIAM DOUGLAS  
HEARD AUDREY EILEEN  
PO BOX 1592 STN MAIN  
ST MARYS ON N4X 1B9

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File No.: 300032339.0000**

**Parcel(s): 312014000510500**

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Yours truly,

**R.J. Burnside & Associates Limited**

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

HUESTON KNOWLSON BROCK  
HUESTON BONNIE BELLE  
4546 LINE 3  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000511400**

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Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
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James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

KING WILLIAM FRANKLIN  
KING JULIE ANN  
1740 PERTH RD 123  
P O BOX 1285  
ST MARYS ON N4X 1B8

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510420**

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David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

LANDOWNER  
4469 LINE 3  
R R 3  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000511074**

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Technical Leader, Solid Waste

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David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

MAPLE LEAF FOODS INC  
T/A SHURGAIN  
ATTN TOM WARREN  
600 JAMES ST S RR 4  
ST MARYS ON N4X 1C7

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 311600006022805**

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c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

MCCURDY DANIEL WAYNE  
MCCURDY KRISTENE ANNE  
1764 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510300**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

MUIR TRACEY LYNN  
GRENDA CHRISTOPHER JOHN  
1602 PERTH RD 123  
BOX 406  
ST MARYS ON N4X 1B2

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000515800**

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David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

Via: Hand Delivered

MUMBERSON MARY LYNN  
MILLER DANIEL CHARLES  
1748 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

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Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510410**

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David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

PARTRIDGE RANDY CLAYTON  
PARTRIDGE WENDY LOUISE  
1646 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510920**

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David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

Via: Hand Delivered

PASSMORE ROBERT MITCHELL  
PASSMORE CAROL ANN  
4495 LINE 3  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000511200, 312014000511225**

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Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
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Yours truly,

**R.J. Burnside & Associates Limited**

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

Via: Hand Delivered

PENNER ROLAND LLOYD  
PENNER DORIS INGA  
1652 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510925**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

POWELL ERNEST WILLIAM  
POWELL AMY  
1720 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510620**

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c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

PRIMEAU NEIL JOSEPH  
PRIMEAU ELAINE RACHEL  
PO BOX 2437  
ST MARYS ON N4X 1A3

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510935**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

REID JOHN HUGH  
REID ROSEMARY KATHERINE  
PO BOX 512 STN MAIN  
ST MARYS ON N4X 1B3

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 311600007021600**

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David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

RIORDAN ARTHUR D ESTATE  
C/O CHERYL RIORDAN  
129 ARBOUR GLEN CRES  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 311600007021200**

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David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

RIORDAN ZORA  
1774 PERTH RD 123  
R R 3  
ST MARYS ON N4X 1C6

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Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510105, 312014000510200**

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David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

RODWELL DOUGLAS BRUCE  
RODWELL CATHERINE ANNE  
1726 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

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File No.: 300032339.0000**

**Parcel(s): 312014000510615**

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David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

SOUTTER GORDON HENDERSON  
57 30 ANN ST  
ST MARYS ON N4X 1C8

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
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File No.: 300032339.0000**

**Parcel(s): 312014000511070**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

ST MARYS CEMENT COMPANY  
A DIVISION OF ST MARYS  
PO BOX 1000 STN MAIN  
ST MARYS ON N4X 1B6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 311600007021400, 311600007021500, 311600007021000,  
311600008002600**

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Please submit any comments you may have on the revised ToR, by mail, fax, email or telephone to:

Dave Blake, C.E.T.  
The Corporation of the Town of St. Marys  
408 James Street South, P.O. Box 998  
St. Marys, ON N4X 1B6  
Phone: 519-284-2340 Ext. 209  
Fax: 519-284-0902  
Email: dblake@town.stmarys.on.ca

James Hollingsworth  
R.J. Burnside & Associates Limited  
1465 Pickering Parkway, Suite 200  
Pickering ON L1S 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
Email: St.Marys.Waste.EA@RJBurnside.com

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Yours truly,

**R.J. Burnside & Associates Limited**

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

ST MARYS CEMENT COMPANY  
A DIVISION OF ST MARYS  
410 WAVERLY RD  
R.R. #2  
ST MARYS ON N4X 1B6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 311600007020900**

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James Hollingsworth  
R.J. Burnside & Associates Limited  
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Pickering ON L1S 6H3  
Phone: 905-420-5777 Ext. 803  
Fax: 905-420-5247  
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**R.J. Burnside & Associates Limited**

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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15/11/2013 11:29 AM



November 15, 2013

**Via: Hand Delivered**

VAN NES JACOBUS JOHANNES  
VAN NES TERESA MARIE  
3516 RD 119  
RR 2 STN MAIN  
STRATFORD ON N5A 6S3

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000516000**

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James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys

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November 15, 2013

**Via: Hand Delivered**

VERHULST JACOBUS MARINES  
VERHULST TRYNTJE MARIA  
1670 PERTH RD 123  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510945**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

WESTON BRIAN KEITH  
1654 RD 123  
R R 3  
ST MARYS ON N4X 1C6

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000510930**

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Technical Leader, Solid Waste

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David Blake, Environmental Coordinator Town, Town of St. Marys



November 15, 2013

**Via: Hand Delivered**

WIEGERS ANNA MARIA C  
RR 3 STN MAIN  
ST MARYS ON N4X 1C6

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**Parcel(s): 311600007021900**

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Technical Leader, Solid Waste

c: Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment  
David Blake, Environmental Coordinator Town, Town of St. Marys





December 10, 2013

**Via: Fax (519-284-9951)**

Carol Passmore  
Bob Passmore  
The Passmore Family Farm  
4495 Line 3  
RR 3 STN MAIN  
ST Marys ON N4X 1C6

Dear Carol Passmore and Bob Passmore:

**Re: Town of St. Marys Future Solid Waste Disposal Needs  
Proposed Terms of Reference for an Environmental Assessment  
File No.: 300032339.0000**

**Parcel(s): 312014000511200, 312014000511225**

R.J. Burnside & Associates Limited (Burnside) received your fax dated, December 5, 2013. We have also been provided with a copy of a nearly identical fax, also dated December 5, that was directed to the Town of St. Marys (Town). This letter is intended to speak to both faxes.

Regarding current landfill operations, Burnside has been assured by the Town that all efforts are being made to properly and effectively cover waste at the end of each operating day. This cover placement is a requirement of the site's Environmental Compliance Approval (formerly known as a Certificate of Approval), number A150203.

In the proposed draft Terms of Reference (TOR), the Town has committed to consider all elements of the environment as broadly defined by the Environmental Assessment Act, including odour (see Section 5.4.4). In the TOR (Section 5.0 generally) we describe how the Town (and by extension, Burnside) will consider all possible impacts, including odour, and use that information to compare and select the best way for the Town to manage solid waste. If the Town proceeds with expansion of the existing landfill a number of design options (methods) will also be assessed in order to identify a design and operational plan that will reduce any negative impacts as much as possible. Through this Environmental Assessment process it is the Town's goal to eliminate, or at least minimize, environmental impacts wherever possible.

We believe the Town's goals are in keeping with the intent of your faxes. Burnside will incorporate your faxes and this response into the Record of Consultation (Appendix E of the TOR). We are also copying this correspondence to the Ministry of the Environment for their records.

As an aside for future reference, please note that you need only contact either the Town or Burnside and the other will be provided with your correspondence through our joint project team. You may certainly continue to contact both the Town and Burnside as you desire.

Should you have any questions or further concerns, please feel free to contact the undersigned.

Yours truly,

**R.J. Burnside & Associates Limited**

A handwritten signature in black ink, appearing to read 'James R. Hollingsworth', with a stylized flourish extending to the right.

James R. Hollingsworth, P.Eng.  
Technical Leader, Solid Waste  
JRH:cv

- c: Dave Blake, Environmental Coordinator, Town of St. Marys (via email) (with Passmore faxes)
- Wesley Wright, Project Officer, Environmental Approvals Branch, Ministry of the Environment (via email) (with Passmore faxes)

\* \* \* Communication Result Report ( Dec. 10. 2013 12:38PM ) \* \* \*

1) RJ Burnside Pickering  
2)

Date/Time: Dec. 10. 2013 12:37PM

File No.	Mode	Destination	Pg(s)	Result	Page Not Sent
0213	Memory TX	15192849951	P. 3	OK	

Reason for error

- E. 1) Hang up or line fail
- E. 2) Busy
- E. 3) No answer
- E. 4) No facsimile connection
- E. 5) Exceeded max. E-mail size

R.J. Burnside & Associates Limited 1405 Pickering Parkway Suite 200 Pickering ON L1V 7G7 Canada  
Telephone (905) 420-5777 Fax (905) 420-5247 web www.rjburnside.com



**Fax Transmission**

Date: December 10, 2013 File No.: 300032339.0000  
 Re: Town of St. Marys Future Solid Waste Disposal Needs  
 Proposed Terms of Reference for an Environmental Assessment

---

To: Attention: Carol Passmore and Bob Passmore Location: RR 3 St. Marys ON N4X 1C6  
 Company: Passmore Family Farm Fax No.: 519-284-9951

---

From: Name: Jamie Hollingsworth, P.Eng.  
 Sent By: Carol Vallie Original to be Sent: Fax

Fax cc:

Number of Pages, including Cover: 3

Comments

Please find attach, our response letter to your fax.

131210\_FAX Passmore.docx  
12/10/2013 12:28 PM

This message is intended only for the use of the individual or entity to which it is addressed and contains information that is privileged and confidential. If the reader of this message is not the recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the address above at our cost.



## THE PASSMORE FAMILY FARM

Dec. 5, 2013

Dear Mr. Blake

This letter contains our comments in answer to a request for input regarding a TOR for an EA for the identification and selection of a preferred Solid Waste Disposal for the Town of St. Marys. (File No: 300032339.0000)

When the Town of St. Marys' current solid waste disposal site was proposed, neighbours of the site were assured that waste would be covered daily to mitigate possible odours, gulls, etc. Unfortunately, <sup>this practice</sup> has been discontinued and we now, especially with an east wind, find ourselves experiencing unpleasant odours. This is not only bothersome to our family and friends, but is a negative to our beef and pork farm gate customers as well.

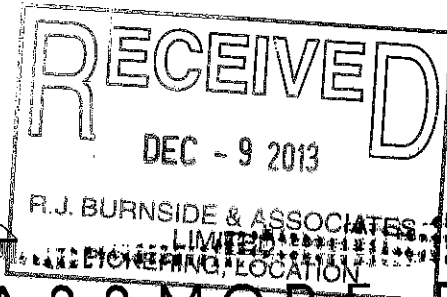
In the event of the expansion of the Town site, we would hope that daily covering would resume to protect the air quality in our area.

Sincerely,

Carol Passmore

Bob Passmore

Organic Beef - Good for You and the Environment




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Dec 5, 2013

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Sincerely,  
 Carol Passmore  
 Bob Passmore

Organic Beef - Good for You and the Environment



**BURNSIDE**

[ THE DIFFERENCE IS OUR PEOPLE ]

---

## Appendix F

### Comments with Respect to the August 2021 EA Submission

**Table 1: Draft Amended Environmental Assessment – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
Submitter: <b>Environmental Assessment Branch</b> , Ministry of the Environment, Conservation and Parks August 25, 2022			
1	<p><b>Ministry review of responses to MECP EA Branch comments to August 13, 2021 version as shared on October 4, 2021</b></p> <p>The ministry is satisfied with responses provided in the comment response table for all October 4, 2021 dated comments except for those listed in the comments below.</p>	Comment noted.	
2	<p><b>Existing Comment to August 13, 2021 version shared on October 4, 2021: Diversion – Comment 2a</b>                      Page 23 and throughout the document</p> <p>Section 11.4 clarifies the intent to meet the diversion targets set out by provincial policy and to review the landfill waste diversion rates every 10 years. This commitment was also added to the Compliance Monitoring Plan commitments summary table in section 11.5, however there was no reference to the frequency of the commitment. The commitment summary table should be amended to further clarify the intent to review the diversion rates every 10 years.</p> <p><del>Action 2a:</del> Please update table 11-2 in the Compliance Monitoring section 11.5 to clarify the intent to review the diversion rates every 10 years.</p> <p><b>Proponent Response Provided in June-August 2022:</b></p> <p>Vol. I, Section 11 'Future Commitments and Environmental Compliance' has been rewritten. Table 11-1, 'Summary of EA Commitments', has been updated to include the Town's commitment to:</p> <p>Review applicable diversion programs every 10 years and meet any future diversion targets set out in provincial policy.</p> <p><b>New Comment: Diversion Policy Review Every 10 Years</b></p> <p>Although previous iterations of the EA referenced reviewing applicable diversion policies every 10 years. The draft amended version does not qualify the frequency.</p> <p><b>Action A:</b> Please update both section 3.1.3.6 'Effect of Provincial Policies' and Table 11-1 Summary of EA Commitments to reflect the commitment to review applicable diversion programs every 10 years as outlined.</p>	Action A: Both Section 3.1.3.6 "Effect of Provincial Policies" and Table 11-1 "Summary of EA Commitments" have been updated to reflect the commitment to review applicable diversion programs every 10 years.	
3	<p><b>Existing Comment to August 13, 2021 version shared on October 4, 2021: Cement Kiln Dust (CKD) Pile – Comment 3b</b>                      Section 7 and 9 and throughout the document</p> <p>Section 11.1 of the final EA was updated to reference consideration for a subsurface drain, the review of the potential effects of the CKD pile on the watercourse and the development of a monitoring and adaptive</p>	Action B1: Edits have been made to Section 11 to clarify that the existing monitoring plan and existing Design and Operations Report will be updated as part of the ECA application process to include the information contained in this EA relevant to the application. This includes the updated mitigation measures, monitoring and adaptive management plan and applicable commitments.	

**Table 1: Draft Amended Environmental Assessment – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	<p>management plan to address potential impacts during construction and operation. It was noted that the table 11-2 which outlines specific commitments does not include reference to an adaptive management plan or review of potential effects of the CKD pile on the watercourse as per the request in the comment. Section 4.3.5 of the EA Code of Practice requires that all commitments made in the EA should be summarized in a single table, with columns for a brief description of all commitments, where in the document the commitment is mentioned and when each commitment will be fulfilled.</p> <p><del>Action 3b:</del> The ministry strongly recommends that the EA be revised to contain commitments to assessing the potential effects of the CKD pile on the watercourse, monitoring the effects during construction and operation, and proposing mitigation and/or adaptive management if impacts are identified through the monitoring. Please update Table 11-2 to include all commitments made in the EA including those regarding the adaptive management plan and review of potential effects to the CKD pile.</p> <p><b>Proponent Response Provided in June-August 2022:</b></p> <p>Vol. I, Section 11.0, 'Future Commitments and Environmental Compliance' has been rewritten. Section 11.1, 'Monitoring Program' describes the monitoring programs that will feed into the adaptive management plan described in Vol. I, Section 11.2 'Adaptive Environmental Management'. Table 11-1, 'Summary of EA Commitments', summarizes the commitments as outlined in Section 4.3.5 of the Code of Practice and includes all the commitments made in the EA.</p> <p><b>New Comment: Update Chapter 11 to reflect MECP technical comments provided on August 10, 2022.</b></p> <p><b>Action B1:</b> As indicated in email on August 10, 2022 - Please ensure that Chapter 11 and its commitments table reflect the findings and recommendations outlined in the Alternative 3A Groundwater and Surface Water Evaluation Technical memo. For example, a) to be inline with the Technical memo the existing monitoring program must be updated to reflect the additional monitoring stations, parameters, triggers and possible adaptive management plans related to the CKD pile and b) the "post-EA Design and Operations Plan" must be updated to include potential contingency strategies in the event that landfill/CKD pile effects are detected.</p> <p>When updating the draft amended EA please consider the following: Is the intent that existing monitoring and contingency plans for the landfill will be updated and submitted in support of an ECA amendment application following EA approval to reflect the additional monitoring stations, parameters, triggers and adaptive management plans related to the CKD pile as per the Technical memo/EA sections? What will the updated plans include? Are there additional plans intended? What is the role of the part of the "post-EA Design and Operations Report"?</p> <p><b>Action B2:</b> Please submit an updated version of Chapter 11 of the amended EA which reflects the recommendations of the memo. It is requested that clear commitments outlining the recommendations of the report be added to the commitments table in addition to text in the Chapter to meet Section 4.3.5 of the Code.</p> <p><b>Action B3:</b> Please clarify what the "post-EA Design and Operations Report" is and its purpose.</p>	<p>Action B2: Section 11 Table 11-1 has been updated to reflect the updated monitoring and adaptive management in Sections 11.2 and 11.3.</p> <p>Action B3: The introductory paragraphs to Section 9 have been updated to include reference to the requirement pursuant to O.Reg. 232/98 for the Town to update the existing Design and Operations report as part of the ECA application with the information contained in this EA particularly the mitigative measures outlined in Table 9-1, the commitments in Table 11-1 as applicable and the updated monitoring program and adaptive management plan outlined in Sections 11.2 and 11.3.</p>	



**Table 1: Draft Amended Environmental Assessment – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
4	<p><b>New Comment: Chapter 9 and Chapter 11 – Mitigation Reporting and Commitments Tables</b></p> <p>Single table with all commitments and reporting clarification: Section 4.3.5 'Commitments and Monitoring' of the Code of Practice outlines that "The environmental assessment must provide a plan that sets out how and when all commitments, including impact management measures, made in the document and any conditions of approval will be fulfilled and how the proponent will report to the ministry about compliance. This information should be summarized in a single table, with columns for a brief description of all commitments, where in the document the commitment is mentioned and when each commitment will be fulfilled".</p> <p>Table 9-1 references several impact mitigations measures where potential reporting requirements are listed as none. It is the expectation that the Town will implement its impact management measures and will report them to the MECP. It is MECP's understanding that some of these will be reported on/conveyed to MECP as part of the existing 'Environmental Effects Monitoring Program'. For example, if complaints regarding dust are received, the complaint will be reported to MECP as part of the existing "Environmental Effects Monitoring Program' annual EA monitoring report.</p> <p><b>Action D:</b> Please update Table 9-1 to accurately reflect impact mitigation measures reporting to MECP.</p> <ul style="list-style-type: none"> <li>The commitments table in Chapter 11 only references the impact management mitigation during construction. There are many other phases where Table 9-1 mitigation measures apply.</li> </ul> <p><b>Action D2:</b> To align with the requirement of section 4.3.5 of the code please add a line item to flag the implementation of all mitigation measures in Table 9-1 and provide reference to each applicable project phase for each mitigation measure in Table 9-1.</p> <p>There are commitments outlined in the text of Chapter 11 that are not reflected in the Commitment table. For example, commitments regarding the environmental effects monitoring and adaptive management plan are not referenced in the table.</p> <p><b>Action D3:</b> Please ensure that each commitment in the entire EA has a line item in the commitments table. For example, there should a line item for the implementation of the existing and augmented (to reflect new water quality parameters) Effect Monitoring Plan.</p>	<p>Action D: Table 11-1 has been updated to reflect the commitment to apply mitigation measures during all project phases.</p> <p>Actions D2 &amp; D3: Commitments with respect to environmental effects monitoring and adaptive management are reflected in Table 11-1 wherever there is a reference to Sections 11.2 Monitoring Program and 11.3 Adaptive Management Plan. A commitment has been added to Table 11-1 to indicate that the Annual Monitoring Report and Annual Compliance Monitoring Report will be sent to MECP annually.</p>	
5	<p><b>New Comment: Table 1-1 Listed Reports and Studies</b></p> <p>Table 1-1: A field study and updates to existing reports was initiated in response to reviewer concerns with potential water quality impacts of the Cement Kiln Dust (CKD) Pile following the final EA which submitted on August 13, 2021.</p> <p><b>Action E:</b> Please update Table 1-1 to reflect the additional studies and reports in response to comments from the EA submitted on August 13, 2021.</p>	<p>Additional information discussing the field study and updates to reports has been added to Section 1.2 'Technical Report Volumes and Appendices' rather than to Table 1-1, which only discusses reports appended in Volumes III and IV.</p>	

**Table 1: Draft Amended Environmental Assessment – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
6	<p><b>New Comment: Chapter 7 – Assessment of Alternative Methods</b></p> <p>Effects assessment: The updated text and tables in Chapter 7.0 – Phase 5: Assess Alternative Methods for Carrying Out the Undertaking address all previous comments. The re-written chapter clearly explains each alternative's effects and how are assessed and compared against each other. All comments to Chapter 7 have been addressed.</p> <p>Consistency in EA version references: Please ensure that reference to the EA submitted in August 2021 is consistently referenced. For example, the first 3 paragraphs in Chapter 7 reference the July 2021 EA and the EA submitted in August 2021 however they relate to the same version of the EA.</p> <p><b>Action F:</b> Please update the entire EA to reference the final EA document submitted in August 2021 consistently.</p>	<p>The dates in Section 7 have been corrected and the EA has been reviewed to ensure dates are correct throughout.</p>	
7	<p><b>New Comment: Section 10.6 – Consultation Summary - Submission of Environmental Assessment</b></p> <p>Appendix F reference: To meet the EAA requirement of s.6.1(2)(e) there must be clear documentation as to how issues and concerns have been addressed. It is MECP's anticipation that Appendix F 'Comments with respect to the August 2021 EA Submission' will provide a summary of comments received and actions taken since the submission of the final EA in August 2021. Section 10.6 references how comments received since the submission of the final EA in Aug 2021 led to changes to the EA. To improve clarity please consider adding a summary of the changes to the final EA in response to comments and provide reference to Appendix F.</p> <p><b>Action G:</b> Please consider adding a summary of the changes to the final EA in response to comments and provide reference to appendix F in Section 10.6.</p>	<p>Action G: A new Section 10.4.5 has been added to provide a summary of the changes to the final EA in response to the GRT comments received on the August 2021 EA submission.</p>	
8	<p><b>New Comment: Chapter 12 – Applicability with TORs</b></p> <ul style="list-style-type: none"> <li>• Changes to Evaluation Criteria Indicators: The St Marys TOR reads that Indicator "Criteria may be further refined as a result of comments received from the public, Aboriginal communities and agencies during the EA process". The Code (Section 4.2.4) further explains that "the proponent will provide justification for any change to the criteria or indicators outlined in the approved terms of reference. The reasons for selecting the criteria and indicators should be clearly explained." In this case, Table 7-3 Evaluation Indicators provides a clear justification for each revised indicators as per the Code.</li> <li>• New Alternative Method: Table 5-3 of the St Marys TOR allows for additional alternative methods: "Other methods may be identified during public, Aboriginal and agency consultation". The evaluation of the new alternative 3a is inline with the TOR.</li> </ul> <p><b>Action H:</b> Please update Table 12-1 "Concordance with Approved Terms of Reference" to reference the 3 alternative methods assessed while referencing the additional alternative 3A as a result of consultation activities. Consider adding a "Note" as per information provided for indicators.</p>	<p>Actions H and H2: Table 12-1 has been updated to clarify why additional alternatives were considered and to provide a complete record of the draft and final EAs submitted to MECP.</p>	

**Table 1: Draft Amended Environmental Assessment – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	<ul style="list-style-type: none"> <li>• Dates of Drafts submitted: There is an incomplete record of draft EAs submitted to MECP.</li> </ul> <p><b>Action H2:</b> Please update Phase 6 of Table 12-1 "Concordance with Approved Terms of Reference" to reflect all draft submissions by Burnside (i.e., July 2021, etc.).</p>		

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
Submitter: <b>Environmental Assessment Branch</b> , Ministry of the Environment, Conservation and Parks October 4, 2021			
1	<p><b>Interim Environmental Compliance Approval (ECA) Amendment Comment1-A</b>                      Several Sections of the Revised Draft EA (e.g., Sections 1.0, 3.1, and 3.1.2.2)</p> <p>Sections 3.1.2.2, 3.1.3.7 and 3.1.3.8 have been amended, MECP also requested that Section 1 be updated to reflect the new ECA issued on November 16, 2020.</p> <p><b>Action 1a:</b> Please update section 1 to clarify that the operation of the facility is under an ECA issued on November 16, 2020, while also referencing the added capacity and timeframe for continued operations. This section currently incorrectly references that it operates under the ECA dated June 24, 2010. Please update the EA to reflect the most recent approvals.</p>	<p>Vol. I, Section 1 'Introduction', has been updated to reflect that the operation of the landfill is under the ECA Issued January 10, 2022, including references for the added capacity and timeframe for continued operations.</p>	
	<p><b>Interim Environmental Compliance Approval (ECA) Amendment Comment1-B</b>                      Several Sections of the Revised Draft EA (e.g., Sections 1.0, 3.1, and 3.1.2.2)</p> <p>In section 5 the proponent highlights that the overall landfill must have a capacity of 708,000m<sup>3</sup> to meet the projected need. This section also outlines section 3.1.3.8 which also specifically outlines that the Town is requesting 669,097m<sup>3</sup>. There is also clarification that the capacity volume "consumed during the EA approval process, and subsequent approvals, will be accounted for when determining the final capacity of the landfill". The current ECA dated November 16, 2020 specifies an approved capacity of 440,050 m<sup>3</sup> which is 60,050 m<sup>3</sup> more than the original approved capacity of 380,000 m<sup>3</sup>. Section 3.1.3.8 of the EA subtracts the "volume consumed" from 2017 to 2020 of 38,903 m<sup>3</sup>.</p> <p><b>Action 1b:</b> The EA should clearly identify that it is requesting the remaining, unapproved value (708,000 m<sup>3</sup> minus the approved capacity via the interim ECAs of 60,050 m<sup>3</sup>) via the EA process.</p>	<p>The EA is seeking approval of 708,000 m<sup>3</sup> of total waste and operational cover (disposal) capacity for the full 40 year planning period. The additional capacity already approved for the site is accounted for within this volume, including all ECA Notices through the January 10, 2022, ECA, totaling 73,050 m<sup>3</sup>. As such, the remaining, unapproved volume of waste capacity being sought is 635,950 m<sup>3</sup> (708,000 m<sup>3</sup> minus the approved additional capacity to date).</p> <p>Vol. I, Section 3.1.3.8 'Interim Fill and Planning Period Capacity', of the EA has been updated to clarify requested capacity. Vol. I, Table 3.3 'ECA No. A150203 Amendments and Approved Capacity' has been updated to reflect the cumulative additional volume as of the January 2022 ECA.</p>	
	<p><b>Interim Environmental Compliance Approval (ECA) Amendment Comment 1-C</b>                      Several Sections of the Revised Draft EA (e.g., Sections 1.0, 3.1, and 3.1.2.2)</p> <p>Section 6.1 was modified to indicate that as per section 3.1.3.8, of the 708,000 requested "some of the volume has already been used". Section 3.1.3.8 outlines that the Town is requesting 669,097m<sup>3</sup> since a portion has already been used to date through ECA interim approvals.</p> <p><b>Action 1c:</b> Please clarify how the interim capacity has been considered in the conceptual design of the preferred undertaking.</p>	<p>Vol. I, Section 7.1 'Alternative Methods to be Assessed' and Section 3.1.3.8 'Interim Fill and Planning Period Capacity' have been updated to clarify that the remaining, unapproved volume of waste capacity being sought is 635,950 m<sup>3</sup> (708,000 m<sup>3</sup> minus the approved additional capacity to date – see response to 1-B). The interim approved capacity has been incorporated into the conceptual designs of all alternative methods as part of Cell 1 of the expansion.</p>	
2	<p><b>Diversion – Comment 2a</b>                      Page 23 and throughout the document</p> <p>Section 11.4 clarifies the intent to meet the diversion targets set out by provincial policy and to review the landfill waste diversion rates every 10 years. This commitment was also added to the Compliance Monitoring Plan commitments summary table in section 11.5, however there was no reference to the frequency of the commitment. The commitment summary table should be amended to further clarify the intent to review the diversion rates every 10 years.</p>	<p>Vol. I, Section 11 'Future Commitments and Environmental Compliance' has been rewritten. Table 11.1, 'Summary of EA Commitments', has been updated to include the Town's commitment to:</p> <p style="padding-left: 40px;">Review applicable diversion programs every 10 years and meet any future diversion targets set out in provincial policy.</p>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	<p><b>Action 2a:</b> Please update table 11-2 in the Compliance Monitoring section 11.5 to clarify the intent to review the diversion rates every 10 years.</p>		
3	<p><b>Cement Kiln Dust (CKD) Pile – Comment 3a</b> Section 7 and 9 and throughout the document</p> <p>Changes were made to 7.1.4. to provide consistency in how the impacts related to the CKD pile were assessed relative to each alternative. Table 7-16 no longer incorrectly references the fact that alternatives methods do not disturb the CKD pile. Although Tables 7-5 and 7-7 attempt to provide a detailed assessment of mitigation measures and ranking, it is unclear what assessment measures were considered and how they relate. It is suggested that additional rationale be provided to clearly explain the environmental planning and decision-making process followed to assess the potential impacts of the CKD pile. As a reminder, the EA should be a stand-alone document, the EA Code of Practice (page 11) for EA provides an outline as to how to prepare an environmental assessment. The EA Code of Practice states that “any interested person reading the environmental assessment document should be able to easily follow the process used by the proponent in determining the undertaking including the rationale for making certain choices. Clarity, simplicity, completeness, and precision are objectives for which to strive when preparing the environmental assessment document.</p> <p><b>Action 3a:</b> Please update the EA to provide a clear description of the contents of Table 7-5 and Table 7- 7 and any additional rationale to explain the environmental planning and decision-making process you followed to assess the potential impacts of the CKD pile impacts.</p>	<p>Government Review Team (GRT) comments on the Final EA raised several concerns regarding preferred Alternative 3 particularly the proximity to, and the potential impacts of the Cement Kiln Dust (CKD) Pile on the relocated watercourse. To address these concerns, the Town re-engaged with St. Marys Cement (SMC) to discuss the watercourse relocation and how far onto SMC lands it might extend. SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their Aggregate Resources Act license. Reflecting on both the comments on the Final EA and the limitations with respect to SMC lands, the study team revisited the preferred Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to relocate the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a refinement to the preferred alternative, Alternative 3A. The new Alternative 3A was incorporated and assessed as part of the alternative methods evaluation onward (i.e., Vol. I, Section 7.0 ‘Phase 5: Assess Alternative Methods for Carrying Out the Undertaking’).</p> <p>Vol. I, Section 7 ‘Phase 5: Assess Alternative Methods for Carrying Out the Undertaking’, including all the evaluation tables have been revised to reflect the addition of Alternative 3A, specifically, Vol. I, Table 7 8 ‘Groundwater Effects Assessment’, Table 7 9 ‘Potential Effects to Surface Water Quality’ and Table 7 10 ‘Potential Effects to Surface Water Quantity’. Sections 7.5 ‘Hydrogeology’ and 7.6 ‘Surface Water’ and the associated text has been revised to provide clarity and completeness with respect to both the impacts of the CKD pile and the traceability of trade-offs and environmental decision-making</p>	
3	<p><b>Cement Kiln Dust (CKD) Pile – Comment 3b</b> Section 7 and 9 and throughout the document</p> <p>Section 11.1 of the final EA was updated to reference consideration for a subsurface drain, the review of the potential effects of the CKD pile on the watercourse and the development of a monitoring and adaptive management plan to address potential impacts during construction and operation. It was noted that the table 11-2 which outlines specific commitments does not include reference to an adaptive management plan or review of potential effects of the CKD pile on the watercourse as per the request in the comment. Section 4.3.5 of the EA Code of Practice requires that all commitments made in the EA should be summarized in a single table, with columns for a brief description of all commitments, where in the document the commitment is mentioned and when each commitment will be fulfilled.</p> <p><b>Action 3b:</b> The ministry strongly recommends that the EA be revised to contain commitments to assessing the potential effects of the CKD pile on the watercourse, monitoring the effects during construction and operation, and proposing mitigation and/or adaptive management if impacts are identified through the monitoring. Please update Table 11-2 to include all commitments made in the EA including those regarding the adaptive management plan and review of potential effects to the CKD pile.</p>	<p>Vol. I, Section 11.0, ‘Future Commitments and Environmental Compliance’ has been rewritten. Section 11.1, ‘Monitoring Program’ describes the monitoring programs that will feed into the adaptive management plan described in Vol. I, Section 11.2 ‘Adaptive Environmental Management’. Table 11.1, ‘Summary of EA Commitments’, summarizes the commitments as outlined in Section 4.3.5 of the Code of Practice and includes all the commitments made in the EA.</p>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
5	<p><b>Effects Assessment – Comment 5d</b> Sections 3, 6 and 7</p> <p>Table 7-4 was added with the intention of showcasing alternative method-specific evaluation of effects, however, it is unclear how each alternative's ground water effects are assessed and compare against each other according to this table alone.</p> <p><b>Action 5d:</b> Please provide supplementary text to describe the potential effects in relation to the alternative methods being evaluated and how they differ among various stages of the project (e.g., placing waste on top of the CKD pile for Alternative 5).</p>	<p>Vol. I, Section 7 'Phase 5: Assess Alternative Methods for Carrying Out the Undertaking', including all the evaluation tables have been revised to reflect the addition of Alternative 3A. The previous Table 7-4 'Potential Impacts' [for groundwater and surface water] has been removed. Additional clarity has been added to Vol. I, Sections 7.5 'Hydrogeology' and 7.6 'Surface Water' to better explain each alternative's groundwater and surface water effects are assessed and compared against each other.</p>	
5	<p><b>Effects Assessment – Comment 5e</b> Sections 3, 6 and 7</p> <p>Several tables including Tables 7-4 (groundwater and surface water impacts), 7-5 (groundwater) and 7-7 (surface water) were added and provide additional information on the factors considered in the decision-making process. Supplementary text to outline the key factors in decision making would better allow readers to "easily follow the process used by the proponent in determining the undertaking including the rationale for making certain choices" as per page 11 of the EA Code of Practice. As per the example provided in the February 2021 comment, table 7-6 outlines that Alternative 5 differs from Alternatives 2 and 3 since it requires an assessment of the leachate from waste and the CKD pile and the need to construct a liner and leachate collection system above the CKD pile, yet there is no clear explanation as to why or how alternative 5 is less preferred.</p> <p><b>Action 5e:</b> Please provide supplementary text to outline key decision-making factors considered in the comparison of the net effects regarding the hydrogeological components of the environment.</p>	<p>Vol. I, Section 7 'Phase 5: Assess Alternative Methods for Carrying Out the Undertaking', including all the evaluation tables have been revised to reflect the addition of Alternative 3A. The previous Vol. I, Tables 7.6 'Groundwater Effects Assessment' and 7.7 'Surface Water Effects Assessment' and the associated text has been revised to provide additional information on the factors considered in the decision-making process. Supplementary text outlining key decision-making factors considered in the comparison of the net effects regarding the hydrogeological components of the environment have been added.</p>	
5	<p><b>Effects Assessment – Comment 5e2</b> Sections 3, 6 and 7</p> <p>Section 4.2.4 of the EA Code of Practice clarifies that the identification of positive and negative effects of alternatives are required to provide a balanced picture of the potential environmental effects. Please ensure that positive effects of alternative methods are also demonstrated. This will further explain the rationale behind decision making. For example, Section 7.1.5.1 Surface Water Quality describes the potential negative impacts of realigning the watercourse closer to the CKD pile however the potential positive effects of moving the watercourse away from the active landfill area (i.e. reduced risk of waste contaminates entering watercourse) are not clearly articulated.</p> <p><b>Action 5e2:</b> Please ensure that both positive and negative environmental effects are discussed when describing the effects and assessing alternatives throughout the EA.</p>	<p>Vol. I, Section 7 'Phase 5: Assess Alternative Methods for Carrying Out the Undertaking', including all the evaluation tables have been revised to reflect the addition of Alternative 3A. Additional information and clarity with respect to both positive and negative impacts has been added.</p>	
5	<p><b>Effects Assessment- Comment 5g</b> Sections 3, 6 and 7</p> <p>Although Table 7-8 and 7-10 were modified to reference that measures to relocate the watercourse offer an opportunity to improve conditions (including design for aquatic habitat) and further separates the majority of the watercourse from the landfill area it is still unclear what measures would be considered to improve the conditions.</p>	<p>Vol. I, Section 7 'Phase 5: Assess Alternative Methods for Carrying Out the Undertaking', including all the evaluation tables have been revised to reflect the addition of Alternative 3A. Additional information and clarity with respect to both positive and negative impacts has been added.</p>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	<b>Action 5g:</b> Please clearly describe how conditions would improve from the relocation.		
6	<p><b>New Comment:</b></p> <p>Please ensure that all commitments made in the EA are outlined in applicable tables. Section 4.3.5 of the EA Code of Practice reads: “The environmental assessment must provide a plan that sets out how and when all commitments, including impact management measures, made in the document and any conditions of approval will be fulfilled and how the proponent will report to the ministry about compliance. This information should be summarized in a single table, with columns for a brief description of all commitments, where in the document the commitment is mentioned and when each commitment will be fulfilled”. For example: Alternative methods 2 and 3 require the relocating of a watercourse. In the analysis of alternatives, the relocation of the watercourse was identified as a benefit since a “new channel can be designed to incorporate habitat features, including appropriate width/depth, substrate, and riparian vegetation” This fact played a key role in in the analysis of alternatives. There are several commitments to 6 a) study the effects of the watercourse relocation b) implement an Erosion and Sediment Control Plan c) and seek DFO approvals included in Table 9-1. However, it is unclear as to which impact management measures are intended to be incorporated into the construction and design of the relocated water course.</p> <p><b>Action 6:</b> Please ensure that all commitments made throughout the EA report are summarized in a single table</p>	<p>Vol. I, Section 11 ‘Future Commitments and Environmental Compliance’ has been rewritten. Section 11.2 ‘Adaptive Environmental Management describes the adaptive management plan while Section 11.1.3 ‘Environmental Effects Monitoring’ describes the monitoring programs that will feed into the adaptive management plan. Table 11.1, ‘Summary of EA Commitments’, summarizes the commitments in a format consistent with Section 4.3.5 of the Code of Practice and includes all the commitments made in the EA.</p>	
7	<p><b>New Comment:</b></p> <p>The description of the Undertaking reads (p.238): “Much of the site infrastructure already exists under the current approval. This includes the site entrance, weigh scale, scale house, internal access roads, public drop-off facility and buffer areas. Existing site facilities may or may not need to be relocated as part of the development of the expansion. Initially, there is no requirement to relocate the existing public drop-off and MHSW depot situated between Phase I and Phase II/III. The depot will need to be moved before Cell 2 begins operation. We note that the Town may upgrade the depot area for more efficient operation without seeking an EA amendment.</p> <p><b>Action 7:</b> Considering the MHSW depot is a known aspect of the preferred undertaking please include a detailed description of the potential effects and mitigation proposed.</p>	<p>Vol I, Section 8, ‘Description of the Undertaking’ has been completely revised to reflect a the conceptual design of Alternative 3A, including construction activities, which occur together with the ongoing (overlapping) operation of the site, closure and post-closure care.</p> <p>The MHSW depot (component) of the public drop-off area has been removed from the Site. A detailed description of the potential effects and mitigation proposed is not required for the MHSW depot.</p>	
<p>Submitter: <b>Indigenous Communities Comments</b>, Ministry of the Environment, Conservation and Parks September 14, 2021</p>			
1.	<p><b>Reference to EA: 2.4.2 Screening Process, 4.1.1. Data Collection and/or 5.5.4 Aboriginal Comments on Draft EA &amp; Rationale (January 2020 version of EA Report):</b></p> <p>It will be important for the proponent to demonstrate in the final EA report that they have obtained, or at least made meaningful attempts to obtain, input on the screening of alternatives from, at minimum, the communities that did not request to be excluded from the consultation process.</p> <p>The Nanfan Treaty of 1701 is between the Haudenosaunee Confederacy and the Crown. The most proximate Haudenosaunee communities to the St. Marys Landfill are Oneida Nation of the Thames and Six Nations of the Grand River. Further, the St Marys Landfill appears to be within the Treaty 29, 1827 area (not Treaty 3), the modern signatories to which include Aamjiwnaang First Nation, Caldwell First Nation, Chippewas of Kettle and</p>	<p>Vol. I, Section 3.7.1.2 ‘Social and Cultural Environment’ now includes the following text:</p> <p>‘The St. Marys Landfill is within the lands covered by Treaty 29 (1827). The modern signatories to this treaty are:</p> <ul style="list-style-type: none"> <li>• Aamjiwnaang First Nation (formerly Chippewas of Sarnia First Nation);</li> <li>• Caldwell First Nation;</li> <li>• Chippewas of Kettle &amp; Stoney Point;</li> <li>• Chippewas of the Thames First Nation; and</li> <li>• Walpole Island First Nation.</li> </ul> <p>The Haudenosaunee Development Institute (representing the Haudenosaunee Confederacy) and Six Nations of the Grand River Territory were also contacted as</p>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

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	<p>Stony Point, Chippewas of the Thames First Nation and Walpole Island First Nation. The Twin Creeks Landfill also appears to be in Treaty 29, and the same communities may have Aboriginal Treaty rights in this area.</p> <p><b>Proposed Action/Solution:</b></p> <p>Please describe in section 2.4.2, 4.1.1 and/or 5.5.4 what attempts were made to obtain input from Indigenous communities as part of the screening of alternatives and if any information specific to the screening was obtained from communities through consultation. In section 5.5.4 specifically it should be clarified that the Nanfan Treaty of 1701 is between the Haudenosaunee Confederacy and the Crown. Further, please clarify that the St Marys Landfill appears to be within the Treaty 29, 1827 area (not Treaty 3), the modern signatories to which include Aamjiwnaang First Nation, Caldwell First Nation, Chippewas of Kettle and Stony Point, Chippewas of the Thames First Nation and Walpole Island First Nation. Please also clarify that the Twin Creeks Landfill also appears to be in Treaty 29. Please reference sources or cross-reference consultation throughout section 5.5.4.</p> <p><b>Comments on Final EA (July 2021 version of the EA Report):</b></p> <p>It does not appear as though meaningful input has been received from Indigenous during the development and review of the EA. Section 10.5.6 refers to several comments from Indigenous communities. Please ensure that all feedback is recorded, included in the record of consultation and considered in the EA. It is recommended that the proponent and Ontario continue to reach out to the identified communities to see if they have any input, prior to a decision on the EA. That said, any information provided from communities should be considered in the EA, e.g., Chippewas of the Thames (see below). It should be indicated that the signatories to Treaty 29 are believed to include the communities listed, as the list may not be exhaustive.</p>	<p>they expressed interest due to the site's location within the area covered by the Nanfan Treaty. The Indigenous communities listed above are believed to have Indigenous Rights, Treaty Rights, or both, affecting the subject property. However, this list may not be exhaustive.'</p> <p>The same text has been added to Section 3.7.2.2 'Social and Cultural Environment' to describe the treaties associated with the Twin Creeks Landfill property.</p> <p>Consultation with Indigenous communities is ongoing. The communities noted above were contacted by email and telephone in February and March of 2021. Meetings were held with HDI and Six Nations in September 2021. Additional detail regarding the feedback received during this consultation with Indigenous communities and how it's been addressed within the EA has been added to Vol. I, Sections 3.11 'Input Received During Phase 1, Evaluation of Alternatives to the Undertaking', and 10.5 'Indigenous Community Consultation'. Cross references to documents provided in Appendices are now included in these sections.</p> <p>Chippewas of the Thames noted that the Thames River is of significance to the community as an important fishing area and source of drinking water. The evaluation indicators provided in Vol. I, Section 7.2 'Evaluation Indicators' for the 'Indigenous Connections to the Land' have been revised to better articulate potential impacts to Indigenous Rights and Interests such as the importance of the Thames River. One indicator has been developed to synthesize the results of all of the technical assessments with respect to how features of cultural and/or environmental significance to Indigenous communities are impacted. The new indicator is impacts to culturally and/or environmentally significant features to Indigenous communities.</p> <p>Other communities, including HDI, Six Nations, Walpole Island First Nation indicated an interest in participating in various aspects of the detailed design and/or construction. Commitments to ensure this continued participation have been added to Vol. I, Table 11.1 'Summary of EA Commitments.'</p>	
2.	<p><b>Reference to EA: 6.4.6 Aboriginal Connections to the Land</b></p> <p><b>Comments on Draft EA &amp; Rationale January 2020 version):</b></p> <p>The St Marys Landfill appears to be within the Treaty 29, 1827 area (not Treaty 3), the modern signatories to which include Aamjiwnaang First Nation, Caldwell First Nation, Chippewas of Kettle and Stony Point, Chippewas of the Thames First Nation and Walpole Island First Nation.</p>	<p>Vol. I, Section 6.4.6, 'Indigenous Communities and Treaty Rights 'has been updated to read:</p> <p>'The St. Marys Landfill is located within lands subject to Treaty 29, 1827. Aamjiwnaang First Nation, Caldwell First Nation, Chippewas of Kettle and Stony Point, Chippewas of the Thames First Nation and Walpole Island First Nation and the Haudenosaunee Confederacy have Indigenous and Treaty Rights associated with lands in, and around, the landfill, as described in Section 3.7.1.2 'Social and Cultural Environment'. The most proximate Haudenosaunee communities to the St. Marys Landfill are Oneida Nation of the Thames and Six Nations of the Grand River.'</p> <p>All references to the term "Aboriginal" have been replaced with the term "Indigenous" for greater consistency.</p>	



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	<p>Please also note that the most proximate Haudenosaunee communities to the St. Marys Landfill are Oneida Nation of the Thames and Six Nations of the Grand River. All of these communities may have Aboriginal or treaty rights in the area of the undertaking.</p> <p><b>Proposed Action/Solution:</b></p> <p>Please clarify that the St Marys Landfill appears to be within the Treaty 29, 1827 area (not Treaty 3), the modern signatories to which include Aamjiwnaang First Nation, Caldwell First Nation, Chippewas of Kettle and Stony Point, Chippewas of the Thames First Nation and Walpole Island First Nation. Please also note that the most proximate Haudenosaunee communities to the St. Marys Landfill are Oneida Nation of the Thames and Six Nations of the Grand River. Please reference sources or cross-reference consultation throughout this section. Please use consistent terminology as appropriate (e.g., Indigenous Connections to the Land, Aboriginal or treaty rights).</p> <p><b>Comments on Final EA (July 2021 version):</b></p> <p>See above [refers to comment on Final EA under Comment #1, not the comments on the previous version of the EA above].</p>	<p>Additional information regarding consultation with Indigenous communities, including cross-references to the Consultation Record in Vol IV have been added to Vol. I, Sections 3.11 'Input Received During Phase 1', and 10.5 'Indigenous Community Consultation'.</p>	
3.	<p><b>Reference to EA: 6.5.2 Evaluation Criteria and 6.6.4 Indigenous Connections to the Land</b></p> <p><b>Comments on Draft EA &amp; Rationale (January 2020 version):</b></p> <p>Traditional and/or historic uses should refer to current uses of the land or resources for traditional purposes. Presumably the undertaking will have no impact on things that happened in the past.</p> <p><b>Proposed Action/Solution:</b></p> <p>Please reference traditional and/or historic uses as current uses of the land or resources for traditional purposes. Please correct the description of the treaty areas and communities in section 6.6.4 as per above. Please clarify if there would be no opportunity for traditional uses to be re-established in the next 40 years on the landfill property and/or within the site vicinity. Please clarify the expected impacts on site and within the vicinity. Please reference sources or cross-reference consultation throughout this section. Please include information, e.g. mitigation measures, obtained through consultation in the final EA report.</p> <p><b>Comments on Final EA (July 2021 version):</b></p> <p>Although the proponent was not able to obtain meaningful input from Indigenous communities during the development and review of the draft and final EA, some input was provided e.g., by the Chippewas of the Thames First Nation during a February 4, 2014 meeting (Vol IV, Appendix H). The community indicated the importance of the Thames River and water quality and offered to provide info from a previous traditional land use plan – anything relevant should have been incorporated into the baseline and assessment of effects. For example, sections 3.7.1.2 (p.46) and 3.8.5 (p.85) make no mention of the current use/importance of the Thames River. These sections, as well as 3.7.2.2 (p. 52), 3.8.5 (p. 86), 6.6.6 (p.169) and 7.4.1 (p. 219-221) reflect a view, using past tense, etc. that Indigenous uses in the study area were historic only. It should be made clear that there are no current uses of the <u>landfill property or onsite study area</u> for traditional purposes. Sections 6.6.6 (p.169) and 7.4.1 (p. 219-221) should be updated to, at minimum, reflect the current use/importance of the</p>	<p>The evaluation indicators provided in Vol. I, Table 6.3 'Evaluation Criteria and Indicators' for the 'Indigenous Connections to the Land' have been revised to better articulate potential impacts to Indigenous Rights and Interests such as the importance of the Thames River. One indicator has been developed to synthesize the results of all of the technical assessments with respect to how features of cultural and/or environmental significance to Indigenous communities are impacted. The new indicator is impacts to culturally and/or environmentally significant features to Indigenous communities.</p> <p>Potential impact to the Thames River, identified by COTTFN, is assessed under this new indicator.</p> <p>Vol. I, Section 3.7.1.2 'Social and Cultural Environment' has been revised to indicate that, 'There are no current uses of the [St. Marys] landfill property for traditional purposes or resources. However, The Thames River and its banks continue to be used by Indigenous communities for hunting, gathering of traditional and medicinal plants and for spiritual purposes.'</p> <p>Similar text is provided in Vol. I, Section 3.7.2.2 'Social and Cultural Environment' to describe current uses of lands around the Twin Creeks landfill.</p> <p>Vol. I, Section 3.8.5, 'Indigenous Connections to the Land' has been updated to note the following:</p> <p>'The St. Marys Landfill is located in close proximity to the Thames River, which was an important travel corridor, source of sustenance and culturally significant feature for the Indigenous people who historically lived in the area. The Thames River continues to be used for hunting, gathering of traditional and</p>	

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	<p>Thames River and potentially other resources within the site vicinity study area. The baseline and assessment of effects in Sections 6 and 7 should reflect the updated study areas (i.e., on-site and site vicinity study areas).</p> <p>Table 6-3 (p. 119) lists the criteria and indicators for the Indigenous component, comprising environmental, cultural and land use sub-components, including "Impacts to any environmental items brought forward as concerns by Indigenous communities". The results of the assessment indicate no differences between the alternative methods (Table 7-14, p. 220); however results from the surface water quality (and biology) discipline, indicate that Alternative 5 is somewhat less preferred (and less preferred respectively), and this should likely have been considered in the assessment of effects on Indigenous communities in Section 7.41 (pp. 219-221).</p>	<p>medicinal plants and for spiritual purposes. Traditional uses may occur in the vicinity, including the Thames River, but have not occurred on the landfill property since before St. Marys Cement was active on the site. There would be no opportunity for traditional uses to be re-established in the foreseeable future if the landfill is expanded.'</p> <p>Vol. I, Section 7.12, 'Impacts to Indigenous Communities' has been updated to better reflect the potential effects to the Thames River in the evaluation of Indigenous Connections to the Land.</p>	
4.	<p><b>Reference to EA: 8 Potential Impacts, Mitigation Measures and Net Effects</b></p> <p><b>Comments on Draft EA &amp; Rationale:</b></p> <p>The Terms of Reference (ToR) identifies "Aboriginal" as an environmental component to be included in the assessment. The sub-components are "cultural" and "land use" as indicated by:</p> <ul style="list-style-type: none"> <li>• Presence of known sites within the area. Records of previous site disturbances</li> <li>• Distance to established communities</li> <li>• Expressed concerns</li> <li>• Existing land use focusing on First Nation's significance, size of area, presence of any sensitive uses</li> </ul> <p>This environmental component is not carried through as described in the ToR to the summary of potential impacts, mitigation measures and recommended monitoring activities in Section 8 of the Draft EA Report.</p> <p><b>Proposed Action/Solution:</b></p> <p>It is expected that a summary of potential impacts, mitigation measures and recommended monitoring activities include all environmental components identified in the ToR, or justification be explicitly provided as to why the evaluation for an environmental component is not carried out as described in the ToR.</p> <p><b>Comments on Final EA:</b></p> <p>Comment does not appear to have been addressed - it is not clear why these indicators were not used to evaluate alternatives. See above.</p>	<p>The evaluation indicators provided in Vol. I, Table 6.3 'Evaluation Criteria and Indicators' for the 'Indigenous Connections to the Land' have been revised to better articulate potential impacts to Indigenous Rights and Interests such as the importance of the Thames River. One indicator has been developed to synthesize the results of all of the technical assessments with respect to how features of cultural and/or environmental significance to Indigenous communities are impacted. The new indicator is impacts to culturally and/or environmentally significant features to Indigenous communities.</p> <p>The assessment of impacts to Indigenous Connections to the land for the comparative evaluation of Alternative methods is provided in Vol. I, Section 7.4 'Indigenous Communities'.</p> <p>Table 9.1 'Effects, Mitigation, Net effects, and Monitoring Requirements' details the effects, mitigation measures and net effects for these criteria and indicators for the preferred alternative.</p>	
5.	<p><b>Reference to EA: 9.1 Project Notices</b></p> <p><b>Comments on Draft EA &amp; Rationale:</b></p> <p>It is important to know who received which notices.</p> <p><b>Proposed Action/Solution:</b></p> <p>Please provide a cross-reference to the Project Contact List so it is apparent who received the project notices.</p>	Noted.	

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	<p><b>Comments on Final EA:</b></p> <p>Thank-you, comment addressed.</p>		
6.	<p><b>Reference to EA: 9.4.1 Work Plan Review</b></p> <p><b>Comments on Draft EA &amp; Rationale:</b></p> <p>Consultation with Indigenous communities should be summarized separately from public or agency consultation. This does not seem like an appropriate section to first list the Indigenous communities being consulted.</p> <p><b>Proposed Action/Solution:</b></p> <p>Please summarize consultation with Indigenous communities and agencies in a separate section or sub-section, organized by community. Were these the only communities that expressed interest (e.g., why were Oneida of the Thames, Munsee-Delaware not included)? Please include a summary for all communities identified by the Crown for consultation.</p> <p><b>Comments on Final EA:</b></p> <p>Comment addressed. In future please also organize relevant appendices by community for ease of reference.</p>	Acknowledged.	
<p>Submitter: <b>Air Quality</b>, Ministry of the Environment, Conservation and Parks September 24, 2021</p>			
1.	<p><b>Reference to EA: Volume 1 –Environmental Assessment Report, Executive Summary, ES12.6 Natural Environment</b></p> <p><b>Comments &amp; Rationale:</b></p> <p>The EA states, “The model indicates that the receptors generally do not exceed 6 Odour Units (OU) which is the level at which odour complaints are received. The frequency of this is <u>less than 0.5% at all receptors.</u>”</p> <p>This is inconsistent with the ESDM report (Volume III –Technical Reports, Appendix A – Expansion Emission Summary and Dispersion Modelling Report, August 2020, s. 8.13 General Odour, p. 19), which shows that “<u>a few sensitive receptors show 0.5% or more impacts over 6 OU.</u>”</p> <p><b>Proposed Action/Solution:</b></p> <p>The wording in the Executive Summary should be corrected for consistency with the ESDM report. The proponent has committed to reassess potential odour effects during the permitting stage (Environmental Compliance Approval (ECA) amendment application). This commitment is referenced throughout the EA, e.g.:</p> <ul style="list-style-type: none"> <li>• P.255: Section 9.0 Potential Impacts, Mitigation Measures, and Net Effects, Table 9-1; Natural Environment, Air Quality and Odour row, Mitigation Measures column, “odour will be re-evaluated and modeled based on detailed design plans during preparation of the ECA application.”</li> <li>• P.299: Section 11.0 Future Commitments and Environmental Compliance; s.11.1 Additional Studies and Design Considerations, “Update of the odour modeling results based on the detailed design plans.”)</li> </ul>	<p>Changes were made to the Executive Summary to shorten the summary and focus it and as a result the referenced edit and associated section was removed. The odour effects are discussed in Section 7.4.2.</p> <p>The Town has committed to re-evaluate odour at the permitting stage. This commitment is referenced in Table 11.1, ‘Summary of EA Commitments’ in the revised Final EA, specifically:</p> <p>Review and re-model potential odour impacts based on the detailed design plans. From the modelling, the Town will identify and develop plans for additional mitigation, monitoring, and contingency measures for odour as required.</p>	

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	<p>Given that the modelled frequency of odour threshold exceedances at sensitive receptors is above the MECP guidance limit of 0.5%, I am satisfied with the proponent's commitment to re-evaluate odour at the permitting stage, as previously discussed with the MECP.</p>		
2.	<p><b>Reference to EA: Volume 1 –Environmental Assessment Report P.255: Section 9.0 Potential Impacts, Mitigation Measures, and Net Effects, Table 9-1; Natural Environment; Air Quality and Odour</b></p> <p><b>Comments &amp; Rationale:</b></p> <p>I am satisfied with the proposed mitigation measures, recommended monitoring activities and contingency measures for dust and odour.</p> <p><b>Proposed Action/Solution:</b></p> <p>I support the proponent's plan to include the proposed mitigation, monitoring, and contingency measures for dust and odour in their Environmental Management Plan (EMP). The proponent has committed to submitting their EMP to the MECP as a part of their ECA amendment application (p.299: Section 11.0 Future Commitments and Environmental Compliance, s.11.1 Additional Studies and Design Considerations).</p>	<p>Comment noted.</p>	
<p>Submitter: <b>Groundwater Study</b>, Ministry of the Environment, Conservation and Parks, Southwest Region September 22, 2021</p>			
1.	<p>I have reviewed the final Hydrogeology Study prepared for the St. Marys Landfill EA. My comments on the draft version were provided by way of a series of memoranda addressed to Project Officers at your branch. The most recent memo, dated March 18, 2020, was addressed to Jenny Archibald.</p> <p>In the above-noted memo, the draft hydrogeological study did not address the Reasonable Use Guideline (RUG). This is the measure by which any landfill is shown to be protective of ground water resources. In response, a June 30, 2020, memo from the consultant presented an analysis showing that we could be reasonably certain that the site would comply with the RUG. In my July 15, 2020, email to the MECP project officer, Jenny Archibald, I indicated that this new analysis was acceptable.</p> <p>The final hydrogeological study still does not include a statement about the RUG. I recognize that the RUG concept is discussed in detail in Appendix J, and that is summarized in the main EA document.</p> <p>The prediction of compliance with the RUG is a key outcome of any ground water study for a waste site. In my opinion, this outcome should be identified in the hydrogeology study. It would be reasonable to keep this as a general summary, similar to what was presented in the main EA document. Either way, a person reading the final hydrogeology study should know that the site is likely to comply with the RUG. This is too important for being left to an appendix.</p>	<p>The prediction of compliance with the Reasonable Use Guideline (RUG) has been added in greater detail to Vol. I, Appendix D 'Supplementary Information in Support of Alternative 3A' Section 3.2.1.9 'Reasonable Use Guideline (RUG)'.</p>	
2.	<p>On page 64 (section 6.2) it is identified that moving the watercourse may result in a change in the ground flow direction. This could occur because the watercourse, which acts as a local discharge boundary, will be moved further from the landfill. This may reduce the gradient and result in a change in flow direction. A passage in the section reads:</p>	<p>Vol. I, Table 9.1 'Summary of Effects, Mitigation, and Net Effects', Section 11 'Future Commitments and Environmental Compliance' and Appendix D 'Supplementary Information in Support of Alternative 3A' have been rewritten to reflect the new preferred Alternative 3A and the mitigation, monitoring, and adaptive management framework that will support both the anticipated effects of the watercourse realignment and any unanticipated effects.</p>	

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	<p><i>“A conceptual model of current flow and potential flow taking into account the mounding in the waste, in the CKD mound, the location of the new watercourse may be needed to design new footprint areas.”</i></p> <p>The text should be changed to read that a conceptual model that considers the changes “...will be needed...”. As identified later in the section, the ground water level monitoring program will need to be adjusted to detect any changes in flow direction. This requirement should be addressed prior to approval of the Environmental Compliance Approval.</p>		
3.	<p>In section 6.2.3 the report identifies that “Major enhancement of the LCS (such as adding a liner) may need to be considered to provide additional separation between waste and bedrock.” The report does not identify the test that would need to be met for this to be deemed necessary. Is there a minimum required overburden thickness? What outcome would trigger this mitigative measure?</p>	<p>Vol. I, Section 8 ‘Description of the Undertaking’ has been rewritten to describe the new preferred Alternative 3A, with the LCS described in Section 8.2.2 ‘Leachate Collection System’. Vol. I, Appendix D ‘Supplementary Information in Support of Alternative 3A) provides additional information to support the conceptual design of Alternative 3A. Vol. I, Section 11 ‘Future Commitments and Environmental Compliance’ outlines the monitoring plan to ensure there are no unforeseen effects to groundwater quality and the Adaptive Management Framework which will be used to identify if additional mitigation measures are warranted.</p>	
<p>Submitter: <b>Land Use Planning</b>, Ministry of the Environment, Conservation and Parks, Environmental Assessment Branch September 28, 2021</p>			
1.	<p><b>Reference to EA: Volume I, Section 3.8.4.2</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>The first bullet in this section states, “<i>No changes in zoning or Official Plan designations would be required to expand the landfill</i>”, presumably in reference to the Town of St Marys. In contrast, the “<i>Net Effects</i>” subsection and Table 3-13 note that zoning of adjacent lands will need to be updated, presumably referring to zoning provisions of the Township of Perth South. Further, it is noted that as a result of Alternative 1 the zoning of adjacent lands will need to be updated, resulting in a minor benefit.</p> <p><b>Proposed Action/Solution:</b></p> <p>Statements referring to zoning, particularly in the “Net Effects” subsection and Table 3-13, should be clarified to:</p> <p>a) Specify the municipality that does or does not require zoning by-law updates, and;</p> <p>b) Indicate why undertaking zoning updates is beneficial, compared to the Do Nothing alternative.</p> <p>This comment is of minor significance.</p>	<p>It has been clarified that no changes to zoning are required in the Town of St. Marys or the Township of Perth South. As such, the text related to zoning in Vol. I, Section 3.8.4.2 ‘Land Use’ and Table 3-13 ‘Net Effects to Land Use’ was removed.</p>	

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2.	<p><b>Reference to EA: Volume I, Section 7.3.2</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>The EA fulfills the requirements of the MECP Guideline D-4. Guideline D-4 suggests that 50m be considered as an influence area requiring an assessment of impacts for any existing or proposed sensitive land uses. This EA has taken a comprehensive look at the impacts that may result both during construction and due to its operation.</p> <p><b>Proposed Action/Solution:</b></p> <p>No additional action recommended.</p>	Noted.	
Submitter: <b>Noise</b> , Environmental Permissions Branch, Ministry of the Environment, Conservation and Parks September 20, 2021			
1.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment - Section 2.3.4:</b></p> <p><b>Comments &amp; Rationale:</b></p> <p>Construction and Rehabilitation: reference was made to MECP Publication NPC-115. Reference should have also been made to Publication NPC- 118 and to the Town of St. Marys Noise By-Law No. 43 of 2007.</p> <p><b>Proposed Action/Solution:</b></p> <p>Include reference to MECP Publication NPC-118 and to the Town of St. Marys Noise By-Law No. 43 of 2007.</p>	<p>Section 2.3.4 'Construction and Rehabilitation' of the Noise Impact Assessment (Vol. III, Appendix B), and Section 7.4.3 'Noise' of Vol. 1, the Environmental Assessment Report, has been revised to read:</p> <p>"Site construction activities would likely include one or more of each of the following equipment: excavator, wheel tractor scraper, bulldozer, construction truck, and a compactor, along with vehicles arriving for onsite delivery of materials. It is expected that all construction activities will conform to the criteria set out in NPC115 of 83 dB, NPC- 118 and to the Town of St. Marys Noise By-Law No. 43 of 2007.</p>	
2.	<p><b>Reference to EA: Appendix B – Noise Impact Section 2.3.2.4.</b></p> <p><b>Comments &amp; Rationale:</b></p> <p>Ancillary Facilities – Stationary Sources: impulse noises from filling / emptying the bins of recycled materials should have been included in the noise report.</p> <p><b>Proposed Action/Solution:</b></p> <p>Include impulse noises from filling / emptying the bins of recycled materials.</p>	<p>Added Section 2.3.2.3 'Bin Impulses (Bin_Exist and Bin_Future)', to the Noise Impact Assessment (Vol. III, Appendix B), detailing the impulses generated when the waste bin transport truck contacts the bin. Source "Bin" was added to the model. Addition of source does not change the result of the report; all PORs remain in compliance. No changes to Vol I Section 7.4.3 'Noise' are required.</p> <p>Updated Tables 1-Exist 'Noise Source Summary Table (Existing)', Table 1-M2 'Noise Source Summary Table (Method 2)', Table 1-M3 'Noise Source Summary Table (Method 3)', Table 1-M5 'Noise Source Summary Table (Method 5)', Table 3-Exist 'Point of Reception Noise Impact Table (Un-Mitigated Existing)', Table 3-M2 'Point of Reception Noise Impact Table (Un-Mitigated Method 2)', Table 3-M3 'Point of Reception Noise Impact Table (Un-Mitigated Method 3)', Table 3-M5 'Point of Reception Noise Impact Table (Un-Mitigated Method 5)', Table 4-Exist Acoustic Assessment Summary Table: Daytime (Un-Mitigated Current), Table 4-M2 Acoustic Assessment Summary Table: Daytime (Un-Mitigated Method 2), Table 4-M3 Acoustic Assessment Summary Table: Daytime (Unmitigated Method 3), and Table 4-M5 Acoustic Assessment Summary Table: Daytime (Un-Mitigated Method 5) to reflect current model results.</p>	

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Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
3.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment - Sections 2.3.3, 2.4.2, 2.5.2, Table 5 &amp; Appendix A</b>  <b>Comments &amp; Rationale:</b></p> <p>Off-Site Vehicles: the noise impact due to off-site vehicles was assessed in terms of the Leq 16 hour daytime sound levels. This noise impact should have been assessed in terms of the Leq 1hour sound levels. The effect of the off-site vehicles on the existing noise environment should be described qualitatively and quantitatively, as shown in the table on page 5 of the MECP Noise Guidelines for Landfill sites (October 1998).</p> <p><b>Proposed Action/Solution:</b></p> <p>Address the noise impact due to off-site vehicles as per the MECP Noise Guidelines for Landfill sites (October 1998).</p>	<p>The calculation for noise impact due to off-site vehicles has been revised to assess minimum 1 hour sound levels at POR01 (the closest sensitive receptor). In addition, the effect of the off-site vehicles on the existing noise environment have been described qualitatively and quantitatively in Section 2.5.2 'Off-Site Noise' of the Noise Impact Assessment (Vol. III, Appendix B). No changes to Vol I Section 7.4.3 'Noise' are required.</p>	
4.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment - Tables 3 &amp; 4:</b>  <b>Comments &amp; Rationale:</b></p> <p>Points of Reception: two heights were used to assess the Plane of Window (POW) and the Outdoor Living Area (OLA) was used to assess the Outdoor Point of Reception (OPOR). The height of the POW should be based on the highest window (1.5 metres for 1-storey house and 4.5 metres for 2-storey house). The location of the OPOR is 30 metres from the building façade (not at the OLA).</p> <p><b>Proposed Action/Solution:</b></p> <p>The height of the POW should be based on the highest window (1.5 metres for 1-storey house and 4.5 metres for 2-storey house). The location of the OPOR is 30 metres from the building façade (not at the OLA).</p>	<p>Within the Noise Impact Assessment (Vol. III, Appendix B), Table 3-Exist Point of Reception Noise Impact Table (Un-Mitigated Existing), Table 3-M2 Point of Reception Noise Impact Table (Un-Mitigated Method 2), Table 3-M3 Point of Reception Noise Impact Table (Un-Mitigated Method 3), Table 3-M5 Point of Reception Noise Impact Table (Un-Mitigated Method 5)</p> <p>Table 4-Exist Acoustic Assessment Summary Table: Daytime (Un-Mitigated Current), Table 4-M2 Acoustic Assessment Summary Table: Daytime (Un-Mitigated Method 2), Table 4-M3 Acoustic Assessment Summary Table: Daytime (Unmitigated Method 3), and Table 4-M5 Acoustic Assessment Summary Table: Daytime (Un-Mitigated Method 5) have been revised removing references to POR height of 1.5m as all the receptors are two-storey houses. The location of the OPOR is 30 m from the building façade. No changes to Vol I Section 7.4.3 'Noise' are required.</p>	
5.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment -Figure 2:</b>  <b>Comments &amp; Rationale:</b></p> <p>Vacant Lots: confirmation should have been included in the noise report that there are no vacant lots closer and more exposed to the landfill site than the six selected points of reception (POR_01 to POR_06).</p> <p><b>Proposed Action/Solution:</b></p> <p>Include confirmation that there are no vacant lots closer and more exposed to the landfill site than the six selected points of reception (POR_01 to POR_06).</p>	<p>Within the Noise Impact Assessment (Vol. III, Appendix B ) Section 2.2, 'Sensitive Receptors' detailing surrounding receptors of interest, has been revised to indicate there are no vacant lots closer to and more exposed to the landfill than the 6 selected receptors. No changes to Vol I Section 7.4.3 'Noise' are required.</p>	
6.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment – Section 2.4.3:</b>  <b>Comments &amp; Rationale:</b></p> <p>Existing Noise Barriers: figures (to scale) should have been included in the noise report to show the locations, extents, lengths, and heights of these noise barriers.</p>	<p>With the Noise Impact Assessment (Vol. III, Appendix B ) Section 2.4.3, 'Elevation Contours', has been revised to indicate there are no noise barriers at the site. Elevation contours were used in the modelling to account for existing topography and are shown in Figure 4: 'Noise Contours'. No changes to Vol I Section 7.4.3 'Noise' are required.</p>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	<p><b>Proposed Action/Solution:</b></p> <p>Include figures (to scale) to show the locations, extents, lengths, and heights of these noise barriers.</p>		
7.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment - Sections 3.0, 6.0 &amp; Table 6:</b></p> <p><b>Comments &amp; Rationale:</b></p> <p>Reference was made to Publication NPC-205 and to the MOEE/GO Transit Noise and Vibration Protocol.</p> <p><b>Proposed Action/Solution:</b></p> <p>Delete reference to Publication NPC-205 and to the MOEE/GO Transit Noise and Vibration Protocol. Both documents are not applicable to this project.</p>	<p>Within the Noise Impact Assessment (Vol. III, Appendix B) Section 3, Table 3-1 'Noise Impact Objectives' has been revised to reference MECP Noise Guidelines for Landfill sites (October 1998). This reference has been updated in Sections 3 'Comparison of Alternative Methods' and 6 'References' and Table 6 'Comparison of the Change in Sound Levels'.</p> <p>The references to both NPC-205 and MOEE/GO Transit have been deleted.</p>	
8.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment - Tables 2, 4 and 6:</b></p> <p><b>Comments &amp; Rationale:</b></p> <p>Where did the 50 dBA daytime noise limit come from? The 55 dBA daytime limit should be used instead for landfilling operations (ref. Noise Guidelines for Landfill Sites, October 1998).</p> <p><b>Proposed Action/Solution:</b></p> <p>Use the daytime limit of 55 dBA daytime for landfilling operations (ref. Noise Guidelines for Landfill Sites, October 1998).</p>	<p>Within the Noise Impact Assessment (Vol. III, Appendix B), Revised Table 2 'Performance Limit(s) Summary Table', Table 4-Exist 'Acoustic Assessment Summary Table: Daytime (Un-Mitigated Current)', Table 4-M2 'Acoustic Assessment Summary Table: Daytime (Un-Mitigated Method 2)', Table 4-M3 'Acoustic Assessment Summary Table: Daytime (Unmitigated Method 3)', Table 4-M5 'Acoustic Assessment Summary Table: Daytime (Un-Mitigated Method 5)', and Table 6 'Comparison of the Change in Sound Levels' to use 55 dBA daytime limit.</p>	
9.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment - Table 3:</b></p> <p><b>Comments &amp; Rationale:</b></p> <p>Twelve tables are included with one table number (Table 3). The titles of these tables should explain the difference between the twelve listed tables.</p> <p><b>Proposed Action/Solution:</b></p> <p>The titles of these tables should explain the difference between the twelve listed tables.</p>	<p>Within Appendix B of the Noise Impact Assessment (Vol. III, Appendix B) the table numbering and titles explain the difference between the tables. For example, the first one is "Table 3-Exist: Point of Reception Impact Table (Un-mitigated Existing). This shows the impact at each POR under the (current) existing conditions. Tables "3-M2", "3-M3" and "3-M5" show impacts under each Alternative Method (2, 3 and 5 respectively) at each POR.</p> <p>The data in tables has been updated. The Predictor model was updated to version 2022 and added a source for "bins" which caused a small increase in the predicted sound levels at each receptor. No changes to Vol I Section 7.4.3 'Noise' are required.</p>	
10.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment - Table 5:</b></p> <p><b>Comments &amp; Rationale:</b></p> <p>The daily (24 hour) traffic volumes are listed in this table. The hourly (not daily) traffic volumes should have been used to calculate the noise impact due to the off-site vehicles.</p> <p><b>Proposed Action/Solution:</b></p> <p>Use the hourly (not daily) traffic volumes to calculate the noise impact due to the off-site vehicles.</p>	<p>Within the Noise Impact Assessment (Vol. III, Appendix B), Revised Table 5 'STAMSON: Daytime Sound Levels for Off-site Road Traffic'.</p> <p>Calculated the results from minimum 1-hr traffic volumes at POR01 (closest sensitive receptor to the road).</p>	



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Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

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11.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment - Figure 2:</b>  <b>Comments &amp; Rationale:</b></p> <p>The zoning of the surrounding lands south and west of the landfill site is missing.</p> <p><b>Proposed Action/Solution:</b></p> <p>Include a zoning map to show the locations of the landfill site as well as the surrounding land uses from the north / south / east / west sides.</p>	<p>Within Noise Impact Assessment (Vol. III, Appendix B), Figure 2 'Zoning Land Use Plan' has been updated to include zoning of surrounding lands to the west and south of the Site.</p>	
12.	<p><b>Reference to EA: Appendix B – Noise Impact Assessment – Appendix B</b>  <b>Comments &amp; Rationale:</b></p> <p>Appendix B: The following items should be noted:</p> <p>Day (16 hour) and night (8 hour) vehicular traffic volumes are used. Hourly vehicular traffic volumes should have been used instead; and</p> <p>Ten-year future traffic projections are used. The calculations should have been based on the current year (not a future horizon year).</p> <p><b>Proposed Action/Solution:</b></p> <p>Use hourly vehicular traffic volumes should have been used instead;</p> <p>Use calculations based on the current year (not a future horizon year).</p>	<p>Revised Appendix B "STAMSON Noise Model Output".</p> <p>Within the Noise Impact Assessment (Vol. III, Appendix B), revised calculation to assess minimum 1 hour sound levels at POR01 (the closest sensitive receptor). The output from STAMSON is included in Appendix B of the Noise Impact Assessment.</p>	
<p>Submitter: <b>Species at Risk</b>, Permissions and Compliance Section of Species at Risk Branch, Ministry of the Environment, Conservation and Parks                  October 4, 2021</p>			
1.	<p><b>Reference to EA: General</b>  <b>Comment &amp; Rationale:</b></p> <p>Given that the fieldwork was completed over six years ago, Species at Risk Branch (SARB) recommends that the property is surveyed for Bank Swallow and possible nesting habitat prior to the start of any site alteration/construction activities. If Bank Swallow is found to be nesting on the property and impacts to individuals and/or habitat is likely, MECP should be contacted for guidance under the ESA</p> <p><b>Proposed Action/Solution:</b></p> <p>Recommended that commitment to survey site for Bank Swallow habitat prior to any site alteration be included in EA (e.g. Section 11). Permissions and Compliance of Species at Risk Branch (SAROntario@ontario.ca) should be contacted for guidance under the <i>Endangered Species Act, 2007</i> if Bank Swallow is found to be nesting on site.</p>	<p>The following commitment was added to Vol. I, Section 9.0 'Potential Impacts, Mitigation Measures and Net Effects', Table 9.1 'Effects, Mitigation, Net Effects and Monitoring Requirements' and Table 11.1 'Summary of EA Commitments':</p> <p>The site will be surveyed for Bank Swallow habitat prior to any site alteration. The Permissions and Compliance of Species at Risk Branch (SAROntario@ontario.ca) will be contacted for guidance under the Endangered Species Act, 2007 if Bank Swallow is found to be nesting on site.</p>	

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Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
2.	<p><b>Reference to EA: General – throughout EA</b>  <b>For example– Table 9.1 (page 265)</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>Throughout the Natural Heritage Assessment, there are references to contacting the Ministry of Natural Resources and Forestry regarding species at risk and/or the <i>Endangered Species Act, 2007</i>. Given the transition of the SAR/ESA program to MECP, Permissions and Compliance Section of SARB is now the sole contact for SAR and the ESA and can be reached at <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a>. References to contacting MNR regarding species at risk throughout the document should be removed for clarity and to ensure the appropriate ministry is contacted if SAR are encountered on site. For example, Table 9.1 – Removal of Habitat for Endangered and Threatened Species states that MNR <u>and/or</u> MECP should be contacted for further advice. MNR (now MNDMNR) remains responsible for special concern species and significant wildlife habitat, so references to MECP in these sections should be removed.</p> <p><b>Proposed Action/Solution:</b></p> <p>Update to only include MECP contact for ESA protected species and MNDMNR for special concern species and Significant Wildlife Habitat.</p>	<p>Text updated in Vol. I Section 9.0, Table 9.1 'Effects, Mitigation, Net Effects and Monitoring Requirements' to include only the MECP contact for ESA protected species MNDMNR for special concern species and Significant Wildlife Habitat.</p> <p>Section 11.1 'Future Commitments and Environmental Compliance', Table 11.1 'Summary of EA Commitments' – was updated to note the commitment:</p> <p>Complete online project registration to address removal of impacted Eastern Meadowlark habitat under O. Reg. 830/21 of the Endangered Species Act (and throughout report where applicable).</p>	
3.	<p><b>Reference to EA: Section 3.7.1.3 – Natural Environment (page 48)</b>  <b>Section 3.8.2.4 Potential Impacts to Biology (page 69)</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>These sections state "Grassland areas <i>may</i> provide habitat for grassland birds or snakes, including species at risk."</p> <p>Species at risk habitat has been confirmed on site, and therefore, protection under the ESA applies to grassland habitat for Eastern Meadowlark.</p> <p>Authorization under the ESA (e.g., permit or registration) is required for any impacts to Eastern Meadowlark or its habitat.</p> <p><b>Proposed Action/Solution:</b></p> <p>This section should be updated to reflect confirmed Eastern Meadowlark habitat on site.</p>	<p>Updated text in Vol. 1 Section 3.7.1.3 '<i>Natural Environment</i>' and 3.8.2.4 '<i>Potential Impacts to Biology</i>' to confirm Eastern Meadowlark habitat on site.</p> <p>Authorization under the ESA (conditional exemptions under O.Reg. 830/21) is required for any impacts to Eastern Meadowlark or its habitat. The following commitment is in Table 11.1 'Summary of EA Commitments' (ESA italicised and underlined for context):</p> <p>Acquire all necessary permits and/or approvals pursuant to the:</p> <ul style="list-style-type: none"> <li>• Environmental Protection Act</li> <li>• Ontario Water Resources Act</li> <li>• Conservation Authorities Act</li> <li>• Planning Act</li> <li>• <i><u>Endangered Species Act</u></i></li> <li>• Fisheries Act</li> <li>• Fish and Wildlife Conservation Act</li> <li>• Ontario Heritage Act</li> </ul> <p>Others, as identified during the design phase (e.g., changes to electrical supply will be addressed through Festival Hydro and/or Hydro One etc.)</p>	
4.	<p><b>Reference to EA: Table 7-10: Summary of Potential Impacts to Biology Row: Mitigation to be applied to all Alternatives (page 205)</b>  <b>Comment &amp; Rationale:</b></p> <p>This section states that mitigation measures to avoid creation suitable nesting habitat for Bank Swallow should be applied during operation of the landfill. Mitigation measures should also be applied during the</p>	<p>Vol. I Section 7.1, Table 7 2 'Standard Mitigation and Operating Practices Common to All Alternatives', and Section 9.0, Table 9-1 'Effects, Mitigation, Net Effects, and Monitoring Equipment' have been updated to ensure appropriate mitigation measures are applied during construction, to prevent Bank Swallow from establishing nesting burrows (i.e., slope management, deterrents, and exclusion measures).</p>	

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#	Summary of Comments	Proponent's Response	Status
	<p>construction phase (in addition to operation).</p> <p><b>Proposed Action/Solution:</b></p> <p>Updates to table recommended to include appropriate mitigation measures during construction.</p>		
5.	<p><b>Reference to EA: Table 9-1 – Impacts, Mitigation, Net Effects and Monitoring Requirements</b></p> <p><b>Rows: Removal of Habitat for Endangered and Threatened Species and Species at Risk (page 263 and 264)</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>This section states that mitigation measures to avoid creation suitable nesting habitat for Bank Swallow should be applied during operation of the landfill. Mitigation measures should also be applied during the <u>construction</u> phase (in addition to operation).</p> <p>This is highly significant, given that the species has nested on the site previously, and should be addressed in the EA phase. If mitigation measures for Bank Swallow are not undertaken, there is an increased likelihood that Bank Swallow will continue nesting attempts, which triggers protection under the <i>Endangered Species Act, 2007</i> (ESA). Activities that impact Bank Swallow individuals and their habitat (e.g., grading of stockpiles being used as nesting habitat by Bank Swallow) are prohibited under the ESA and authorization under the ESA may be required.</p> <p>The bullet for Bank Swallow under the Mitigation Measures column should be updated to “a no- disturbance 50m setback from the nesting site shall be placed around the site” removing the wording “until no further evidence of breeding is observed.” If Bank Swallow is found to be nesting on the property, either during landfill construction or operation, the individuals and their nests receive protection under the ESA. An authorization under the ESA may be required for the alteration or removal of Bank Swallow nesting habitat, unless it has been determined that the habitat is no longer suitable (e.g., slumping) or being used. Species at Risk Branch of MECP should be contacted if it's determined that Bank Swallow is nesting on site.</p> <p><b>Proposed Action/Solution:</b></p> <p>Updates to the table recommended to include appropriate mitigation measures during construction. Mitigation measures should include appropriate site management (e.g. grading stockpile faces to avoid nesting), given that Bank Swallow (threatened) is known to occur in the area and previous nesting attempts by the species have been made on the site. The Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario should be followed during construction and when the landfill is in operation.</p> <p><b>Additional Comments (October 2022):</b></p> <p>Table 9.1 does not include a reference to avoiding the creation of nesting habitat during construction. SARB recommends that this table clearly states that mitigation measures for Bank Swallow should be implemented during landfill construction and operation.</p> <p>SARB's previous comments provided advice regarding a 50m setback from Bank Swallow nesting habitat. This bullet has been removed from Table 9.1. Please clarify why this bullet has been removed (e.g., the reference to implementation of the Bank Swallow BMP and the habitat description is intended to cover this).</p>	<p>Mitigation measures during construction have been added to Vol. I Section 9.0, Table 9-1 'Effects, Mitigation, Net Effects, and Monitoring Equipment', including measures to prevent Bank Swallow from establishing nesting burrows. Table 9-1 has also be updated to include the Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario (MNRF, 2017).</p> <p><b>Response to October 2022 Comments:</b></p> <p>Table 9-1 has been updated to note that the requirement to avoid creating habitat applies to both construction and operations. The text now reads:</p> <p>“Avoid the creation of temporary vertical or near-vertical spoil piles within the landfill and compost pile that are prone to frequent disturbance from landfill construction and operations to reduce the chance of attracting nesting Bank Swallow. Following Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario (MNRF, 2017).”</p> <p>This has also been added to the construction-related mitigation listed in Table 7-2.</p> <p>There are currently no active Bank Swallow nests on the site. Table 9-1 and Table 11-1 have been updated to include the following:</p> <p>“Should Bank Swallow be found nesting on-site, apply a 50 m buffer around the active nest.”</p> <p>Section 7.7.1 has also been updated to include the following mitigation:</p> <p>“Survey site for Bank Swallow habitat prior to any site alteration and contact SAROntario@ontario.ca for guidance under the Endangered Species Act 2007 if Bank Swallow is found to be nesting on site. Should Bank Swallow be found nesting on-site, apply a 50 m buffer around the active nest.”</p>	

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Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

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#	Summary of Comments	Proponent's Response	Status
Submitter: <b>Surface Water</b> , Ministry of the Environment, Conservation and Parks October 4, 2021			
1.	<p><b>Reference to EA: Volume III, Appendix C, Hydrogeological Study, Section Appendix J Pages 1-3</b>  <b>Comments &amp; Rationale:</b></p> <p>There are still several unknowns regarding the contents and extent of the northern half of the CKD pile which need to be addressed during the EA phase. This contamination has a high risk of accessing the relocated watercourse and without a full characterization, risk reduction and monitoring/mitigation plans cannot be developed.</p> <p>On numerous iterations of my comments, I have asked that the proponent characterize the CKD pile so that the risk of water quality impairment to the unnamed watercourse and therefore the Thames River is assessed.</p> <p>Most recently, I provided comments on the Draft Hydrogeology Study Report Dated December 2019 in a memo dated March 27,2020.</p> <p>On page 1 and 2 of this memo, I identified that the proponent has not properly characterized, delineated or identified how the CKD pile may affect surface water or groundwater resources at the site once the landfill expansion and watercourse realignment occur through the selection of Alternative #3.</p> <p>The pile still contains several contaminants of concern with elevated concentrations capable of causing unacceptable surface water quality impairment if it were to access the proposed relocated watercourse.</p> <p>Using the guidance provided by O. Reg 153/04 is a reasonable approach and one that could provide the necessary direction to assess the potential impacts from the CKD pile to the proposed surface water receiver.</p> <p>If further characterization work around the pile were to identify that the risk to the watercourse is limited to overland flow and not through groundwater, the risk assessment could be scoped and limited to the section of the pile that will need to be excavated/modified to accommodate the watercourse alteration.</p> <p>The report has identified “potential effects from relocating the watercourse” and therefore, the MECP will require, as a minimum, - a plan identifying the types of work which will be required to characterize chemicals of concern, - delineate the areas of exposure, - identify potential migration pathways (overland vs leachate creation) and - develop a monitoring/contingency plan to “consider mitigation measures, net effects and monitoring measures”.</p> <p>In response to my concerns, the consultant identified that previous work had been conducted (see Volume III, Appendix C, Hydrogeological Study, Section Appendix J pages 1-3).</p> <p>Though they provided updated information, on page 3 of 7 they agreed that <b>“the monitoring wells are located in the south part of the CKD stockpile and the extent of the CKD material has not been determined, particularly along the north edge of the stockpile.”</b></p> <p>Further, with regards to Surface Water Quality in the CKD stockpile, on page 3 of the memo, the consultant states that monitoring wells were installed in the CKD pile in 2004. <b>These results showed elevated levels of alkalinity, sulphate and total dissolved solids concentrations above the site background levels.</b> They identify that</p>	<p>Government Review Team (GRT) comments on the Final EA raised several concerns regarding preferred Alternative 3 particularly the proximity to, and the potential impacts of the Cement Kiln Dust (CKD) Pile on the relocated watercourse. To address these concerns, the Town re-engaged with St. Marys Cement (SMC) to discuss the watercourse relocation and how far onto SMC lands it might extend. SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their Aggregate Resources Act license. Reflecting on both the comments on the Final EA and the limitations with respect to SMC lands, the study team revisited the preferred Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to relocate the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a new Alternative, Alternative 3A. The new Alternative 3A was incorporated and assessed as part of the alternative methods evaluation onward.</p> <p>Section 7: ‘Phase 5: Assess Alternative Methods for Carrying out the Undertaking’ of Volume I, including Tables 7.6 ‘Groundwater Effects Assessment’ and 7.7 ‘Surface Water Effects Assessment’ reflect the addition of Alternative 3A and have been revised to provide additional information on the decision-making process.</p> <p>Additional baseline information with respect to hydrogeology including historic sampling data, a field work program (hydrogeological drilling program) implemented in April 2022 and evaluation of the potential risks and pathways for contamination from the CKD pile has been included within Vol. I, Appendix D ‘Supplementary Information in Support of Alternative 3A’.</p>	

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	<p>water quality improves between the center of the pile and the southeast corner, however, the “water quality between the center of the pile and the proposed watercourse along the north side of the stockpile is not known.”</p> <p>Further, they state that “<b>engineered measures may be required to address the quantity and quality of groundwater flow north toward the proposed watercourse.</b>”</p> <p>Note: These above statements support the need to complete the CKD pile characterization which has been requested.</p> <p><b>Proposed Action/Solution:</b></p> <p>As per my previous comments, during the EA phase, the proponent must:</p> <ol style="list-style-type: none"> <li>1. characterize the CKD pile which includes but will not be limited to: delineation; characterization of the chemicals of concern and potential migration pathways (i.e overland vs leachate creation), and</li> <li>2. develop monitoring/contingency plans in order to address these risks</li> </ol> <p>Note: It was previously discussed to use the characterization protocols described in O. Reg 153/04. This information can be included in a separate report which can be added to the EA. Ultimately, this work will lead to the development of monitoring and mitigation conditions which will be applied to the approvals during the ECA phase.</p>		
2.	<p><b>Reference to EA:</b></p> <ul style="list-style-type: none"> <li>• <b>Volume I, Section 3.8.2.2 Page 62;</b></li> <li>• <b>Volume I, Section 6.6.1.3 Page 138;</b></li> <li>• <b>Volume I, Section 6.6.1.4, Page 140;</b></li> <li>• <b>Volume I, Section 6.6.1.5 Page 157;</b></li> <li>• <b>Volume I, Section 7.1.5.1, Page 193;</b></li> <li>• <b>Volume I, Table 7-19, Page 233;</b></li> <li>• <b>Volume I, Table 9-1, Page 259.</b></li> </ul> <p><b>Comments &amp; Rationale:</b></p> <p>To further summarize the information collected to date as well as identifying the risks surrounding the CKD pile, I offer the comments and specific supporting sections here:</p> <p><b>NOTE: These comments are simply to support the characterization requirement and are of less significance.</b></p> <p>Volume I section 3.8.2.2 states that some work in proximity may be required if the watercourse needs to be relocated. The proponent correctly identifies that <b>there is some risk that disturbing the pile could release contaminants into the ground and surface water.</b></p> <p>Alternative 3 clearly states that the relocation of the watercourse will occur, placing it closer to the CKD pile.</p> <p>Volume I, section 6.6.1.3 page.138, state that there are two conclusions from the water quality testing conducted on the CKD pile which were <b>that the water quality is not homogeneous throughout the stockpile</b>, since the</p>	<p>Government Review Team (GRT) comments on the Final EA raised several concerns regarding preferred Alternative 3 particularly the proximity to, and the potential impacts of the Cement Kiln Dust (CKD) Pile on the relocated watercourse. To address these concerns, the Town re-engaged with St. Marys Cement (SMC) to discuss the watercourse relocation and how far onto SMC lands it might extend. SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their Aggregate Resources Act license. Reflecting on both the comments on the Final EA and the limitations with respect to SMC lands, the study team revisited the preferred Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to relocate the watercourse while maintaining the target capacity of the preferred alternative and its attributes. The new Alternative 3A was incorporated and assessed as part of the alternative methods evaluation onward.</p> <p>Vol. I, Section 7 ‘Phase 5: Assess Alternative Methods for Carrying out the Undertaking’ of Volume 1, including Tables 7.6 ‘Groundwater Effects Assessment’, and 7.7 ‘Surface Water Effects Assessment’ reflect the addition of Alternative 3A and have been revised to provide additional information on the factors considered in the decision-making process.</p> <p>Supplementary text outlining key decision-making factors considered in the comparison of the alternatives regarding the hydrogeologic component of the environment, has been added to Section 7 ‘Phase 5: Assess Alternative Methods for Carrying out the Undertaking’. Additional baseline information with respect to hydrogeology including historic sampling data, a field work program (hydrogeological drilling program)</p>	

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Proponent: **Town of St Marys**

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	<p>water quality at the southeast corner of the stockpile is considerably better than the quality in the centre; and further that <b>the water quality data shows an overall improvement with concentrations of many parameters lower in 2019 than 2005.</b></p> <p>Further, it states that groundwater samples collected in 2005 from two of the monitoring wells in stockpile were tested for inorganics, PCB and PAH. <b>Samples were found to be alkaline with a pH of 10 and high in sulphate, chloride, potassium, and sodium. These contaminants are capable of causing water quality impairment to the unnamed watercourse and ultimately the Thames River if not mitigated.</b></p> <p>As for groundwater flow, it states that groundwater is mounded below the cement kiln dust stockpile, creating <b>radial flow out from the stockpile, toward the (existing) watercourse and the exposed edge of the quarry.</b> Both watercourse and quarry would be discharge points for the shallow flow and that flow mapping indicates discharge to the (existing) watercourse.</p> <p>Volume I, Section 6.6.1.4, page 140 states that drainage on the east side of the site is less defined and that <b>surface water runoff from the slopes of the CKD stockpile flows radially in all directions,</b> including west towards the (existing) watercourse and north towards the quarry and that <b>the watercourse (existing and proposed) will leave the site by a culvert under Perth Road 123, eventually discharging into the Thames River.</b></p> <p>Volume I, Section 6.6.1.5 page 157 further supports the importance of protecting these watercourses since it is <b>considered to be indirect fish habitat and contributes to the water quality and quantity of the Thames River.</b></p> <p>Volume I, section 7.1.5.1, page 193 states that <b>cutting a new channel near the toe of the stockpile could induce shallow flow from the stockpile into the channel.</b></p> <p>This section further indicates that the relocation of the watercourse may necessitate acquisition of additional land from St. Mary's Cement or <b>relocating some of the CKD material along the north side of the stockpile.</b></p> <p>Further, CKD relocation efforts, including re-establishing cover materials, would need to be completed prior to relocation of the watercourse.</p> <p>This section also states that runoff from the surface of the stockpile does not appear to be a significant issue. <b>Of more importance is ensuring that the realigned watercourse is separated from the actual CKD material and that groundwater discharge from the stockpile to the watercourse is minimized.</b> Mitigation will be designed, as required, to ensure adequate separation.</p> <p>Volume I, Table 7-19 page 233 states that Alternative 3 requires the relocation of the watercourse which will require Mitigation and Monitoring to ensure potential impacts from the CKD stockpile are minimized <b>since the footprint of the CKD pile may be encroached by the watercourse realignment.</b></p> <p>Volume I, Table 9-1, page 259 warns that the <b>proximity of work to the CKD pile creates a potential for slope failure or leaching of CKD contaminants to watercourses.</b> Specifically, it states that this watercourse will be relocated closer to the CKD pile increasing the risk of slope failure or CKD contaminants entering the watercourse.</p> <p><b>Proposed Action/Solution:</b></p>	<p>implemented in April 2022 and evaluation of the potential risks and pathways for contamination from the CKD pile has been included within Vol. I, Appendix D 'Supplementary Information in Support of Alternative 3A'.</p>	

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	<p>These points further re-iterate the missing information and the need to conduct the characterization of the CKD pile during the EA phase. As above, ensure that the work is completed prior to the completion of the EA.</p>		
3.	<p><b>Reference to EA:</b></p> <ul style="list-style-type: none"> <li>• <b>Volume III, Appendix C, Hydrogeological Study, Section Appendix J Pages 4-6</b></li> <li>• <b>Volume I, Section 8.3, Page 243</b></li> </ul> <p><b>Comments &amp; Rationale:</b></p> <p>Page 4 of the memo also discusses the concern about the pathway of contamination through overland flow from stormwater and entrained sediment from the CKD pile.</p> <p>Specifically, the consultant indicates on page 4 that “the final channel design will require an investigation to determine if the CKD extends beyond the toe of the stockpile and the type of soil below the channel.”</p> <p>The potential mitigation measures are identified on page 5 of the memo and include completing an investigation within the grading limits of the proposed watercourse to <b>determine the soil adjacent to and below the watercourse, as well as to determine whether further CKD material must be relocated.</b></p> <p>Further, they suggest the installation of groundwater monitoring wells between the watercourse and the CKD pile to determine if further mitigation measures are needed.</p> <p>As for stormwater runoff and mobilization of entrained sediment, they suggest that shallow stormwater ditches can be incorporated into the watercourse construction to divert runoff to a stormwater basin.</p> <p>Page 6 of the memo addresses the concern of impacted groundwater discharging to the watercourse. In the memo they state that a collection drain can be constructed between the CKD stockpile and the watercourse to prevent impacted groundwater from accessing the watercourse.</p> <p>Volume I, Section 8.3, page 243 also recommends and summarizes these mitigation actions.</p> <p><b>Proposed Action/Solution:</b></p> <p>I recommend that the MECP agree to these mitigation strategies and have them included in a monitoring/mitigation plan that can ultimately form a condition of the future ECA.</p>	<p>As noted above (item 1), because of questions raised by MECP a new Alternative 3A has been introduced and assessed. Relevant monitoring, identified in Vol. I, Section 11.2 'Monitoring Program', are listed below:</p> <ul style="list-style-type: none"> <li>• Weekly and monthly site operations monitoring</li> <li>• Spring and fall groundwater and surface water sampling program</li> <li>• Review of public complaints on an as-received basis</li> <li>• Periodic MECP site inspection reports</li> <li>• Changes to address immediate needs, regulatory requirements, etc.</li> <li>• Annual assessment of operations, monitoring results and complaints, making recommendations for future design, operation and monitoring changes.</li> </ul> <p>The monitoring will be used in an Adaptive Management framework (see Section 11.3 'Adaptive Management Plan') to identify if changes are required to mitigate any unforeseen effects.</p>	
<p>Submitter: <b>Wastewater Review</b>, Municipal Water and Wastewater Permissions, Ministry of the Environment, Conservation and Parks September 20, 2021</p>			
1.	<p><b>Reference to EA: P. 22 (Sanitary Sewer Design Sheet) of the Leachate Treatment and Disposal</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>Velocity of the sanitary sewer in several segments are noted to be 5.64 m/s. As per the Ministry's 2008 Design Guidelines for Sewage Works, the velocities in sanitary sewer systems should not be more than 3 m/s, especially where high grit loads are expected. Higher velocities should be avoided unless special precautions are taken.</p>	<p>The calculation of sewer segment velocity is based on 100% of the pipe's flow capacity. The landfill expansion anticipates flows significantly below the pipe's flow capacity. The pipe has been in place since the mid 1990's and the Town reports there has been no damage associated with this velocity. Therefore, no provisions are required to protect against pipe displacement by impact and erosion.</p>	

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	<p>Where velocities greater than 4.6 m/s are attained, special provision should be made to protect against pipe displacement by impact and erosion.</p> <p><b>Proposed Action/Solution:</b></p> <p>Proponent should provide clear reasoning as to why the velocity range is above the recommended 3 m/s, and/or indicate the provisions in place to protect against pipe displacement by impact and erosion.</p>		
2.	<p><b>Reference to EA: Page 18 of the Leachate Treatment and Disposal St. Marys Landfill Site Expansion, Town of St. Marys dated January 2020</b></p> <p>The report adequately addresses existing and future leachate flows to the St. Marys Wastewater Treatment Plant (WWTP). The report concludes that it is not expected that the additional leachate will adversely affect the ability of the St. Mary's WWTP to meet its effluent requirements. This conclusion is acceptable as the estimated current and future leachate volume generated represents only 1% of the average daily flow currently processed by the WWTP. The report also addresses increase in sludge production, handling, disposal, future estimated leachate production and leachate conveyance.</p> <p>NA [no action required]</p>	<p>No Action required.</p>	
3.	<p><b>Reference to EA: P. 244 of the St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report Volume I – Environmental Assessment Report, dated July 2021</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>It is indicated that stormwater management basins currently exist at the site for stormwater management, and that possible removal and relocation of basins may occur. However, there is no clear indication of the impact of the expansion on potentially additional stormwater flows/ increased runoff from increased footprint, whether or not the existing stormwater management basins have sufficient capacity for the increased runoff, and/or what additional stormwater management controls are proposed to be in place due to the landfill expansion.</p> <p><b>Proposed Action/Solution:</b></p> <p>Please prepare and submit a stormwater management report outlining the quantification of stormwater flows to the stormwater management basins as well as additional stormwater flows due to the expansion and how these flows will be contained/released from the site to ensure quantity control is provided, such that there is no appreciable change in the potential for flooding in the watercourses receiving surface water discharges. Proponent should also indicate if there are any groundwater interactions with the stormwater basin. Proponent to append stormwater management report into the EA and include explanatory summary in the EA report.</p>	<p>Vol I, Section 7 'Phase 5: Assess Alternative Methods for Carrying Out the Undertaking', including all of the evaluation tables have been revised to reflect the addition of Alternative 3A. Alternative 3A is the preferred alternative and will require relocation of the stormwater ponds. Vol. 1 Section 8.2.6, 'Stormwater Management', details the changes to the stormwater management system for Alternative 3A.</p> <p>Quantification of stormwater flows to the stormwater management basins as well as additional stormwater flows due to the expansion and how these flows will be contained/released from the site are discussed in Vol. I, Appendix D 'Supplementary Information in Support of Alternative 3A'.</p> <p>A Stormwater Management Report will be submitted to the MECP and UTRCA for review at the detailed design stage of the project. The following commitment will be added to Vol. 1, Table 11.1 'Summary of EA Commitments':</p> <p style="padding-left: 40px;">Develop a Stormwater Management Plan and submit to MECP and UTRCA for approval prior to construction. Plan will provide additional detail including velocities at the basin outlets for various storm events, cross sections of the stormwater facilities showing flood water surface elevations for the 100 and 250 year storm event as well as pond inlet and outlet details.</p>	
4.	<p><b>Reference to EA: P. 199 of the St. Marys Future Solid Waste Disposal Needs Environmental Assessment Report Volume I – Environmental Assessment Report, dated July 2021</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>Vertical expansion of the landfill can lead to an increase inside slopes, which can result in increased erosion and sediment deposition. A general indication of the possible erosion controls to be implemented at the site to</p>	<p>A Sediment and Erosion Control Plan will be submitted to MECP for review at the detailed design stage, as noted in Vol. 1, Table 11.1 'Summary of EA Commitments':</p> <p>'Develop an Erosion and Sediment Control Plan in consultation with the UTRCA and MECP.'</p>	



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	<p>mitigate increased runoff has been provided. However, the report does not clearly address the erosion and sediment controls to be implemented both during the construction period and operational period of the expanded landfill.</p> <p><b>Proposed Action/Solution:</b></p> <p>Commit to preparation of erosion and sediment control plan and indicate specific measures intended to be included in the erosion and sediment control plan during construction and operation.</p>		
<p>Submitter: <b>Ministry of Northern Development, Mines, Natural Resources and Forestry</b> August 25, 2021</p>			
1.	<p>The Town of St. Marys has undertaken detailed conversations with the NDMNRF in the past to determine the necessary steps as per applicable policies and legislations. This past correspondence included the Town making a direct submission to the NDMNRF's Dave Marriott on February 28, 2018 – responding to Mr. Marriott's previous Aug. 18, 2018, comments on the EA. These responses were incorporated into the Response Action Plan (Volume IV, Appendix E) and addressed as noted on Vol. 1, Section 10.4.3 in the EA Report (including the Natural Heritage Assessment - in Volume III). Mr. Marriott replied (May 15, 2018) asking that the EA also update the NDMNRF's Species at Risk (SAR) Observation Form (see Volume IV, Appendix D). This too has been completed as part of the EA Report. [We note that the MECP is now responsible for SAR review and will be involved in reviewing the Observation Form.]</p> <p>Following the August 2021 Notice of Submission of the EA, NDMNRF sent a form letter typical of pre-consultation activities outlining the relevant policies and legislation to guide the identification and assessment of natural features. No additional comments were provided.</p>	<p>The Town of St. Marys has undertaken detailed conversations with the NDMNRF in the past and have responded to all comments received to date.</p> <p>To ensure that the NDMNRF, and applicable policies and legislation will be consulted as the project continues, the Town has added the following commitment to Vol. 1 Section 11.3 'Commitments to Ongoing Consultation'. Thank you for your email. The Town of St. Marys has added the following commitment to Vol. 1 Table 11.1 'Summary of EA Commitments':</p> <p>Contact the NDMNRF should there be any potential need for a permit under the Petroleum Wells &amp; Oil, Gas and Salt Resource Act, or Public Lands Act &amp; Lakes and Rivers Improvement Act. Obtain approvals as required.</p>	
<p>Submitter: <b>Ministry of Heritage, Sport, Tourism and Culture Industries</b> October 1, 2021</p>			
	<p>MHSTCI's interest in this EA project relates to its mandate of conserving Ontario's cultural heritage, which includes:</p> <ul style="list-style-type: none"> <li>• archaeological resources, including land and marine;</li> <li>• built heritage resources, including bridges and monuments; and</li> <li>• cultural heritage landscapes.</li> </ul> <p>Under the EA process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources.</p> <p><b>Project Comments:</b></p> <p>Given there are no direct impacts to cultural heritage resources through this undertaking, and the mitigation measures included in the EA report in the case of unexpected impacts, MHSTCI does not have any substantive concern with this project. However, we would suggest editorial revisions.</p>	<p>Acknowledged.</p>	
A.	<p><b>General Comment:</b> Update the ministry name from Ministry of Tourism, Culture and Sport to Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI) throughout the Environmental Assessment Report and appendices.</p>	<p>All references to the former <i>Ministry of Tourism, Culture and Sport</i> (MTCS) have been replaced with <i>Ministry of Heritage, Sport, Tourism, and Culture Industries</i> (MHSTCI).</p>	

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B.	<p><b>General Comment:</b> Any references to the Guidelines for Preparing the Cultural Heritage Resource Component of Environmental Assessments (1992) and Guidelines on the Man-Made Heritage Components of Environmental Assessments (1981) can be removed as they have been superseded by other policies, plans and regulations.</p>	<p>References to the Guidelines for Preparing the Cultural Heritage Resource Component of Environmental Assessment (1992) and Guidelines on the Man-Made Heritage Components of Environmental Assessments (1981) made in Section 6.4.2.1 'Built Heritage Resources and Cultural Heritage Landscapes' have been removed.</p> <p>The text in this section was replaced with the following:</p> <p>The CHRA assessed the presence of Built Heritage Resources and Cultural Heritage Landscapes in accordance with the Standards and Guidelines for Conservation of Provincial Heritage Properties (April 2010), Provincial Policy Statement and policies listed in the Town of St. Marys Official Plan (2007 Consolidation, Section 2.3).</p>	
C.	<p><b>Section 3.7.1.2 (Existing St. Marys Landfill, Page 46) / Section 3.7.2.2 (Twin Creeks Landfill, Page 52):</b> These sections need to describe existing conditions of the cultural environment informed by the technical cultural heritage studies (i.e., archaeological assessment and cultural heritage resource assessment).</p>	<p>For the purposes of the evaluation of the Alternatives to the Undertaking, a coarse level evaluation was completed using information available in the Town of St. Marys Official Plan, Twin Creeks Landfill website and aerial photography. This is consistent with the process outlined in the Terms of Reference.</p> <p>The Stage 1 Archaeological Assessment and Cultural Heritage Resource Assessment were conducted after the evaluation of Alternatives to the Undertaking had been completed.</p> <p>The results of the Stage 1 Archaeological Assessment and CHRA were incorporated into the evaluation of Alternative Methods.</p> <p>In addition, Section 3.7.1.2 'Social and Cultural Environment' has been updated to clarify the sources of information that were used during this portion of the EA.</p>	
D.	<p><b>Section 3.8.3.1 Potential Impacts to Archaeological Resources (Page 72):</b> A Stage 1 AA was undertaken for the St. Marys Landfill expansion. The report concluded that the entire on-site study area has been documented to not retain archaeological potential and that these lands do not require further archaeological assessment. The AA report also recommended that should the proposed work extend beyond the current study area then further Stage 1 AA should be conducted to determine the archaeological potential of the surrounding lands. This section needs to be revised to clearly articulate the due diligence undertaken to date, potential impacts and future commitments.</p>	<p>As per the response to comment C, above, the Stage 1 AA was not completed during the Alternatives to the Undertaking phase of the EA documented in Section 3.8.3.1 'Potential Impacts to Archaeological Resources'</p> <p>A Stage 1 AA was undertaken for the landfill property including all of the lands required for the landfill expansion and concluded that no archaeological resources are likely to be present at, or around, the St. Marys landfill.</p>	
E.	<p><b>Section 3.8.3.2 Potential Impacts to Built Heritage / 3.8.3.3 Potential Impacts to Cultural Heritage Landscapes (Pages 72-73):</b> A Cultural Heritage Resource Assessment has been undertaken and identified 12 resources including 11 cultural heritage landscapes and one built heritage resource within the study area vicinity. The Assessment report also included recommendations. These sections should be consolidated and revised.</p>	<p>As per the response comment C, above, the CHRA was not completed during the Alternatives to the Undertaking phase of the EA documented in Section 3.8.3.2 'Impacts to Built Heritage'.</p> <p>The Cultural Heritage Resource Assessment informed the evaluation of Alternative Methods. The recommendations from the CHRA have been added to Section 7.9.1 'Built Heritage and Cultural Heritage Landscapes'.</p>	
F.	<p><b>Section 6.6.2.1 Built Heritage Resources and Cultural Heritage Landscapes (Page 158-160):</b> Section 6.6 is the description of the existing environment. This section should be revised to align with the proposed wording in Section 3.7.1.2 (See Comment C above).</p>	<p>Section 6.4.2.1 'Built Heritage and Cultural Heritage Landscapes' has been updated. The previous text was replaced with the wording noted below:</p>	

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	<p>The Executive Summary will need to be revised accordingly.</p>	<p>“A Cultural Heritage Resource Assessment (CHRA): Built Heritage Resources and Cultural Heritage Landscapes- Existing Conditions was undertaken by ASI in November 2015. The CHRA assessed the presence of Built Heritage Resources and Cultural Heritage Landscapes in accordance with the Standards and Guidelines for Conservation of Provincial Heritage Properties (April 2010), Provincial Policy Statement and policies listed in the Town of St. Marys Official Plan (2007 Consolidation, Section 2.3). The assessment consisted of data collection, background historic research, review of secondary source material and field review. The purpose was to present an inventory of known or potential built heritage resources and/or cultural heritage landscapes as well as identify any potential impacts and proposed appropriate mitigation measures to minimize effects. The CHRA can be found in Volume III, Appendix E.</p> <p>The background research, data collection, and field review conducted for the Study Area determined that 12 cultural heritage resources are located within the Study Area Vicinity, as summarized in 6-13 ‘Cultural Heritage Resources in the Study Area Vicinity’. Of these, 11 are Cultural Heritage Landscapes and one is a Built Heritage Resource. No cultural heritage resources were identified within the On-Site Study Area.”</p> <p>A figure showing the location of the 12 resources is provided in Figure 6-6 ‘Cultural Heritage Resources’ of the Vol. I EA document.</p> <p>The following recommendations have been added to Section 7.9.1 ‘Built Heritage and Cultural Heritage Landscapes’ and Table 7-13 ‘Potential Effects to Cultural Heritage Landscapes’:</p> <ol style="list-style-type: none"> <li>1. Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.</li> <li>2. Once designs of the proposed work are available, this report will be updated with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.</li> <li>3. Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.</li> </ol> <p>The Executive Summary has been similarly revised.</p>	

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G.	<p><b>Section 6.6.2.2 Archaeological Resources (Page 161):</b> This section should be revised to align with the proposed wording in Section 3.7.1.2 (See Comment #3 above).</p> <p>The Executive Summary will need to be revised accordingly.</p>	<p>Section 6.4.2.2 'Archaeology Resources' has been updated. The previous text was replaced with the following:</p> <p><b>Methodology</b></p> <p>A Stage 1 Archaeological Assessment (under Project Information Form number P392-0171- 2015) was completed by ASI. A Stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, a property visit to inspect its current condition and contacting MHSTCI to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment (e.g., Stage 2-4) as necessary. The Stage 1 assessment was conducted in accordance with the <i>Ontario Heritage Act</i> and the Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism and Culture, 2011).</p> <p><b>Existing Archaeological Resources</b></p> <p>The Stage 1 Archaeological Assessment report has been entered into the Ontario Public Register of Archaeological Reports. The report concluded that the entire on-site study area has been documented to not retain archaeological potential and that these lands do not require further archaeological assessment. The Stage 1 assessment is included in Volume III - Appendix F."</p> <p>The Executive Summary has been revised accordingly.</p>	
H.	<p><b>Section 7.2.1 Built Heritage Resources / Section 7.2.2 Cultural Heritage Landscapes (Pages 207-211):</b> A Cultural Heritage Resource Assessment has been undertaken and identified 12 resources, including 11 cultural heritage landscapes and one built heritage resource within the study area vicinity. No built heritage resources and/or cultural heritage landscapes were identified within the onsite study area. The Assessment report also included recommendations. These sections should be consolidated and revised (See Comment E) above).</p> <p>Furthermore, it is not clear how the assessment of impacts on built heritage resources and cultural heritage landscapes were determined. Any discussion should be based on technical cultural heritage landscapes.</p> <p>There is no need to include a definition of cultural heritage landscapes in the EAR, as it is articulated in the CHRA. Should you wish to include one, the definition should be the one from the Provincial Policy Statement, 2020.</p>	<p>It is understood that Built Heritage Resources and Cultural Heritage Landscapes are both considered to be Cultural Heritage Resources. However, these two sections have not been consolidated as they were identified as separate criteria in the Terms of Reference.</p> <p>The impact assessments in Section 7.9.1 'Built Heritage and Cultural Heritage Landscapes' have been changed to better align with the CHRA. These sections now include the following text and recommendations from the CHRA:</p> <ol style="list-style-type: none"> <li>1. Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.</li> <li>2. Once detailed designs of the proposed work are available, this report will be updated with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.</li> </ol>	

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		<p>3. Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.</p> <p>The definition of cultural heritage landscapes in Section 7.9.1 'Built Heritage and Cultural Heritage Landscapes' has been removed.</p>	
I.	<p><b>Section 7.2.3 Archaeological Resources (Page 212):</b> A sentence to acknowledge that further archaeological assessment be undertaken should the proposed work extend the current study area should be included. (See Comment D).</p> <p><b>Additional Comments (October 2022):</b></p> <p><b>Amended Section 7.8.2 Archaeological Resources (Page 228)</b> . MCM has reviewed the revised text and recommends that the amended section include the language provided in your response dated September 20<sup>th</sup>.</p>	<p>The following sentence has been added to Section 7.8.2 'Archaeological Resources':</p> <p>"Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to any ground disturbing activities."</p> <p><b>Response to Additional Comments:</b></p> <p>Section 7.8.2 has been updated to include the following language:</p> <p>"Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to any ground disturbing activities."</p> <p>This language has also been added to Table 9-1.</p>	
J.	<p><b>Table 9-1 Impacts, Mitigation, Net Effects and Monitoring Requirements / Environmental Component: Archaeological Resources (Page 266):</b> Under the Mitigation Measures column, the name of the unit to be contacted at MHSTCI should be Archaeology Program Unit at <a href="mailto:archaeology@ontario.ca">archaeology@ontario.ca</a>.</p> <p>The AA report also recommended that should the proposed work extend beyond the current study area then further Stage 1 AA should be conducted to determine the archaeological potential of the surrounding lands. MHSTCI recommends that a paragraph be included to acknowledge that under the Recommended Monitoring Activities and Contingency Measures (See Comment D) above.</p> <p><b>Additional Comments (October 2022):</b></p> <p><b>Amended Table 11-1 Summary of EA Commitments (Page 357)</b> MCM has reviewed the revised text and recommends that the list of commitments include the language provided in your response dated September 20<sup>th</sup>.</p>	<p>The contact noted in Vol. I, Table 9-1 'Effects, Mitigation, Net Effects, and Monitoring Requirements' has been updated to reference MHSTCI, Archaeology Program Unit at <a href="mailto:archaeology@ontario.ca">archaeology@ontario.ca</a>.</p> <p>The following wording has been added to the list of commitments in Table 11-1:</p> <p>Conduct a further Stage 1 Archaeological Assessment (and further assessment, if required) to determine the archaeological potential of the surrounding lands if the proposed work extend beyond the current On-site Study Area.</p> <p><b>Response to Additional Comments:</b></p> <p>Table 11-1 has been updated to include the following language:</p> <p>"Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to any ground disturbing activities."</p>	

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Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
K.	<p><b>Table 9-1 Impacts, Mitigation, Net Effects and Monitoring Requirements / Environmental Component: Cultural Heritage Landscapes (Page 266):</b> The environmental component should be <b>Built Heritage Resources</b> and Cultural Heritage Landscape. The row will need to be revised to better describe the impact assessment as per Comments D), E) and H) above.</p> <p><b>Additional Comments (October 2022):</b>  <b>Amended Table 11-1 Summary of EA Commitments (Page 357)</b> MCM has reviewed the revised text and recommends that the list of commitments include the language provided in your response dated September 20<sup>th</sup>.</p>	<p>Vol. I, Table 9-1 'Effects, Mitigation, Net Effects, and Monitoring Requirements' has been updated to include both the Built Heritage Resources and Cultural Heritage Landscapes as the environmental component.</p> <p>The row has been updated to note that impacts will be further assessed in an updated CHRA to be prepared during detailed design. The following recommendations have now been added to Table 11.1 'Summary of EA Commitments':</p> <ul style="list-style-type: none"> <li>• Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.</li> <li>• Once detailed designs of the proposed work are available, this report will be updated with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.</li> <li>• Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.</li> </ul> <p><b>Response to Additional Comments:</b></p> <p>The following wording has been added to Table 11-1 and Table 9-1:</p> <ul style="list-style-type: none"> <li>• Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.</li> <li>• Once detailed designs of the proposed work are available, the Cultural Heritage Resources Assessment will be updated with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.</li> <li>• Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.</li> </ul>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
1.	<p>Upper Thames River Conservation Authority (UTRCA) staff is in receipt of your email (dated August 12, 2021) regarding the St. Marys Future Solid Waste Disposal Needs Environmental Assessment and associated Study Reports (Volume I-Environmental Assessment Report). We offer the following comments under Ontario Regulation 157/06 and our responsibilities as a commenting agency providing technical review and advisement related to natural heritage, water resources and natural hazard management pursuant to relevant legislation and policies set out in the UTRCA Planning Policy Manual (June 28, 2006):</p> <p>A portion of the landfill property is regulated by the Conservation Authority due to the presence of the flooding hazard associated with an unnamed tributary of the North Thames River.</p>	<p>Comment noted.</p> <p>Government Review Team (GRT) comments on the Final EA raised several concerns regarding preferred Alternative 3 particularly the proximity to, and the potential impacts of the Cement Kiln Dust (CKD) Pile on the relocated watercourse. To address these concerns, the Town re-engaged with St. Marys Cement (SMC) to discuss the watercourse relocation and how far onto SMC lands it might extend. SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their Aggregate Resources Act license. Reflecting on both the comments on the Final EA and the limitations with respect to SMC lands, the study team revisited the preferred Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to relocate the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a refinement to the preferred alternative, Alternative 3A.</p> <p>Section 7 'Phase 5: Assess Alternative Methods for Carrying out the Undertaking' of Volume I, including all evaluation tables, have been revised to reflect the addition of Alternative 3A. Sections 8 'Description of the Undertaking' and 9 'Potential Impacts, Mitigation Measures, and Net Effects' have been revised to reflect Alternative 3A as the new preferred alternative.</p> <p>Instead of the watercourse being relocated to north of the CKD pile, the new Alternative 3A retains the watercourse in its existing location, except for a ~230 metre reach within the middle of the site which will be realigned to the northeast to facilitate landfill expansion. This realigned stretch is conceptually designed to have a:</p> <ul style="list-style-type: none"> <li>• 3:1 embankment;</li> <li>• 2.5m to 3.0m wide riparian channel;</li> <li>• ±15m wide watercourse bottom;</li> <li>• 50m to 60m wide corridor;</li> <li>• ±20m buffer to CKD pile; and</li> <li>• CKD pile interception swale.</li> </ul> <p>Enhancing the natural features of the watercourse's riparian channel, to improve aquatic habitat will be considered during detailed design.</p>	
2.	<p>The UTRCA regulates development within the Regulation Limit in accordance with Ontario Regulation 157/06 made pursuant to Section 28 of the Conservation Authorities Act. This regulation requires proponents to obtain written approval from the UTRCA prior to undertaking any works in the regulated area including filling, grading, construction, alteration to a watercourse and/or interference with a wetland.</p>	<p>The Town of St Mary's acknowledges that UTRCA approval will be required for any realignment of the watercourse associated with the preferred Alternative 3A. A commitment to obtain all necessary approvals from the UTRCA prior to any applicable works within the regulated area is listed in Vol. I, Table 11.1, 'Summary of EA Commitments'.</p> <p>Acquire all necessary permits and/or approvals for the undertaking.</p>	
3.	<p>A Conservation Authorities Act – Section 28 – Development, Interference with Wetlands and Alterations to</p>	<p>The Town of St Mary's acknowledges that UTRCA approval will be required for any realignment of the watercourse associated with the preferred Alternative 3A. A</p>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	Shorelines and Watercourses Permit will be required for any development, filling, excavation, site grading/alteration (including a channel realignment) within the regulated area of the property.	commitment to obtain all necessary approvals from the UTRCA prior to any applicable works within the regulated area is listed in Table 11.1, 'Summary of EA Commitments':  Acquire all necessary permits and/or approvals for the undertaking.	
4.	A Stormwater Management Report should be provided to the UTRCA at the detailed design and permitting stage for review and approval for any proposed expansion or relocation of SWM Basin A and B as part of the landfill expansion.	A Stormwater Management Report will be submitted to the UTRCA for review at the detailed design stage of the project. Vol. 1 Section 8.2.6 'Stormwater Management' and Appendix D 'Supplementary Information in Support of Alternative 3A' includes more detailed information about the stormwater management plan for Alternative 3A  The following commitment has been added to Table 11.1, 'Summary of EA Commitments'.  Develop a Stormwater Management Plan and submit to MECP and UTRCA for approval prior to construction. Plan will provide additional detail including velocities at the basin outlets for various storm events, cross sections of the stormwater facilities showing flood water surface elevations for the 100- and 250-year storm event as well as pond inlet and outlet details.	
5.	The proposed stormwater management system for any relocation of SWM Basin A and B shall convey the runoff under the 250-year storm without flooding. Please provide cross sections of the proposed SWM systems showing flood water surface elevations for the 100 and 250-year storm events.	Vol. 1 Section 8.2.6 'Stormwater Management' and Appendix D 'Supplementary Information in Support of Alternative 3A' includes information demonstrating the 250-year storm capacity compliance. Cross-sections for the SWM systems showing flood water surface elevations for 100 and 250-year storm event will be included in the Stormwater Management Plan as discussed above.	
6.	The implications of any proposed SWM pond and its outlet construction should be discussed in detail to make sure that the proposed SWM pond and its outlet will not cause flooding and erosion downstream. Also, please report velocities at the outlet of the pond for various storm events.	Preliminary design of the ponds includes outlet structures and permanent pool plus extended detention, both exceeding standard design guidelines and relevant information can be found in Section 8.2.6 'Stormwater Management'. Additionally, pond outlets will have erosion protection. Velocities at the outlet of the pond for various storm events will be provided in the Stormwater Management Report (to be provided during detailed design, per Comment 4).	
7.	The inside slopes for the proposed SWM facility should be according to the MECP guidelines. The outside slope should not be steeper than 5:1. Please submit cross sections during detailed design of the pond showing inlet and outlet details including slopes, inlet and outlet structure design details such as: pipe sizes, orifice sizes, weir length, invert elevations, berms, etc.	Section 8.2.6 includes information about the design of the ponds including slopes. The requested cross sections will be developed as part of detailed design, in accordance with EPA-O.Reg. 232 and included with the Stormwater Management Plan discussed above to be circulated for review by MECP and UTRCA during detailed design.	
8.	At the detailed design stage, please provide a detailed Sediment and Erosion Control (SEC) drawing signed, sealed and dated by a professional engineer showing the SEC measures on the site, including temporary and permanent control SEC measures and notes for any proposed expansion or relocation of SWM Basin A and B.	A signed, sealed, Sediment and Erosion Control drawing will be submitted to UTRCA for review at the detailed design stage of the project. This commitment is listed in Vol. I, Table 11.1. 'Summary of EA Commitments':  An Erosion and Sediment Control (ESC) Plan will be developed and submitted to UTRCA for review at the detail design stage.	



**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
9.	The EA suggests a shallow ground water seam in an overburden layer in proximity to SWM Basins A and B. Based on UTRCA mapping contours, surface water elevations of SWM A and B appear to be in close proximity to ground water elevations in the overburden layer. Further detail will be required for proposed mitigations to ensure there will be no interaction between any of the proposed SWM facilities and the groundwater table during Phase II/III expansion phase.	Further mitigation measures to ensure there is no interaction between the proposed SWM facilities are discussed in Section 9.0 'Potential Impacts, Mitigation Measures, and Net Effects'.	
10.	If the ground water seam is proposed to be excavated and replaced with impermeable soil, prior to expansion as mentioned as a mitigation measure in the EA during the phase II/III footprint, further monitoring may be required to ensure there is no groundwater interactions between SWM basins A and B and the filled groundwater seam. Furthermore, proposed relocation or expansion of SWM A <u>and B should be monitored as to not extend below overburden ground water levels.</u>	As discussed in Vol. I, Section 8.0, 'Description of the Undertaking', SWM basins A and B will be removed to accommodate the waste footprint of Alternative 3A. New ponds, as described in Section 8.2.6 'Stormwater Management' (described as West and East Ponds) will be constructed. Partial or full excavation (removal) of the existing sand-silt seam is anticipated when preparing the base of the expansion. Any exposed sand-silt seam will be overlain by the landfill liner and leachate collection system. Further, monitoring of the sand-silt seam will continue using either existing monitoring wells or new wells as detailed in Sections 11.1 'Future Commitments', 11.2.2 'Environmental Effects Monitoring', and 11.3 'Adaptive Management Plan'.	
11.	A hydrogeological study should address SWM basin-groundwater interactions during the EA process.	An updated hydrogeological study will be completed as part of the detailed design effort. Per item 10, SWM basins A and B will be removed by the Alternative 3A design. The updated hydrogeological study will assess the interaction of the expanded waste footprint, with its liner and leachate collection system, and the sand-silt seam. We anticipate the detailed design will prevent such interactions, monitoring will be in place to detect any interaction, and contingency measures will be available should interactions occur.	
12.	The proposed relocation of the unnamed tributary to the North Thames River should be addressed at the EA/Permitting stages. More specifically, at the detailed design stage, a Conservation Authorities Act Section 28 Permit will be required.	The design of the realigned watercourse is presented in Section 8.2.5 and will be refined during the detailed design phase and submitted to the UTRCA as part of the Town's commitment to obtain a Conservation Authorities Act Section 28 Permit, as included in Vol. I, Table 11.1 'Summary of EA Commitments' (see response to Comment #3).	
13.	Further discussion/information would be required to determine the conditions of permit, starting with a channel design brief. This should detail how the watercourse would be realigned without loss of flood storage as well as propose appropriate geomorphology in the design.	Section 8.2.5 'Watercourse Realignment' includes information about the design of the realigned watercourse.	
14.	Sediment and Erosion Control (ESC)/Dewatering Plans will be required and reviewed by UTRCA staff for the proposed watercourse relocation. Staff has concerns and would like to be involved in the review of SEC plans for proposed relocation of the watercourse most specifically to works in proximity to the CKD stockpile.	An Erosion and Sediment Control (ESC) Plan / Dewatering Plan will be submitted to the UTRCA for review at the detailed design stage of the project (prior to watercourse realignment construction). The following commitment is included in Vol. I, Table 11.1 'Summary of EA Commitments':  An Erosion and Sediment Control (ESC) Plan / Dewatering Plan will be developed during the detailed design of the proposed watercourse realignment and submitted to UTRCA and MECF for review.	
15.	Geotechnical input may be required for the CKD stockpile prior to disturbance of slope as part of proposed watercourse relocation.	Vol. I, Section 7.0 'Phase 5: Assess Alternative Methods for Carrying Out the Undertaking' has been extensively revised based on Government Review Team comments raised about the relocation of the watercourse. A new Alternative 3A has	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
		been added and assessed which requires realignment of a ~230 metre section of the watercourse and avoids changes to the CKD pile.	
16.	There should be extended monitoring of the newly designed watercourse (flowing into Thames River) to ensure no interaction of groundwater in proximity to the CKD stockpile with surface water of the newly realigned watercourse.	Additional monitoring of water quality in the watercourse has been added (see Vol. I, Section 11.2 'Monitoring Program' and Appendix D 'Supplementary Information in Support of Alternative 3A') to ensure no interaction between groundwater and the realigned watercourse. This monitoring will be used in an Adaptive Management framework (see Section 11.2 'Adaptive Environmental Management') to identify if changes are required to mitigate any unforeseen effects.	
17.	The proposed watercourse realignment should be undertaken using the principals of Natural Channel Design.	As discussed in Item 1, the Town intends enhancement of natural channel features within the existing riparian channel along entire on-site watercourse. These will be implemented where opportunities exist. We anticipate pool and riffle sequences, native plantings, etc. Details will be developed as part of the Conservation Authorities Act, Section 28 Permit application.	
18.	Any realignment which pushes the watercourse floodplain or Conservation Area Regulated land onto property owned by others would require written permission from the other landowner prior to issuing permits.	Further to Item 1, Alternative 3A will maintain the Conservation Area regulated land on the Town's property. We do not anticipate a need for permission from other land owners but will work with them and UTRCA as may be required.	
19.	<p>While the UTRCA defers to the MECP/MNRF for their responsibilities under the Endangered Species Act, we have provided comments as part of our advisory role related to all natural heritage matters.</p> <p>In table 9-1 there is no mention of the potential destruction of turtle nesting habitat. Please include a discussion on this environmental impact and possible mitigation and monitoring activities.</p>	Vol. I, Table 9.1 'Effects, Mitigation, and Net Effects' has been updated to reflect the potential destruction of turtle nesting habitat and possible mitigation and monitoring opportunities.	
20.	In table 10-3, it was explained that basking surveys were not the best method to sample for snapping turtles, and wading surveys (most productive method) was deemed unsafe and not completed. As basking surveys were the next best and safest alternative, please ensure they are considered.	<p>Basking turtle surveys have been completed, as summarized in Vol. I Section 6.6 'Description of the Existing Environment', Table 6.5 'Methodology of Natural Heritage Field Investigations'. We note that Vol. I, Section 10.0 'Consultation Summary', Table 10.3 'Agency Review and Comment on Work Plans', is a summary of agency review and work plans. At the time, the UTRCA's input on the work plan was that "Basking surveys are not the best method to sample for snapping turtles. Wading through ponds is more productive". Burnside's response was "Wading surveys through landfill SWM ponds were not conducted for health and safety reasons". Our response was not intended to indicate turtle basking surveys would not be completed.</p> <p>The Natural Heritage Assessment (Vol. 3, Appendix D) describes the methodology and findings of these surveys (Section 4.1.3.2 'Reptile Surveys' and 4.2.3.2 'Reptiles'). Per the Natural Heritage Assessment, "basking surveys were conducted at potential sites on warm, sunny days when the landfill was closed, thereby reducing noise disturbances. Wetland features were approached carefully and quietly, and the perimeter was surveyed with high-powered binoculars. One Midland Painted Turtle was observed in the existing watercourse on May 27, 2015. A second individual was observed on July 3, 2015, in the stormwater management basin located in the central portion of the landfill."</p>	

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Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
21.	<p>In Table 10-3, it is noted that the Eastern Milksnake is no longer a SAR under COSSARO. It is to be noted that it remains on COSEWIC as a species of concern. While the UTRCA defers to the MECP/MNRF for their responsibilities under the Endangered Species Act, we would recommend opportunities for habitat enhancement and increased net environmental benefit for any terrestrial or aquatic habitat removed as part of the landfill expansion works.</p>	<p>Vol. I, Table 9.1 'Impacts, Mitigation, and Net Effects', outlines specifics pertaining to Snake Hibernaculum; and Special Concern and Rare Wildlife Species: Eastern Milksnake (Confirmed Refuge Habitat). The associated mitigation has been updated to indicate that the Town will, during detailed design, investigate opportunities for habitat enhancement and increased net environmental benefit for any habitat removed.</p> <p>The following commitment has been added to Vol. I, Table 11.1 'Summary of EA Commitments':</p> <p style="padding-left: 40px;">Opportunities for habitat enhancement and increased net environmental benefit for any terrestrial or aquatic habitat removed as part of the landfill expansion works will be further assessed and incorporated during the detailed design phase. These measures will be developed in consultation with the UTRCA.</p>	
22.	<p>Include discussion about the likelihood of creating / enhancing areas of potential Significant Wildlife Habitat for the species listed in table 6-13 as potential mitigation measures.</p>	<p>Further to item 21, Vol. III, Appendix D, 'Natural Heritage Assessment', Section 5.5 'Significant Wildlife Habitat', considered the potential impacts of the landfill expansion on Significant Wildlife Habitat and concluded that the habitat would not be affected. Appendix H of the Natural Heritage Assessment discusses Potential Environmental Impacts, Mitigation Measures and Recommended Monitoring Activities for the Design of Alternative Methods within the On-site Study Area for both the Construction and Operational Phase. This includes measures to mitigate impacts to Significant Wildlife Habitat. Additionally, Natural Heritage Assessment Report, Section 7.2, 'Evaluation of Relative Impacts on Terrestrial Wildlife Habitat including Species at Risk and Significant Wildlife Habitat' and Section 8.0, 'Potential Impacts and Mitigation' further discuss the possible measures to minimize impacts.</p>	
23.	<p>Please specify why benthic biomonitoring was not included. Discussion as provided in Section 3.7.1 in the EA was not sufficient. Water quality monitoring includes both chemistry and benthic sampling to ensure the watercourses / drains do not become further impaired once the appropriate alternative has been selected. Monitoring should occur before the alternative is selected, and throughout the life of the landfill expansion.</p>	<p>As discussed in a letter to the UTRCA dated September 7, 2016, Burnside has discussed with the UTRCA previously that:</p> <p>"Benthic sampling was not an identified requirement of the Terms of Reference and was not planned as part of this EA Report. However, based on site observations (watercourse function, fish presence, substrate type) and the preferred Alternative Method 3 (substantial watercourse realignment), the potential information that would be collected through benthic sampling would be of low value for the EA Report".</p> <p>Additionally, as noted in a response to the MECP's Surface Water Specialist (April 9, 2019):</p> <p>"Benthic monitoring had historically been undertaken in the existing watercourse but was discontinued as it found that the landfill had no impact on the benthic communities..."</p>	
24.	<p>Given the fact that the site is adjacent to softshell habitat, we do not recommend alteration of the watercourse or the shoreline, unless proper monitoring or mitigation is provided to ensure no detrimental impacts to these protected SAR species.</p>	<p>As described in the Natural Heritage Assessment (Vol. III, Appendix D), Spiny Softshell habitat is not considered present within the On-site Study Area. Turtle basking and nesting surveys were completed as part of the Natural Heritage Assessment and Spiny Softshell was not observed. As per Section 4.1.3.2 'Reptile Surveys': "There is one watercourse present within the On-site Study Area. This feature is characterized on</p>	

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Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
		<p>Figure 4 'Ecological Land Classification On-site Study Area' of the Natural Heritage Assessment as a graminoid mineral shallow marsh/willow mineral deciduous thicket swamp community complex. As described in Natural Heritage Assessment Section 4.2.1 'Vegetation Communities', this mixed wetland extends from the northwest corner of the site to the central east property limit, at the base of the slopes. A perched culvert is located at Water Street where the watercourse drains into the Thames River, thereby creating a significant barrier to turtles entering the watercourse from the river system."</p> <p>Further, per Natural Heritage Assessment, Section 4.2.3.2 'Reptiles':</p> <p>"Turtle habitat for species that are highly aquatic and that inhabit mainly larger waterbodies such as the Thames River is present within the Study Area Vicinity and the Thames River generally (e.g., Spiny Softshell and Northern Map Turtle). Given the large, perched culvert located at the downstream end of the landfill watercourse at Water Street South (i.e., draining into the Thames River), this culvert is considered a significant barrier for these two highly aquatic turtle species to access the watercourse present within the On-site Study Area."</p>	
25.	<p>Please note that the MECP is the official hydrogeological review agency. We are simply providing comments on this section given that our office is the lead Source Protection Authority under the Ontario Clean Water Act for matters pertaining to drinking water source protection in the Thames-Sydenham and Region.</p> <p>Although the landfill is not located in the Wellhead Protection Areas (WHPA), further Drinking Water Source Protection considerations were looked at during the EA. UTRCA has no objection, as the Landfill expansion appears to be outside of a Significant Threat Policy Area. Any moderate or low threats to drinking water should be managed through provincially approved prescribed instruments.</p>	<p>Understood. Should there be any low or moderate drinking water threats, they will be managed through provincially approved, prescribed instruments.</p>	
26.	<p>Our office would like to be included in future circulations regarding this project (please address all future project correspondence to the undersigned). We would appreciate receiving information and reports as they become available in order to ensure that we can meet the project deadlines with our comments.</p>	<p>The UTRCA will be consulted during the detailed design period as detailed in Vol. I., Table 11.1 'Summary of EA Commitments'.</p>	
<p>Submitter: <b>Impact Assessment Agency of Canada</b> August 26, 2021</p>			
1.	<p>Thank you for your correspondence, dated August 11, 2021, regarding the Project (the Project) proposed by The Town of St. Marys (the proponent). Based on the information you provided to the Agency on August 11, 2021, it is the Agency's view that the Project is not a designated project. As a result, the proponent is not required to submit an Initial Project Description. Should details or design aspects of the Project change such that the Project may include physical activities that are described in the Regulations, contact the Agency to discuss these changes and the implications on the applicability of the IAA.</p>	<p>We note that the Impact Assessment Agency of Canada (IAAC) has determined that the St. Marys Future Solid Waste Disposal Needs EA is not a designated project.</p> <p>IAAC will be consulted on the project, should details or design aspects of the Project change such that the Project may include physical activities that are described in The Physical Activities Regulations under the Impact Assessment Act. A commitment has been added to Vol. 1 Section 11.1 'Future Commitments':</p> <p>Contact the Impact Assessment Agency of Canada to confirm if an IAAC review is required, should details or design aspects of the Project change such that the Project may include physical activities that are described in The Physical Activities Regulations under the Impact Assessment Act."</p>	

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Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
Submitter: <b>Fisheries and Oceans Canada</b> October 4, 2021			
1.	<p>The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on August 20, 2021. We understand that you propose to:</p> <ul style="list-style-type: none"> <li>• Realign and construct a new open drain system 750m in length as part of a proposed landfill improvement project; and</li> <li>• The channel will tie into the existing Unrated Municipal Drain and outlet into an existing culvert crossing under Water Street; and</li> <li>• The new channel will be constructed in the dry, then existing flows will be redirected to the new channel, then the existing channel will be decommissioned; and</li> <li>• Work in isolation of flow to avoid sedimentation of the watercourse.</li> </ul> <p>Our review considered the following information:</p> <ul style="list-style-type: none"> <li>• Request for Review form and associated documents.</li> </ul> <p>Your proposal has been reviewed to determine whether it is likely to result in:</p> <ul style="list-style-type: none"> <li>• the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the Fisheries Act;</li> <li>• effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the Species at Risk Act; and</li> <li>• The aforementioned impacts are prohibited unless authorized under their respective legislation and regulations.</li> </ul> <p>To avoid and mitigate the potential for prohibited effects to fish and fish habitat (as listed above), we recommend implementing the measures listed below:</p> <ul style="list-style-type: none"> <li>• Plan in-water works, undertakings and activities to respect timing windows to protect fish, including their eggs, juveniles, spawning adults</li> <li>• Capture, relocate and monitor for fish trapped within isolated, enclosed, or dewatered areas;                         <ul style="list-style-type: none"> <li>○ Dewater gradually to reduce the potential for stranding fish</li> </ul> </li> <li>• Conduct in-water undertakings and activities during periods of low water levels</li> <li>• Screen intake pipes to prevent entrainment or impingement of fish;                         <ul style="list-style-type: none"> <li>○ Use the code of practice for water intake screens</li> </ul> </li> <li>• Limit impacts on riparian vegetation to those approved for the work, undertaking or activity;                         <ul style="list-style-type: none"> <li>○ Limit access to banks or areas adjacent to waterbodies</li> <li>○ Construct access points and approaches perpendicular to the watercourse or waterbody</li> <li>○ Re-vegetate the disturbed area with native species suitable for the site</li> </ul> </li> <li>• Restore stream geomorphology (i.e., restore the bed and banks, gradient and contour of the waterbody) to its initial state;</li> <li>• Avoid introducing sediments (e.g., silts, clays and sand) in the water</li> <li>• Develop and implement an erosion and sediment control plan to avoid or minimize the introduction of sediment into any waterbody during all phases of the work, undertaking or activity; and                         <ul style="list-style-type: none"> <li>○ Conduct all in-water works, undertakings or activities in isolation of open or flowing water to reduce the</li> </ul> </li> </ul>	<p>Government Review Team (GRT) comments on the Final EA raised several concerns regarding preferred Alternative 3 particularly the proximity to, and the potential impacts of the Cement Kiln Dust (CKD) Pile on the relocated watercourse. To address these concerns, the Town re-engaged with St. Marys Cement (SMC) to discuss the watercourse relocation and how far onto SMC lands it might extend. SMC undertook further review and indicated that encroachment onto their lands would not be possible without affecting their Aggregate Resources Act license. Reflecting on both the comments on the Final EA and the limitations with respect to SMC lands, the study team revisited the preferred Alternative 3. The team was challenged to determine if refinements to the preferred alternative could minimize the need to relocate the watercourse while maintaining the target capacity of the preferred alternative and its attributes. To this end, the team identified a refinement to the preferred alternative, Alternative 3A.</p> <p>Section 7 'Phase 5: Assess Alternative Methods for Carrying out the Undertaking' of Volume I, including all evaluation tables, have been revised to reflect the addition of Alternative 3A. Sections 8 'Description of the Undertaking' and 9 'Potential Impacts, Mitigation Measures, and Net Effects' have been revised to reflect Alternative 3A as the new preferred alternative.</p> <p>Instead of the watercourse being relocated to north of the CKD pile, the new Alternative 3A retains the watercourse in its existing location, except for a ~230 metre reach within the middle of the site which will be realigned to the northeast to facilitate landfill expansion. This realigned stretch is conceptually designed to have a:</p> <ul style="list-style-type: none"> <li>• 3:1 embankment;</li> <li>• 2.5m to 3.0m wide riparian channel;</li> <li>• ±15m wide watercourse bottom;</li> <li>• 50m to 60m wide corridor;</li> <li>• ±20m buffer to CKD pile; and</li> <li>• CKD pile interception swale.</li> </ul> <p>Enhancing the natural features of the watercourse's riparian channel, to improve aquatic habitat will be considered during detailed design.</p> <p>Per the commitments in EA Vol. I, Table 11.1 'Summary of EA Commitments', the Town is committed to:</p> <ul style="list-style-type: none"> <li>• Working with the Department of Fisheries and Oceans Canada (DFO) through the permitting process, to obtain all applicable permits for construction.</li> <li>• Developing a Watercourse Realignment Plan for approval by DFO and UTRCA which will reflect the use of natural channel design principles and incorporate mitigation measures already identified by DFO.</li> </ul>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	<p>introduction of sediment into the watercourse</p> <ul style="list-style-type: none"> <li>○ Monitor the watercourse to observe signs of sedimentation during all phases of the work, undertaking or activity and take corrective action</li> <li>● Develop and implement a response plan to avoid a spill of deleterious substances.</li> </ul> <p>Provided that you incorporate these measures into your plans, the Program is of the view that your proposal will not require an authorization under the Fisheries Act, or the Species at Risk Act.</p>	<p>Also, per the response to Comment #6 (detailed below), the received DFO letter (including mitigation measures) will be kept on Site during construction to ensure these measures are considered.</p>	
2.	<p>Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<a href="http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html">http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html</a>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the Fisheries Act, or the Species at Risk Act.</p>	<p><i>The Town will consult with DFO during detailed design.</i> Per the commitments in EA Vol. I, Table 11.1 'Summary of EA Commitments', the Town is committed to:</p> <ul style="list-style-type: none"> <li>● Working with the Department of Fisheries and Oceans Canada (DFO) through the permitting process, to obtain all applicable permits for construction.</li> </ul>	
3.	<p>Provided that you incorporate these measures into your plans, the Program is of the view that your proposal will not require an authorization under the Fisheries Act, or the Species at Risk Act.</p>	<p>Comment noted.</p>	
4.	<p>It is also your Duty to Notify DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<a href="http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html">http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html</a>).</p>	<p>Comment noted.</p>	
5.	<p>We recommend that you notify this office at least 10 days before starting your project.</p>	<p><i>The Town has added the following commitment to Vol. I Section 11 'Future Commitments and Environmental Compliance', Table 11.1 'Summary of EA Commitments' to ensure and record compliance:</i></p> <p>'Notifying the DFO greater than 10 days prior to the commencement of the landfill expansion construction.'</p>	
6.	<p>We recommend that a copy of this letter be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.</p>	<p><i>The Town commits to adding the following commitment to Vol. I, Section 11 'Future Commitments and Environmental Compliance', Table 11.1 'Summary of EA Commitments':</i></p> <p>A copy of DFO's provided letter of advice from the DFO, dated October 4, 2021, will be kept on Site during the construction period.</p>	
<p>Submitter: <b>CN Rail</b> August 20, 2021 (via phone)</p>			
1.	<p>During a follow-up call regarding the 'Notice of Submission' with CN Rail, it was noted that:</p> <p>"Our only concern would be that it impacts the nearby CN Rail operations or infrastructure."</p> <p><b>Additional Comments (October 2022)</b></p> <p>CN EA review team has recommended following the regulations as set out in Mining Near Lines of Railways Regulations (<a href="http://justice.gc.ca">justice.gc.ca</a>). This would ensure a 50 metre setback from the nearest rail, along with safe operations of the railway.</p>	<p>Based on our current technical studies and project work, the proposed expansion of the landfill will not impact CN Rail operations or infrastructure in any way – there are no rail lines within or to be crossed for access to the St. Marys Landfill. The entire property of the landfill is displayed on Vol. I, Figure 3-2, which shows that no rail lines are within the site perimeter or need to be crossed for site access.</p> <p><b>Response to October 2022 Comments:</b></p> <p>As illustrated on Figure 3-2, there are no rail lines in proximity to the St. Marys Landfill expansion. The closest rail line is approximately 900 m to the east.</p>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	Other than a potential to line-of-sight being obscured if the wind is blowing dust from the landfill in the direction of the track, the proposal at the moment would not have an adverse effect on the CN right of way. Although, the Quarry Licence boundary does go up to the CN right of way, the proponent should be made aware of the regulations within the Mining Near Lines of Railways if there is future expansion of the landfill.	The Town of St Marys is aware of the regulations within the Mining Near Lines of Railways Regulations (justice.gc.ca). Given the distance between landfill operations and the rail line (approximately 900 m) blowing dust is not anticipated to be an issue.	
Submitter: <b>Huron Perth Catholic District School Board</b> September 28, 2021			
A.	Thank you for considering our interest in this project. There are no concerns or impacts the Huron-Perth Catholic District School Board is aware of.	Thank you for your response, we confirm receipt of your comments.	
Submitter: <b>Huron Perth Public Health</b> October 1, 2021			
A.	<p>The role of public health within the review of this environmental assessment is to ensure risks to public health are considered and, where identified, mitigated to reduce impacts to overall community health. At this time, we do not feel significant risks to public health are associated with your preferred method of "Alternative 3 – A combination of Vertical and Horizontal Expansion" for the existing landfill site.</p> <p>Public Health has reviewed the environmental health assessment, and considered the potential impacts to public health, through the lens of the following themes:</p> <ul style="list-style-type: none"> <li>• Potential impacts to the use and sustainability of the built, natural and socio-economic environments</li> <li>• Potential impacts to air quality</li> <li>• Potential impacts to soil and water quality (source water protection)</li> <li>• Land use, aesthetics and enjoyment of life, employment/economic effects</li> <li>• Potential future contributors to climate change</li> </ul> <p>It will be critical throughout the continued process of adopting "alternative 3" as the preferred option related to the landfill expansion, that the Town continues to ensure prompt and comprehensive follow up with respect to complaints and concerns received. We note this, as proposed alternatives (e.g. those with higher elevations) and mitigation measures such as berms and trees may not be sufficient to mitigate all impacts related to dust, noise and odour. We know public tolerance to be low with regard to these parameters as well as perceived impacts to water quality. Public acceptance centers around the principles associated with the "NIMBY phenomenon" as well as a dedication to the protection and sustainability of natural environments.</p>	<p>To ensure that HPPH's comment is addressed during the operation of the expanded landfill, in Vol. 1, Section 11.5, '<i>Compliance Monitoring</i>', which provides a compliance monitoring framework to ensure all existing commitments and conditions are met during the remaining stages of the Project, the Town has committed to:</p> <p style="padding-left: 40px;">"Review, update (if required) and enact the site's complaint-response framework and procedures and communication plan."</p> <p>In addition,</p> <ul style="list-style-type: none"> <li>• "The complaint-response framework will be submitted to MECP as part of the ECA approvals process.</li> </ul> <p>Ongoing complaints and Town responses will be documented in the landfill's Annual Monitoring Reports."</p>	
Submitter: <b>Secondary Land Use, Asset Optimization, Strategy &amp; Integrated Planning, Hydro One Networks Inc.</b> September 21, 2021			
1.	Thank you for sending us notification regarding (Future Solid Waste Disposal Needs). In our preliminary assessment, we have confirmed that Hydro One has existing high voltage Transmission facilities within your study area. At this time, we do not have sufficient information to comment on the potential resulting impacts that your project may have on our infrastructure. As such, we must stay informed as more information becomes available so that we can advise if any of the alternative solutions present actual conflicts with our assets, and if so; what resulting measures and costs could be incurred by the proponent. Note that this response does not constitute	<p>Hydro One has existing high voltage transmission facilities and associated transmission corridor(s) in the Study Area.</p> <p>The high voltage transmission facilities feeding the St. Marys Cement plant are within the <i>Study Area Vicinity (a 1,000 m radius of the On-Site Study Area)</i>. There is also the main 115 kV Hydro One corridor located approximately 1,700 m east of the <i>On-Site Study Area (site)</i>. These are shown on Figure 1-2, 'Town Limits and St. Marys Landfill', and Figure 6-6, 'Study Areas' within the EA Report (Vol. I). We confirm that Hydro One</p>	

**Table 2: Final Environmental Assessment (August 2021) – Government Review Team Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	approval for your plans and is being sent to you as a courtesy to inform you that we must continue to be consulted on your project.	<p>infrastructure and associated right-of-way will be avoided with the EA's Preferred Expansion Method.</p> <p>To address Hydro One's request to continue to be consulted on the project, the following commitment has been added to Vol. 1 Table 11.1 'Summary of EA Commitments':</p> <p>Acquire all necessary permits and/or approvals pursuant to the:</p> <ul style="list-style-type: none"> <li>• Environmental Protection Act</li> <li>• Ontario Water Resources Act</li> <li>• Conservation Authorities Act</li> <li>• Endangered Species Act</li> <li>• Fisheries Act</li> <li>• Fish and Wildlife Conservation Act</li> </ul> <p>Others, as identified during the design phase</p>	
<p>Submitter: <b>The Town of St. Marys Fire Department</b> August 23, 2021 (via email)</p>			
1.	<p>From the fire departments perspective there is nothing that really pertains to us. Other than the fact we are and will be able to maneuver our fire apparatus in and around the area.</p> <p>Thanks</p>	<p>We understand the Fire Department's concern regarding the fire apparatus having full access to the landfill site. Following Environmental Assessment approval, the Town will initiate a detailed design process. At this stage, the design will consider the Town's development guidelines, including fire route requirements in accordance with applicable municipal by-law(s).</p> <p>To ensure that the Fire Department is consulted further during the project's detailed design and construction, the Town has added the following commitment to Vol. I, Section 11.1 'Future Commitments', Table 11.1 "Summary of EA Commitments":</p> <p>Consult with the St. Marys Fire Department during the detailed design and construction process.</p>	



**Table 3: Final Environmental Assessment (August 2021) – Public Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
Submitter: <b>Mr. Bruce Grant</b> Sep. 17, 2021 (email)			
	<p>I am a long-time resident of St. Marys with an interest in environmental matters. I support the ongoing use and expansion of the current Town of St. Marys landfill site.</p> <p>Society will continue to need solid waste disposal sites for a very long time. I have seen multiple waste diversion initiatives with significant success over the past 40 years. Achieving zero solid waste may be a noble thought, however in practical terms it is unattainable in the foreseeable future.</p> <p>The current site is situated in an industrial area that was previously used as a clay source for cement production. Clay has been excavated to a depth of approximately 6 metres leaving an industrial scar with no original natural or archaeological surface features. The site has berming and significant tree screening that continues to mature and can easily be augmented to provide a pleasant, natural perimeter to fully screen site activities from passers-by.</p> <p>The Town of St. Marys landfill site is an engineered facility that operates at the convenience of the local municipality. Transportation impacts are minimized by keeping waste disposal local. Leachate is collected and flows by gravity to the St. Marys wastewater treatment facility. Monitoring, sampling, testing and resultant annual landfill activity reports have consistently demonstrated minimal off-site landfill related impacts.</p> <p>Since inception of the landfill site, all proponents of new houses in the immediate vicinity have, prior to construction, signed documentation acknowledging the presence of the site. Adjacent residential neighbours are comfortable with their proximity to the site.</p> <p>Construction, operation and expansion of a fully engineered solid waste disposal facility makes abundant good sense by concentrating landfilling activities in fewer locations rather than scattering disposal into other locales. Establishing, monitoring, reporting and continually improving controls to mitigate off-site impacts is a practical approach to a solid waste disposal problem.</p> <p>Thank you for the opportunity to comment on this important matter. I look forward to positive support from the Ministry on the expansion initiative.</p>	<p>The Town acknowledges and appreciates the support.</p>	

**Table 4: Final Environmental Assessment (August 2021) – Indigenous Communities Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
Submitter: <b>Chippewas of the Thames First Nation</b> Sep. 8, 2021 email and letter			
1.	The report has been reviewed and there are minimal concerns with it and the project. The Chippewas of the Thames First Nation request to be informed of any substantive future project details.	As requested, the EA Team will keep Chippewas of the Thames First Nation (COTTFN) informed of any substantive future project details such as the Environmental Compliance Approvals. The Town has (and remains) committed to further consultation with COTTFN and other Indigenous communities as the detailed design and construction of the St. Marys Landfill Expansion proceeds.  The Town will add the following commitment to Vol. I, Table 11.1 'Summary of EA Commitments':  Consult with WIFN, COTTFN, Six Nations and HDI to review the detailed design and build the Town's long-term relationship with each community to identify any opportunities, mutually beneficial benefits and accommodations.	
Submitter: <b>Haudenosaunee Confederacy Chiefs Council – Haudenosaunee Development Institute (HDI)</b> Sep. 7, 2021 Letter, Sept 27, 2021 Teams meeting, and Sep. 30, 2021 follow-up email			
1.	<p><b>September 7, 2021 Letter:</b></p> <p>I the undersigned, confirm on behalf of HDI Environmental Division show interest in the abovementioned project. The HDI Environmental Division requests to be involved and informed about:</p> <ul style="list-style-type: none"> <li>• The progress of this project,</li> <li>• Natural impact studies e.g., aquatic, terrestrial and botanical surveys</li> <li>• Species at risk (SARS)</li> <li>• Archaeological Reports</li> <li>• Archaeological Field Assessments (Stage 2, 3 &amp; 4)</li> <li>• Applicable permits</li> <li>• Environmental management plan (EMP)</li> <li>• Stormwater management plan (SWMP)</li> <li>• Erosion and sediment control plan (ESCP)Site inspections to ensure these measures are being followed through.</li> </ul> <p>As part of our rights as Haudenosaunee and people of the land, we encourage to have a representee from HDI Environmental Division or Archaeology Division to be involved. We have the ongoing obligations to ensure the protection of our cultural and natural resources for the next seven generations. This is our duty and responsibility of our rights as Haudenosaunee People.</p> <p>The HDI Environmental Division has worked on numerous projects in the past and have overseen a variety of development within our treaty rights. As part of HDI Environmental Division we provide monitors for any field work and site inspections. Being able to witness and report field active conditions and contingency plans is a key part of HDI quality assurance (QA).</p>	<p>The Town of St. Marys would be pleased to have HDI involved with the landfill's post-EA development, approvals, operations and monitoring programs. Although EA studies have been completed, the Town is committed to keeping HDI (alongside other Indigenous Communities) informed of detailed design and construction efforts. This may allow for field monitoring opportunities, particularly during construction.</p> <p><i>To address HDI's request to continue to be consulted and involved in field monitoring opportunities as the project progresses, the Town has committed to on-going engagement to identify when these opportunities arise. The following commitment can be found in Table 11.1 "Summary of EA Commitments":</i></p> <p>Consult with WIFN, COTTFN, Six Nations and HDI to review the detailed design and build the Town's long-term relationship with each community to identify any opportunities, mutually beneficial benefits and accommodations.</p>	

**Table 4: Final Environmental Assessment (August 2021) – Indigenous Communities Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
	<p>The monitoring provides a way ensuring all guidelines are met throughout the whole process of the project and strengthens the areas most sensitive to the Haudenosaunee people.</p> <p>HDI ask RJ Burnside and Town of St. Marys to have a meeting to further discuss involving HDI Environmental Division on the project and once week inspection. We hope we can navigate through these issues towards a relationship of respect, partnership, and mutual benefit.</p>		
2.	<p><b>September 30, 2021 Email:</b></p> <p>As mentioned during the meeting on Monday September 27<sup>th</sup>, 2021, HDI Environmental Division requests to be involved during the detailed design and construction phase. We strongly feel this is important to be involved in especially if alternative (method) 3 is being used. Rerouting the watercourse is something we feel strongly about having an environmental monitor in the field to ensure all applicable permits and Environmental Management plans are being followed through.</p>	<p>Vol. 1 Section 7 'Phase 5: Assess Alternative Methods for Carrying Out the Undertaking' has been amended to include a new Alternative Method 3A as issues with the feasibility of Alternative 3 arose during the final stages of the approval process. Alternative 3A has been identified as the preferred alternative and rather than a relocation of the watercourse there is only a small realignment of the watercourse. It is expected that construction of the watercourse realignment will proceed in parallel with the construction of the expansion footprint. Per Commitment A. (above), the Town of St. Marys is committed to identify opportunities where an HDI environmental monitor may be present during construction.</p>	
<p>Submitter: <b>Six Nations of the Grand River</b> August 23, 2021 phone call and follow-on email dated Sep. 24, 2021.</p>			
1.	<p>Will the landfill be lined?</p>	<p>Consistent with the Town's existing landfill design, we are using the site's native clay to act as a liner. Above this there will be a leachate collection system. The Town's current monitoring program has shown this design to be effective. Section 8.0 entitled 'Description of the Undertaking', describes the preferred Alternative Method for expanding the landfill in more detail. Further design details will be developed and refined as part of the next step, under the Environmental Protection Act.</p>	
2.	<p>How is landfill gas addressed?</p>	<p>The expanded site will be smaller than 1.5 million cubic metres which is the trigger volume under the Environmental Protection Act (O.Reg. 347) to study if landfill gas collection and destruction is, or is not, required. The site receives waste slowly, which affects landfill gas generation rates (i.e., also slow) and the potential effectiveness of a landfill gas collection system. As a result, there are no plans to install a landfill gas collection and destruction system for the St. Marys Landfill (reference, Vol. I, Section 7.4.1 'Air Quality').</p>	
3.	<p>Will there be tree removal, and what are we proposing to avoid and replace habitat? Simply committing to tree removal outside of the bird breeding season is not sufficient - the birds will return and need habitat.</p>	<p>The landfill is sited within the former "clay-quarry". Quarrying disturbed most of the site (resulted in removal of habitat) before the landfilling began.</p> <p>Table 9.1 entitled "Effects, Mitigation, and Net Effects", summarizes the 'Impact to Other Wildlife' indicator which addresses vegetation loss. Mitigation measures specific to tree removal and the replacement of vegetation are:</p> <ul style="list-style-type: none"> <li>• Complete a Tree Inventory and Landscape Plan for the landfill property.</li> <li>• Tree replacement will be at a 10:1 ratio. For clarity, this means that ten tree seedlings will be planted for each tree that is removed. Replacement seedlings will be located on the landfill property or another Town property, if space does not permit.</li> </ul>	

**Table 4: Final Environmental Assessment (August 2021) – Indigenous Communities Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
		<ul style="list-style-type: none"> <li>• Install woody plants adjacent to the realigned watercourse to enhance watercourse shading, fish, and wildlife habitat, as well as improve tree cover within the watershed.</li> <li>• Revegetate disturbed areas including closed landfill cells as soon as possible with native groundcover species to minimize potential for reseeding of non-native and/or invasive species.</li> <li>• Conduct post-construction monitoring of plantings for vegetation success. Replacements may be necessary where vegetation does not survive.</li> </ul> <p>This information has also been included as a commitment in Vol. 1 Table 11.1 'Summary of EA Commitments'.</p> <p>The Town has committed to consult with Six Nations of the Grand River (alongside other indigenous communities) throughout the detailed design and construction phase, as detailed in Table 11.1 'Summary of EA Commitments'.</p>	
4.	<p>One thing that Six Nations of the Grand River routinely ask for is a 10:1 tree replacement ratio. That is, for every tree removed (healthy or not) we ask that 10 trees be planted to replace it. The 10 trees do not need to be planted in the same area obviously, we just ask for that commitment. The reason for that is two-fold. The first is that a 1:1 ratio is not enough because a new tree may not survive and secondly the environmental benefits of a mature tree (healthy or not) far outweigh the environmental benefits of a sapling.</p>	<p>To address Six Nations of the Grand River request for a 10:1 tree replacement ratio to be used, the Town will add the following commitment to Vol. I, Table 11.1 'Summary of EA Commitments':</p> <ul style="list-style-type: none"> <li>• Tree replacements will be at a 10:1 ratio.</li> </ul> <p>For clarity, this means that ten tree seedlings will be planted for each tree that must be (is) removed.</p>	
<p>Submitter: <b>Walpole Island First Nation</b> Sep. 28, 2021 email</p>			
1.	<p>We have reviewed the project in the context of Relationship and Reconciliation. We look forward to an on-going relationship with the proponent for the life of the project.</p>	<p>Acknowledged.</p>	
2.	<p>We request at least one meeting a year to review annual report.</p>	<p>The Town completes annual monitoring of the landfill. The Town is happy to commit to a meeting on an annual basis to review the results of the monitoring and any follow-up that may be required. To address WIFN's request, the Town has added the following commitment to Vol. I, Table 11.1 'Summary of EA Commitments':</p> <p>Meet annually with the Walpole Island First Nation to discuss annual monitoring reports, landfill performance and potential benefits and opportunities that the work may present for the Walpole Island First Nation. At each meeting it will be determined if additional meetings are required.</p>	
3.	<p>We look to secure all opportunities, benefits and accommodation for WIFN hosting this project in our territory.</p>	<p>The Town of St. Marys is a relatively small community with limited resources; however, we would be happy to explore opportunities which may be mutually beneficial to the Town and WIFN. To address WIFN's request to be consulted on all potential opportunities, benefits and accommodations, the Town has added the following commitment to Vol. I, Table 11.1 'Summary of EA Commitments':</p>	

**Table 4: Final Environmental Assessment (August 2021) – Indigenous Communities Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status
		<p>The Town will participate in discussions regarding opportunities, benefits and accommodations which may be mutually beneficial with Walpole Island First Nation.</p>	
4.	<p>Special attention and concern are expressed in terms of cumulative impact.</p>	<p>Cumulative impacts were assessed in Vol. 1 Section 9.2 'Cumulative Impacts' of the EA report. The landfill has been in operation since 1984 and the lands immediately surrounding the landfill include large-scale aggregate extraction and large-scale farming, all of which impact the local landscape and environment. The landfill expansion will continue to serve the local community – just the Town of St. Marys. Therefore, on an annual basis, no more waste will be accepted than the current annual limit (taking into consideration some growth in the community over the next 40 years).</p> <p>The landfill will contribute to greenhouse gas (GHG) emissions in Ontario. The expansion is estimated to produce approximately 79,000 tonnes CO<sub>2</sub>e over its entire (40-year) life. This is less than one quarter of a percent (0.25%) of Ontario's annual solid waste related GHG emissions and less than 0.001% of the province's total annual GHG emissions. However, the Town continues to work with residents and businesses to increase waste diversion and reduce GHG emissions. The Town will meet requirements under the Waste-Free Ontario Act and will work to improve composting and recycling rates.</p> <p>There is also potential for methane production in the landfill to decrease over time because of the province's proposed organics disposal ban under the Waste-Free Ontario Act. The current schedule is for the proposed organics disposal ban to come into effect by 2022. The landfill may generate less landfill gas during filling of its final cells if there are changes in organics as a result. This will decrease the overall contribution of fugitive and combustion emissions from the St. Marys Landfill.</p>	

## **Additional Comments During Final Review**

**Final Environmental Assessment (August 2021) – MECP Species at Risk Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 2022 Comments	Proponent's Response
Submitter: <b>Species at Risk</b> , Permissions and Compliance Section of Species at Risk Branch, Ministry of the Environment, Conservation and Parks October 4, 2021					
1.	<p><b>Reference to EA: General Comment &amp; Rationale:</b></p> <p>Given that the fieldwork was completed over six years ago, Species at Risk Branch (SARB) recommends that the property is surveyed for Bank Swallow and possible nesting habitat prior to the start of any site alteration/construction activities. If Bank Swallow is found to be nesting on the property and impacts to individuals and/or habitat is likely, MECP should be contacted for guidance under the ESA</p> <p><b>Proposed Action/Solution:</b></p> <p>Recommended that commitment to survey site for Bank Swallow habitat prior to any site alteration be included in EA (e.g. Section 11). Permissions and Compliance of Species at Risk Branch (SAROntario@ontario.ca) should be contacted for guidance under the <i>Endangered Species Act, 2007</i> if Bank Swallow is found to be nesting on site.</p>	<p>The following commitment was added to Vol. I, Section 9.0 'Potential Impacts, Mitigation Measures and Net Effects', Table 9.1 'Effects, Mitigation, Net Effects and Monitoring Requirements' and Table 11.1 'Summary of EA Commitments':</p> <p>The site will be surveyed for Bank Swallow habitat prior to any site alteration. The Permissions and Compliance of Species at Risk Branch (SAROntario@ontario.ca) will be contacted for guidance under the <i>Endangered Species Act, 2007</i> if Bank Swallow is found to be nesting on site.</p>		Sufficient	
2.	<p><b>Reference to EA: General – throughout EA For example– Table 9.1 (page 265)</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>Throughout the Natural Heritage Assessment, there are references to contacting the Ministry of Natural Resources and Forestry regarding species at risk and/or the <i>Endangered Species Act, 2007</i>. Given the transition of the SAR/ESA program to MECP, Permissions and Compliance Section of SARB is now the sole contact for SAR and the ESA and can be reached at <a href="mailto:SAROntario@ontario.ca">SAROntario@ontario.ca</a>. References to contacting MNRF regarding species at risk throughout the document should be removed for clarity and to ensure the appropriate ministry is contacted if SAR are encountered on site. For example, Table 9.1 – Removal of Habitat for Endangered and Threatened Species states that MNRF <u>and/or</u> MECP should be contacted for further advice. MNRF (now MNDMNRF) remains responsible for special concern species and significant wildlife habitat, so references to MECP in these sections should be removed.</p>	<p>Text updated in Vol. I Section 9.0, Table 9.1 'Effects, Mitigation, Net Effects and Monitoring Requirements' to include only the MECP contact for ESA protected species MNDMNRF for special concern species and Significant Wildlife Habitat.</p> <p>Section 11.1 'Future Commitments and Environmental Compliance', Table 11.1 'Summary of EA Commitments' – was updated to note the commitment:</p> <p>Complete online project registration to address removal of impacted Eastern Meadowlark habitat under O. Reg. 830/21 of the <i>Endangered Species Act</i> (and throughout report where applicable).</p>		Sufficient	

**Final Environmental Assessment (August 2021) – MECP Species at Risk Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 2022 Comments	Proponent's Response
	<p><b>Proposed Action/Solution:</b></p> <p>Update to only include MECP contact for ESA protected species and MNDMNR for special concern species and Significant Wildlife Habitat.</p>				
3.	<p><b>Reference to EA: Section 3.7.1.3 – Natural Environment (page 48)</b>  <b>Section 3.8.2.4 Potential Impacts to Biology (page 69)</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>These sections state “Grassland areas <i>may</i> provide habitat for grassland birds or snakes, including species at risk.”</p> <p>Species at risk habitat has been confirmed on site, and therefore, protection under the ESA applies to grassland habitat for Eastern Meadowlark.</p> <p>Authorization under the ESA (e.g., permit or registration) is required for any impacts to Eastern Meadowlark or its habitat.</p> <p><b>Proposed Action/Solution:</b></p> <p>This section should be updated to reflect confirmed Eastern Meadowlark habitat on site.</p>	<p>Updated text in Vol. 1 Section 3.7.1.3 '<i>Natural Environment</i>' and 3.8.2.4 '<i>Potential Impacts to Biology</i>' to confirm Eastern Meadowlark habitat on site.</p> <p>Authorization under the ESA (conditional exemptions under O.Reg. 830/21) is required for any impacts to Eastern Meadowlark or its habitat. The following commitment is in Table 11.1 'Summary of EA Commitments' (ESA italicised and underlined for context):</p> <p>Acquire all necessary permits and/or approvals pursuant to the:</p> <ul style="list-style-type: none"> <li>• Environmental Protection Act</li> <li>• Ontario Water Resources Act</li> <li>• Conservation Authorities Act</li> <li>• Planning Act</li> <li>• <u><i>Endangered Species Act</i></u></li> <li>• Fisheries Act</li> <li>• Fish and Wildlife Conservation Act</li> <li>• Ontario Heritage Act</li> </ul> <p>Others, as identified during the design phase (e.g., changes to electrical supply will be addressed through Festival Hydro and/or Hydro One etc.)</p>		Sufficient	
4.	<p><b>Reference to EA: Table 7-10: Summary of Potential Impacts to Biology Row: Mitigation to be applied to all Alternatives (page 205)</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>This section states that mitigation measures to avoid creation suitable nesting habitat for Bank Swallow should be applied during operation of the landfill. Mitigation measures should also be applied during the construction phase (in addition to operation).</p> <p><b>Proposed Action/Solution:</b></p> <p>Updates to table recommended to include appropriate mitigation measures during construction.</p>	<p>Vol. I Section 7.1, Table 7 2 'Standard Mitigation and Operating Practices Common to All Alternatives', and Section 9.0, Table 9-1 'Effects, Mitigation, Net Effects, and Monitoring Equipment' have been updated to ensure appropriate mitigation measures are applied during construction, to prevent Bank Swallow from establishing nesting burrows (i.e., slope management, deterrents, and exclusion measures).</p>		Sufficient	



**Final Environmental Assessment (August 2021) – MECP Species at Risk Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 2022 Comments	Proponent's Response
5.	<p><b>Reference to EA: Table 9-1 – Impacts, Mitigation, Net Effects and Monitoring Requirements</b></p> <p><b>Rows: Removal of Habitat for Endangered and Threatened Species and Species at Risk (page 263 and 264)</b></p> <p><b>Comment &amp; Rationale:</b></p> <p>This section states that mitigation measures to avoid creation suitable nesting habitat for Bank Swallow should be applied during operation of the landfill. Mitigation measures should also be applied during the <u>construction</u> phase (in addition to operation).</p> <p>This is highly significant, given that the species has nested on the site previously, and should be addressed in the EA phase. If mitigation measures for Bank Swallow are not undertaken, there is an increased likelihood that Bank Swallow will continue nesting attempts, which triggers protection under the <i>Endangered Species Act, 2007</i> (ESA). Activities that impact Bank Swallow individuals and their habitat (e.g., grading of stockpiles being used as nesting habitat by Bank Swallow) are prohibited under the ESA and authorization under the ESA may be required.</p> <p>The bullet for Bank Swallow under the Mitigation Measures column should be updated to “a no- disturbance 50m setback from the nesting site shall be placed around the site” removing the wording “until no further evidence of breeding is observed.” If Bank Swallow is found to be nesting on the property, either during landfill construction or operation, the individuals and their nests receive protection under the ESA. An authorization under the ESA may be required for the alteration or removal of Bank Swallow nesting habitat, unless it has been determined that the habitat is no longer suitable (e.g., slumping) or being used. Species at Risk Branch of MECP should be contacted if it's determined that Bank Swallow is nesting on site.</p> <p><b>Proposed Action/Solution:</b></p> <p>Updates to the table recommended to include appropriate mitigation measures during construction. Mitigation measures should include appropriate site management (e.g. grading stockpile faces to avoid nesting), given that Bank Swallow (threatened) is known to occur in the area and previous nesting attempts by the species have been made on the site. The Best</p>	<p>Mitigation measures during construction have been added to Vol. I Section 9.0, Table 9-1 'Effects, Mitigation, Net Effects, and Monitoring Equipment', including measures to prevent Bank Swallow from establishing nesting burrows. Table 9-1 has also be updated to include the Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario (MNRF, 2017).</p>		<p>Table 9.1 does not include a reference to avoiding the creation of nesting habitat during construction. SARB recommends that this table clearly states that mitigation measures for Bank Swallow should be implemented during landfill construction and operation.</p> <p>SARB's previous comments provided advice regarding a 50m setback from Bank Swallow nesting habitat. This bullet has been removed from Table 9.1. Please clarify why this bullet has been removed (e.g., the reference to implementation of the Bank Swallow BMP and the habitat description is intended to cover this).</p>	<p>Table 9-1 has been updated to note that the requirement to avoid creating habitat applies to both construction and operations. The text now reads:</p> <p>“Avoid the creation of temporary vertical or near-vertical spoil piles within the landfill and compost pile that are prone to frequent disturbance from landfill construction and operations to reduce the chance of attracting nesting Bank Swallow. Following Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario (MNRF, 2017).”</p> <p>This has also been added to the construction-related mitigation listed in Table 7-2.</p> <p>There are currently no active Bank Swallow nests on the site. Table 9-1 and Table 11-1 have been updated to include the following:</p> <p>“Should Bank Swallow be found nesting on-site, apply a 50 m buffer around the active nest.”</p> <p>Section 7.7.1 has also been updated to include the following mitigation:</p> <p>“Survey site for Bank Swallow habitat prior to any site alteration</p>

**Final Environmental Assessment (August 2021) – MECP Species at Risk Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 2022 Comments	Proponent's Response
	Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario should be followed during construction and when the landfill is in operation.				and contact SAROntario@ontario.ca for guidance under the Endangered Species Act 2007 if Bank Swallow is found to be nesting on site. Should Bank Swallow be found nesting on-site, apply a 50 m buffer around the active nest."

**Final Environmental Assessment (August 2021) – MHSTCI Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 11, 2022 Comments	Proponent's Response
Submitter: <b>Ministry of Heritage, Sport, Tourism and Culture Industries</b> October 1, 2021					
	<p>MHSTCI's interest in this EA project relates to its mandate of conserving Ontario's cultural heritage, which includes:</p> <ul style="list-style-type: none"> <li>• archaeological resources, including land and marine;</li> <li>• built heritage resources, including bridges and monuments; and</li> <li>• cultural heritage landscapes.</li> </ul> <p>Under the EA process, the proponent is required to determine a project's potential impact on known (previously recognized) and potential cultural heritage resources.</p> <p><b>Project Comments:</b></p> <p>Given there are no direct impacts to cultural heritage resources through this undertaking, and the mitigation measures included in the EA report in the case of unexpected impacts, MHSTCI does not have any substantive concern with this project. However, we would suggest editorial revisions.</p>	Acknowledged.		MCM has no further concerns	Noted
A.	<p><b>General Comment:</b> Update the ministry name from Ministry of Tourism, Culture and Sport to Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI) throughout the Environmental Assessment Report and appendices.</p>	<p>All references to the former <i>Ministry of Tourism, Culture and Sport</i> (MTCS) have been replaced with <i>Ministry of Heritage, Sport, Tourism, and Culture Industries</i> (MHSTCI).</p>		MCM has no further concerns	Noted
B.	<p><b>General Comment:</b> Any references to the Guidelines for Preparing the Cultural Heritage Resource Component of Environmental Assessments (1992) and Guidelines on the Man-Made Heritage Components of Environmental Assessments (1981) can be removed as they have been superseded by other policies, plans and regulations.</p>	<p>References to the Guidelines for Preparing the Cultural Heritage Resource Component of Environmental Assessment (1992) and Guidelines on the Man-Made Heritage Components of Environmental Assessments (1981) made in Section 6.4.2.1 'Built Heritage Resources and Cultural Heritage Landscapes' have been removed.</p> <p>The text in this section was replaced with the following:</p> <p>The CHRA assessed the presence of Built Heritage Resources and Cultural Heritage Landscapes in accordance with the Standards and Guidelines for Conservation of Provincial Heritage Properties (April 2010), Provincial Policy Statement and policies</p>		MCM has no further concerns	Noted

**Final Environmental Assessment (August 2021) – MHSTCI Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 11, 2022 Comments	Proponent's Response
		listed in the Town of St. Marys Official Plan (2007 Consolidation, Section 2.3).			
C.	<p><b>Section 3.7.1.2 (Existing St. Marys Landfill, Page 46) / Section 3.7.2.2 (Twin Creeks Landfill, Page 52):</b> These sections need to describe existing conditions of the cultural environment informed by the technical cultural heritage studies (i.e., archaeological assessment and cultural heritage resource assessment).</p>	<p>For the purposes of the evaluation of the Alternatives to the Undertaking, a coarse level evaluation was completed using information available in the Town of St. Marys Official Plan, Twin Creeks Landfill website and aerial photography. This is consistent with the process outlined in the Terms of Reference.</p> <p>The Stage 1 Archaeological Assessment and Cultural Heritage Resource Assessment were conducted after the evaluation of Alternatives to the Undertaking had been completed.</p> <p>The results of the Stage 1 Archaeological Assessment and CHRA were incorporated into the evaluation of Alternative Methods.</p> <p>In addition, Section 3.7.1.2 'Social and Cultural Environment' has been updated to clarify the sources of information that were used during this portion of the EA.</p>		MCM has no further concerns	Noted
D.	<p><b>Section 3.8.3.1 Potential Impacts to Archaeological Resources (Page 72):</b> A Stage 1 AA was undertaken for the St. Marys Landfill expansion. The report concluded that the entire on-site study area has been documented to not retain archaeological potential and that these lands do not require further archaeological assessment. The AA report also recommended that should the proposed work extend beyond the current study area then further Stage 1 AA should be conducted to determine the archaeological potential of the surrounding lands. This section needs to be revised to clearly articulate the due diligence undertaken to date, potential impacts and future commitments.</p>	<p>As per the response to comment C, above, the Stage 1 AA was not completed during the Alternatives to the Undertaking phase of the EA documented in Section 3.8.3.1 'Potential Impacts to Archaeological Resources'</p> <p>A Stage 1 AA was undertaken for the landfill property including all of the lands required for the landfill expansion and concluded that no archaeological resources are likely to be present at, or around, the St. Marys landfill.</p>		MCM has no further concerns	Noted
E.	<p><b>Section 3.8.3.2 Potential Impacts to Built Heritage / 3.8.3.3 Potential Impacts to Cultural Heritage Landscapes (Pages 72-73):</b> A Cultural Heritage Resource Assessment has been undertaken and identified 12 resources including 11 cultural heritage landscapes and one built heritage resource within the study area vicinity. The Assessment report also included</p>	<p>As per the response comment C, above, the CHRA was not completed during the Alternatives to the Undertaking phase of the EA documented in Section 3.8.3.2 'Impacts to Built Heritage'.</p> <p>The Cultural Heritage Resource Assessment informed the evaluation of Alternative Methods. The recommendations from the CHRA have been</p>		MCM has no further concerns	Noted

**Final Environmental Assessment (August 2021) – MHSTCI Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 11, 2022 Comments	Proponent's Response
	recommendations. These sections should be consolidated and revised.	added to Section 7.9.1 'Built Heritage and Cultural Heritage Landscapes'.			
F.	<p><b>Section 6.6.2.1 Built Heritage Resources and Cultural Heritage Landscapes (Page 158-160):</b> Section 6.6 is the description of the existing environment. This section should be revised to align with the proposed wording in Section 3.7.1.2 (See Comment C above).</p> <p>The Executive Summary will need to be revised accordingly.</p>	<p>Section 6.4.2.1 'Built Heritage and Cultural Heritage Landscapes' has been updated. The previous text was replaced with the wording noted below:</p> <p>"A Cultural Heritage Resource Assessment (CHRA): Built Heritage Resources and Cultural Heritage Landscapes- Existing Conditions was undertaken by ASI in November 2015. The CHRA assessed the presence of Built Heritage Resources and Cultural Heritage Landscapes in accordance with the Standards and Guidelines for Conservation of Provincial Heritage Properties (April 2010), Provincial Policy Statement and policies listed in the Town of St. Marys Official Plan (2007 Consolidation, Section 2.3). The assessment consisted of data collection, background historic research, review of secondary source material and field review. The purpose was to present an inventory of known or potential built heritage resources and/or cultural heritage landscapes as well as identify any potential impacts and proposed appropriate mitigation measures to minimize effects. The CHRA can be found in Volume III, Appendix E.</p> <p>The background research, data collection, and field review conducted for the Study Area determined that 12 cultural heritage resources are located within the Study Area Vicinity, as summarized in 6-13 'Cultural Heritage Resources in the Study Area Vicinity'. Of these, 11 are Cultural Heritage Landscapes and one is a Built Heritage Resource. No cultural heritage resources were identified within the On-Site Study Area."</p> <p>A figure showing the location of the 12 resources is provided in Figure 6-6 'Cultural Heritage Resources' of the Vol. I EA document.</p> <p>The following recommendations have been added to Section 7.9.1 'Built Heritage and Cultural Heritage Landscapes' and Table 7-13 'Potential Effects to Cultural Heritage Landscapes':</p>		MCM has no further concerns	Noted

**Final Environmental Assessment (August 2021) – MHSTCI Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 11, 2022 Comments	Proponent's Response
		<ol style="list-style-type: none"> <li>1. Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.</li> <li>2. Once designs of the proposed work are available, this report will be updated with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.</li> <li>3. Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.</li> </ol> <p>The Executive Summary has been similarly revised.</p>			
G.	<p><b>Section 6.6.2.2 Archaeological Resources (Page 161):</b> This section should be revised to align with the proposed wording in Section 3.7.1.2 (See Comment #3 above).</p> <p>The Executive Summary will need to be revised accordingly.</p>	<p>Section 6.4.2.2 'Archaeology Resources' has been updated. The previous text was replaced with the following:</p> <p><b>Methodology</b></p> <p>A Stage 1 Archaeological Assessment (under Project Information Form number P392-0171- 2015) was completed by ASI. A Stage 1 AA consists of a review of geographic, land use and historical information for the property and the relevant surrounding area, a property visit to inspect its current condition and contacting MHSTCI to find out whether, or not, there are any known archaeological sites on or near the property. Its purpose is to identify areas of archaeological potential and further archaeological assessment (e.g., Stage 2-4) as</p>		MCM has no further concerns	Noted

**Final Environmental Assessment (August 2021) – MHSTCI Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 11, 2022 Comments	Proponent's Response
		<p>necessary. The Stage 1 assessment was conducted in accordance with the <i>Ontario Heritage Act</i> and the Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism and Culture, 2011).</p> <p><b>Existing Archaeological Resources</b></p> <p>The Stage 1 Archaeological Assessment report has been entered into the Ontario Public Register of Archaeological Reports. The report concluded that the entire on-site study area has been documented to not retain archaeological potential and that these lands do not require further archaeological assessment. The Stage 1 assessment is included in Volume III - Appendix F."</p> <p>The Executive Summary has been revised accordingly.</p>			
H.	<p><b>Section 7.2.1 Built Heritage Resources / Section 7.2.2 Cultural Heritage Landscapes (Pages 207-211):</b> A Cultural Heritage Resource Assessment has been undertaken and identified 12 resources, including 11 cultural heritage landscapes and one built heritage resource within the study area vicinity. No built heritage resources and/or cultural heritage landscapes were identified within the onsite study area. The Assessment report also included recommendations. These sections should be consolidated and revised (See Comment E) above).</p> <p>Furthermore, it is not clear how the assessment of impacts on built heritage resources and cultural heritage landscapes were determined. Any discussion should be based on technical cultural heritage landscapes.</p> <p>There is no need to include a definition of cultural heritage landscapes in the EAR, as it is articulated in the CHRA. Should you wish to include one, the definition should be the one from the Provincial Policy Statement, 2020.</p>	<p>It is understood that Built Heritage Resources and Cultural Heritage Landscapes are both considered to be Cultural Heritage Resources. However, these two sections have not been consolidated as they were identified as separate criteria in the Terms of Reference.</p> <p>The impact assessments in Section 7.9.1 'Built Heritage and Cultural Heritage Landscapes' have been changed to better align with the CHRA. These sections now include the following text and recommendations from the CHRA:</p> <ol style="list-style-type: none"> <li>1. Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.</li> <li>2. Once detailed designs of the proposed work are available, this report will be updated with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact</li> </ol>		MCM has no further concerns	Noted

**Final Environmental Assessment (August 2021) – MHSTCI Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 11, 2022 Comments	Proponent's Response
		<p>assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.</p> <p>3. Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.</p> <p>The definition of cultural heritage landscapes in Section 7.9.1 'Built Heritage and Cultural Heritage Landscapes' has been removed.</p>			
I.	<p><b>Section 7.2.3 Archaeological Resources (Page 212):</b> A sentence to acknowledge that further archaeological assessment be undertaken should the proposed work extend the current study area should be included. (See Comment D).</p>	<p>The following sentence has been added to Section 7.9.2 'Archaeological Resources':</p> <p>"Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to any ground disturbing activities."</p>		<p><b>Amended Section 7.8.2 Archaeological Resources (Page 228)</b> . MCM has reviewed the revised text and recommends that the amended section include the language provided in your response dated September 20<sup>th</sup>:</p>	<p>Section 7.8.2 has been updated to include the following language:</p> <p>"Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to any ground disturbing activities."</p> <p>This language has also been added to Table 9-1.</p>
J.	<p><b>Table 9-1 Impacts, Mitigation, Net Effects and Monitoring Requirements / Environmental Component: Archaeological Resources (Page 266):</b> Under the Mitigation Measures column, the name of the unit to be contacted at MHSTCI should be Archaeology Program Unit at <a href="mailto:archaeology@ontario.ca">archaeology@ontario.ca</a>.</p> <p>The AA report also recommended that should the proposed work extend beyond the current study area then further Stage 1 AA should be conducted to determine the archaeological potential of the surrounding lands. MHSTCI recommends that a paragraph be</p>	<p>The contact noted in Vol. I, Table 9-1 'Effects, Mitigation, Net Effects, and Monitoring Requirements' has been updated to reference MHSTCI, Archaeology Program Unit at <a href="mailto:archaeology@ontario.ca">archaeology@ontario.ca</a>.</p> <p>The following wording has been added to the list of commitments in Table 11-1:</p> <p>Conduct a further Stage 1 Archaeological Assessment (and further assessment, if required) to determine the archaeological potential of the</p>		<p><b>Amended Table 11-1 Summary of EA Commitments (Page 357)</b> MCM has reviewed the revised text and recommends that the list of commitments include the language provided in your response dated September 20<sup>th</sup>:</p>	<p>Table 11-1 has been updated to include the following language:</p> <p>"Should the proposed work extend the current study area, then further Stage 1 Archaeological Assessment (and further assessments, if recommended) will be conducted by a licensed archaeologist as early as possible during detailed design and prior to any ground disturbing</p>



**Final Environmental Assessment (August 2021) – MHSTCI Comment Summary Table**

Proposal: **St. Marys Future Solid Waste Disposal Needs Environmental Assessment**

Proponent: **Town of St Marys**

#	Summary of Comments	Proponent's Response	Status	October 11, 2022 Comments	Proponent's Response
	included to acknowledge that under the Recommended Monitoring Activities and Contingency Measures (See Comment D) above.	surrounding lands if the proposed work extend beyond the current On-site Study Area.			activities.”
K.	<p><b>Table 9-1 Impacts, Mitigation, Net Effects and Monitoring Requirements / Environmental Component: Cultural Heritage Landscapes (Page 266):</b> The environmental component should be <b>Built Heritage Resources</b> and Cultural Heritage Landscape. The row will need to be revised to better describe the impact assessment as per Comments D), E) and H) above.</p>	<p>Vol. I, Table 9-1 ‘Effects, Mitigation, Net Effects, and Monitoring Requirements’ has been updated to include both the Built Heritage Resources and Cultural Heritage Landscapes as the environmental component.</p> <p>The row has been updated to note that impacts will be further assessed in an updated CHRA to be prepared during detailed design. The following recommendations have now been added to Table 11.1 ‘Summary of EA Commitments’:</p> <ul style="list-style-type: none"> <li>• Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.</li> <li>• Once detailed designs of the proposed work are available, this report will be updated with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.</li> <li>• Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.</li> </ul>		<p><b>Amended Table 11-1 Summary of EA Commitments (Page 357)</b> MCM has reviewed the revised text and recommends that the list of commitments include the language provided in your response dated September 20<sup>th</sup>:</p>	<p>The following wording has been added to Table 11-1 and Table 9-1:</p> <ul style="list-style-type: none"> <li>• Construction activities and staging should be suitably planned and undertaken to avoid impacts to identified cultural heritage resources.</li> <li>• Once detailed designs of the proposed work are available, this report will be updated with a confirmation of impacts of the undertaking on cultural heritage resources identified within and/or adjacent to the study area and will recommend appropriate mitigation measures. Mitigation measures may include, but are not limited to, completing a heritage impact assessment or documentation report, or employing suitable measures such as landscaping, buffering or other forms of mitigation, where appropriate. In this regard, provincial guidelines should be consulted for advice and further heritage assessment work should be undertaken as necessary.</li> <li>• Should future work require an expansion of the study area then a qualified heritage consultant should be contacted in order to confirm the impacts of the proposed work on potential heritage resources.</li> </ul>

