



December 9, 2024  
Proposal Number: PR02680

Mr. Lee Gosnell  
The Corporation of the Municipality of West Elgin  
22413 Hoskins Line, Box 490  
Rodney, ON N0L 2C0

**Re: Proposal for West Elgin Landfill Options**

Dear Mr. Gosnell:

BluMetric Environmental Inc. (BluMetric®) has prepared this document to support the Municipality of West Elgin is determining future steps for the West Elgin Landfill (the Site), based on recent survey results that indicate the landfill is at nearing capacity (i.e. survey conducted on October 10, 2024, that concludes a net fill remaining capacity of 1,683m<sup>3</sup>).

Pre-consultation with the Ministry of the Environment, Conservation, and Parks (MECP) is the first step in all paths moving forward.

The following presents two proposed pathways for future operations at the landfill and the key steps:

1. Close Landfill and Operate as a Waste Transfer Station (WTS) only
  - a. Prepare Closure Plan for MECP approval;
  - b. Evaluate any changes required to waste or recyclable drop-off facilities, changes to materials accepted and/or other WTS operations;
  - c. Environmental Compliance Approval (ECA) amendment; and
  - d. Landfill Closure Activities
  
2. Expand Landfill by less than 40,000m<sup>3</sup> and continue to Operate as a Landfill and a WTS
  - a. Prepare Expansion Design for MECP approval;
  - b. Prepare Design and Operations Plan;
  - c. Updated Hydrogeology Reporting;
  - d. ECA amendment.

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In both instances, an application to amend the ECA is required, and it is recommended that when this is submitted, it includes the revised Trigger Mechanism and Contingency Plan (TMCP) as per recommendations in the most recent monitoring reports, as well as an update to landfill operational hours.

The landfill operates under ECA Number A051101 originally approved by the Ministry of the Environment, Conservation and Parks (MECP) December 21, 2005, and amended April 11, 2012, September 11, 2015, and April 4, 2017.

## **WORK PLAN**

### **Task 1 - Ministry Consultation**

This task includes consultation with the local MECP officer to keep them informed of the upcoming request for amendment in advance of applying in an effort to streamline the process. It is anticipated that this initial meeting with the MECP will also include staff from the MECP technical review section as well as the municipality and BluMetric. Upon our request, the MECP officer will coordinate all attendees from MECP. Based on this meeting, BluMetric can incorporate any details into the reports and application that the MECP states will be required, prior to submittal to the MECP Approvals Branch. One virtual meeting has been assumed for this initial consultation.

### **Task 2A - Option A – Landfill Closure**

BluMetric will develop and provide an engineered closure plan for the West Elgin Landfill. The closure plan will be prepared in accordance with Ontario Regulation (O. Reg.) 347/90, General Waste Management Regulation and O. Reg. 232/98 Landfill Sites (and the supporting Landfill Standards guidance document, MOECC 2012). It is noted that O.Reg. 232/98: Landfill Sites (and the supporting Landfill Standards guidance document, MOECC 2012) pertains to new or expanding landfill sites and therefore does not apply to this site if Option A is selected; however, it is considered an appropriate guidance document for closure practices. The closure plan for the site will include a site description, waste characterization and grading specifications, closure design plan (including 'Issued for Tender' drawings, and post-closure monitoring and reporting requirements, if applicable). The Site currently operates as a waste transfer station for white goods and recyclables and it is proposed that waste be included.

Based on BluMetric's extensive experience with the West Elgin Landfill, it is not anticipated that any field tasks will be required (i.e. no additional sampling or monitoring, test-pitting work, or survey work).



The closure plan will include the following:

- Site description: site location, topography, hydrology, geology, and hydrogeology.
- Waste Characterization and Grading Specifications: waste area, type, and volume assessment, and above-waste subsurface characterization for cut, fill, and grading, based on a recent topographic survey.
- Closure plan design: Overview, topographical survey and contours, site cut, fill, and grading, buffer zone, surface water management recommendations, native soils and attenuation zone analysis, methane generation, assessment of final cover material options (including potential sources, cost, hauling, etc.), and recommended final cover material option that are specific to the Site, final cover specifications, end use, vegetation, leachate management plan, evaluation of site performance, contingency plans, site facilities (fencing and barricades, roads, and signs), operations guidelines, stormwater management plan, and, if applicable, perimeter ditches. Waste transfer station (WTS) design will be detailed in the closure.
- If applicable, post closure monitoring and or reporting requirements; for example, these requirements may include groundwater, surface water, and gas monitoring programs (number of locations, analytical requirements, frequency, etc.) as well as any future reporting.

It is assumed no infrastructure for the WTS would need to be built or designed.

A draft closure plan will be provided to West Elgin for review and the final stamped closure plan will be submitted within two weeks of receiving feedback from the Municipality.

The closure plan will need to be submitted to the MECP via an ECA Amendment Application as further described in Task 4.

Closure construction activities are outside the scope of this work plan.

### **Task 2B – Option B – Landfill Expansion**

As per the Environmental Assessment Act O.Reg. 50/24, Part 11.3 identifies projects that are exempt from the act, including a change to a landfilling site or dump if the total waste disposal volume of the landfilling site or dump after the change would exceed the total waste disposal volume that the landfilling site or dump was authorized to have under the *Environmental Protection Act* before the change by greater than or equal to 40,000 cubic metres (m<sup>3</sup>) but by less than or equal to 100,000 m<sup>3</sup>. As such, it is assumed that with Ministry agreement, an expansion less than 40,000 m<sup>3</sup> could proceed with an ECA Amendment application with

appropriate design documentation only and would be exempt from the requirements of the Environmental Assessment Act.

BluMetric will prepare a revised Design and Operations Report that considers expanded capacity of the West Elgin landfill. Based on land availability, it is considered that the expansion will be limited to height (versus extended footprint) and will follow O. Reg. 232/98 Landfill Sites Section 30 – Final Slopes regulations that states that the final slopes above grade within the waste fill zone at the time of site closure do not exceed one unit vertical to four units horizontal and are not less than one unit vertical to 20 units horizontal (O. Reg. 232/98, s. 30 (1)). An initial assessment identifies a possible physical capacity increase of 30,000 m<sup>3</sup> based on geometrical constraints, however the following considerations need to be addressed:

- recent annual waste input rates are approximately 7,000 m<sup>3</sup> and an additional 30,000 m<sup>3</sup> would not prolong the landfills life beyond approximately 4 years without enhanced diversion.
- the current trigger mechanism and contingency plan is regularly triggered for certain parameters and a revised version has not been approved by the MECP. It will have to be demonstrated that the landfill is in compliance and can reasonably be expected to remain in compliance following expansion. BluMetric will consider the use of models acceptable to MECP to assess the potential impact of the expanded landfill.
- currently the site does not require storm water control and drainage considerations are required (infiltration versus runoff).

BluMetric will complete a review of the current D&O, including updates to hydrogeological/monitoring reporting and the ECA for the landfill and compare against current regulatory requirements (Ontario Regulation O.Reg. 232/98, as amended), and will make recommendations to revise the D&O Report to improve the long-term performance should they be deemed necessary. The Ministry has requested updated figures to address the location of the burn pit and the Waste Transfer Station (WTS) set up. The following structure is proposed for the revised D&O report:

### **Part 1: Introduction**

This part provides a summary of the site history, a listing of the key requirements of the ECA and a reference to the sections of the report that address each of these requirements.

### **Part 2: Existing Conditions**

This part provides a summary of the available relevant background information, which may include but is not limited to, landfill service; site location; legal description; adjacent land uses; general topography and resulting surface water drainage; a summary of a desktop



hydrogeological assessment; climatologic information; estimate of extent and quantity of in-place waste; and waste characteristics. The historical hydrogeological investigations will be re-visited, and this section will be updated, where possible, with recent landfill monitoring data, including predictive analysis of impacts the expansion may have. It is assumed no drilling is required.

### **Part 3: Waste Quantities and Characteristics**

This part will mimic that of the original D&O Report with updated data where available including the expanded quantities.

### **Part 4: Site Design**

In general, this section will re-visit the previously approved site design. The updates to the report are anticipated to include an update of the site layout figure and an updated phased development plan for an expansion. To update the site layout and expansion design, BluMetric will utilize the results from the UAV survey conducted in 2024 and use AutoCAD Civil 3D to create a 3-dimensional surface that triangulates the ground between survey points.

BluMetric will update the landfill progression plan based on the 2024 surface and long-term generation rates from annual fill rates from that last 5 years. The updated progression plan figures will be created using AutoCAD Civil 3D. Phase outlines will be determined, and volumes will be calculated by the geomatics analyst to help determine the expected lifetime of each phase/ area. The importance of the phased development plan is to provide West Elgin with a timeline for when large capital costs are going to be incurred, be it development of an expansion area or closure of a completed area. The added benefit of a phased development plan is that by progressively closing the landfill, there is less opportunity of adverse environmental impacts from the site.

The site capacity and remaining lifespan will be confirmed under the newly proposed expansion design. It is assumed that as per the current D&O, no storm water management will need to be addressed. It is noted that any need to apply or amend approvals with respect to the Ontario Water Resources Act (OWRA) are outside the scope of this work. Likewise, this proposal assumes the cost for the design of any storm water control is also outside the scope. Should it become evident that is needed, a separate cost will be provided.

This is the section where any design features for screening of the landfill from the public (visual and noise) and / or leachate generation and management would be discussed. This landfill does not have an engineered control system for leachate management.

### **Part 5: Site Operations**

It is anticipated that this part will include the following:

1. Site Development.
2. Operating Hours.
3. Operating Equipment including a description of the fill method and the procedures for waste deposition, spreading, and covering.
4. Active Face Operations that outline proven operational practices that are both economical and in compliance with MECP criteria.
5. Housekeeping practices to control noise, dust, litter, odour, rodents, insects, and other vectors.
6. Burning Protocol.
7. Staffing and training of staff responsible for landfill operations.
8. Inspection activities.

### **Part 6: Environmental Monitoring and Reporting**

The objective of this part is to summarize the recommended environmental monitoring program at the site. It is anticipated that this will be confirmation of the current environmental monitoring program as detailed in the current ECA and annual monitoring and reporting. The maintenance activities proposed for the monitoring well network will also be discussed here. A brief overview/reference to the trigger mechanism and contingency measures will be incorporated into this section, but the final details will be provided in a standalone Trigger Level Mechanism and Contingency Plan.

### **Part 7: Closure and Post Closure**

The final section of the report will provide a brief overview of the closure details for the site; the specific closure details would be provided in a formal Closure Plan, which is beyond the scope of this project.

### **Task 3: Finalize Proposed Trigger Mechanism and Contingency Plan**

It has previously been recommended that an adjustment to the Trigger Mechanism and Contingency Plan be considered such that LIPs be identified as either primary or secondary indicators and the alerts are only triggered when more than one parameter demonstrates an increasing trend beyond the trigger limit. The proposed changes have been included in the 2021, 2022, and 2023 Annual Monitoring reports.

The following proposed changes will be finalized:

1. The Leachate Indicator Parameters (LIPs) be identified as either primary (for more conservative parameters) and secondary (less conservative parameters).
  - a. Primary LIPs to include; chloride and arsenic
  - b. Secondary LIPs to include; alkalinity, DOC, iron, and sodium (these parameters are either historically present in the background monitoring well or another potential source exists such as decaying plant matter from a wetland).
2. The Tier 1 Alert will not be triggered unless two or more LIPs (including at least one primary LIP) meet the required criteria (i.e. the trigger level is exceeded for 3 consecutive samplings events at a trigger well).

#### **Task 4: ECA Amendment Application**

BluMetric will prepare an application to amend the current ECA to reflect the following:

1. Select Task 2 Option A or B – either Closure Plan or Expansion Design and revised D&O Report;
2. Proposed changes to the Trigger Mechanism and Contingency Plan; and
3. The landfill operation hours committed to by West Elgin in the Abatement Plan submitted to the MECP.

This task includes consultation with the local MECP officer to keep them informed of the upcoming request for amendment in advance of applying in an effort to streamline the process. It is anticipated that the MECP officer and technical review section will review and that BluMetric can revise the D&O report prior to submittal to the MECP Approvals Branch. As such, any comments/ suggestions will be incorporated in the application.

The MECP application fee for an amendment would depend on the nature of the change and only the \$200 administrative fee is included at this time (for reference, in similar submittals for Closure BluMetric has encountered an application fee of approximately \$1,500 while applications for expansion may equate to as high as approximately \$30,000).

#### **PROJECT SCHEDULE AND COST**

BluMetric personnel are available to begin work immediately upon proposal review and acceptance by The Municipality of West Elgin. Our estimate of costs for carrying this proposed work plan is provided below in Table 1 – there are two options presented for Task 2.



**Table 1: Project Costs**

Task	Description	Option A – Closure	Option B - Expansion
1	MECP Consultation	\$2,400	\$2,400
2A	Closure Plan	\$7,520	-
2B	Option - Expansion Design/ D&O Report	-	\$17,080
3	Finalize Trigger Plan	\$6,500	\$6,500
4	ECA Amendment	\$4,720	\$4,720
<b>Totals</b>		<b>\$21,140</b> (not including the application fee ~\$1,500)	<b>\$30,700</b> (not including the application fee ~\$30,000)

The estimated total upset budget for this project is **\$21,140 for option 1 and \$28,060 for option 2 (not including HST)**. Note that all expenses will be charged at a cost recovery rate plus 15%.

BluMetric will not exceed this budget without prior approval from The Municipality of West Elgin. This budget includes all professional fees and disbursements but does **not** include the HST.

## CONFIDENTIALITY

All information, data, material, etc. gathered as a part of this study shall be treated as confidential and shall only be discussed with The Municipality of West Elgin unless otherwise directed.

No contacts will be made to any third party without your full knowledge and approval. The contents of this proposal are considered confidential information, and as such is to be kept strictly confidential and shall not be disclosed in any form whatsoever to any other person, entity or corporation, without the prior express written permission of BluMetric.

## CLOSING

If the terms of this proposed work plan are agreeable to you, please sign one copy of the proposal in the knowledge that this constitutes a legal contract between BluMetric and The Municipality of West Elgin. We are prepared to start work upon receipt of the signed proposal from The Municipality of West Elgin.



Thank you for the opportunity to prepare this work plan and cost estimate for the revised D&O Plan, finalized Trigger Mechanism and Contingency Plan, and ECA amendment work.

If you have any questions, or require any additional information, please do not hesitate to contact S'rana Scholes at (519) 588-3000.

Sincerely,

**BluMetric Environmental Inc.**



S'rana Scholes, B.A.Sc., P. Eng.

Project Manager/ Team Lead – Waste Management



P. Andrew S. Benson, P.Eng.

VP, Director of Operations

