



# **ADDENDUM TO ENVIRONMENTAL ASSESSMENT REPORT**

## **MADAWASKA VALLEY WASTE MANAGEMENT STRATEGIC PLAN**

**TOWNSHIP OF MADAWASKA VALLEY  
COUNTY OF RENFREW, ONTARIO**

Prepared for

**THE CORPORATION OF THE TOWNSHIP  
OF MADAWASKA VALLEY**

July 24, 2007



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## **1.0 INTRODUCTION**

### **1.1 BACKGROUND**

The Township of Madawaska Valley (Township) submitted the Madawaska Valley Waste Management Strategic Plan (WMSP) Environmental Assessment (EA) to the Ontario Ministry of the Environment (OMOE) on May 4, 2007, in accordance with Section 6.2 (1) of the *Environmental Assessment Act, R.S.O. 1990, Chapter E.18* (EAA).

Following submission of the EA report on May 4, 2007, a five-week public and government agency review period was observed, ending June 22, 2007. During this period, pertinent agencies reviewed the EA report, and comments on the EA were received and clarifications were addressed by the Township, under separate cover to this Addendum. In the few instances where actual amendments to the EA were deemed necessary by the OMOE, the Township was directed to prepare an Addendum to the EA, to ensure clarification and compliance with the EAA during the review stages following the EA submission.

Greenview Environmental Management Limited (Greenview) was retained by the Township to prepare this Addendum to the EA to provide additional information as deemed necessary by the OMOE in order to finalize the public and government agency review period related to the submission of the WMSP EA on May 4, 2007.

### **1.2 PURPOSE AND SCOPE**

The purpose of this addendum report is to provide additional clarification and new information on the Township's WMSP EA undertaking. This addendum report provides the following additional information in support of the Township's WMSP EA undertaking:

- Amendments to the report with respect to the Description of the Undertaking, specific discussion of the evaluation of the Do Nothing alternative, and other minor clarifications on the EA.
- Revised waste generation and diversion projections.
- Additional information on the air environment.
- Additional information on the noise environment.

## **2.0 PROPOSED AMENDMENTS TO THE EA REPORT**

### **2.1 GENERAL**

The following Sections present a summary of respective amendments to the EA submitted on May 4, 2007, in consideration of revocation, replacement, and insertion of specific sections.

### **2.2 AMENDMENTS TO EA SUBMISSION REQUIREMENTS**

**Revoke:**

**Table 1 Fulfillment of EAA Requirements in the WMSP**

**Replace with:**

**Table 1 (Revised) Fulfillment of EAA Requirements in the WMSP**

Table 1 (Revised) is attached to this Addendum with corrections to the dates associated with Sections 6.1 (1), 6.1 (2), and 6.2 (1), of the EA, to reflect actual dates corresponding to the draft EA submission (November 6, 2007), and the final EA submission on May 4, 2007.

### **2.3 AMENDMENTS TO POPULATION AND WASTE GENERATION ESTIMATES**

The following section presents a summary of amendments to Section 2.2 of the EA with respect to projections of future waste management needs within the Township, where appropriate. Table 3 (Revised), Table 4 (Revised), and Table 5 (Revised) of the EA (May 4, 2007) are provided for additional clarification and reference purposes.

**Revoke:**

**Section 2.2 Projections of Future Waste Management Needs**

**Replace with:**

**Section 2.2 Projections of Future Waste Management Needs**

Although the Township's current waste diversion rates are strong, residual waste generation from within the Township must be accounted for and appropriately managed.

Consistent with the approach presented in the *Terms of Reference* (ToR; Appendix I - A), estimations of waste generated in the Township have been calculated based on industry accepted principles, OMOE guidelines, and annual assessments of waste disposal and diversion. Updated estimations have been provided in the attached Table 3 (Revised), Table 4 (Revised), and Table 5 (Revised).

The population figures obtained for 2006 are slightly increased (as expected) from the 2003 permanent population noted in the ToR (SGS, 2004a); however, the population within the Township appears to be decreasing based on 2006 StatsCan information. Population growth is not expected to continually decline, however, during the 25-year planning horizon, therefore, a conservative 0.3 % per annum population growth factor was used for projected population and waste generation rates (Table 4 [Revised]).

As evidenced in Table 3 (Revised), the Township experiences a significant influx of seasonal residents (approximately 41% based on Township records), which can be attributed to the increasing development of waterfront (seasonal residences), and the Township's tourism-based economy during the peak summer season. A revised equivalent population has been provided, in consideration of updated Township records which indicate a 41% increase in seasonal population in summer months based on the influx of seasonal residents to the Township. This number is slightly decreased from the seasonal population increase estimates (nearing 50%) presented in the ToR (SGS Lakefield Research Limited [SGS], 2004). The seasonal population as presented in the EA was calculated using the seasonal population in the ToR and a 0.3% per annum population growth rate within the Township (1996-2001; StatsCan). Updated population estimates (equivalent and seasonal) have been provided in the attached Table 3 (Revised), Table 4 (Revised), and Table 5 (Revised) for clarification and reference purposes.

The attached Table 3 (Revised), Table 4 (Revised), and Table 5 (Revised) represent a long-term waste management scenario with respect to waste generation and diversion rates within the Township with a successive increase in diversion from 35 to 50%, based on the Township's waste management goals and reasonable expectations for small, rural municipalities. Although the total amount of waste disposal volume required is slightly less than that projected in the ToR, the EA has considered volumes for a capacity expansion with a 150,000 m<sup>3</sup> volume target. The basis for this is poor historical compaction and covering operations, and anticipated population growth (and corresponding waste generation) in the future. The values presented in the ToR and Table 3 (Revised), Table 4 (Revised), and Table 5 (Revised) as attached to this report, consider good planning practices in consideration of the municipality and the region.

The WMSP has considered all forms of non-hazardous, municipal solid waste generated within the municipality in this EA, including, but not limited to:

- Domestic waste.
- Institutional, Commercial, and Industrial (IC&I) sector waste.
- Construction and demolition (C&D) waste, including disaster waste materials (fire, tornado, etc.).
- Biosolids (solid, per Ontario Regulation 347).
- Other municipal solid wastes that may be generated within the Township.

## **2.4 AMENDMENTS TO THE DESCRIPTION OF THE UNDERTAKING (RATIONALE)**

The following section presents a summary of amendments to Section 2.3 of the EA with respect to the proposed “Description of the Undertaking”, per OMOE EAAB (Project Coordination Section) comments dated June 25, 2007 (Appendix A).

### **Revoke:**

#### **Section 2.3 Description of the Undertaking**

### **Replace with:**

#### **Section 2.3 Description of the Rationale for the Waste Management Strategic Plan**

The information summarized in Sections 2.1 and 2.2 demonstrates the rationale or need for the WMSP undertaking. In order for the Township to responsibly manage solid waste generated by the municipality, a long-term solution is clearly necessary, to ensure this service is provided to ratepayers in a safe and sustainable manner.

The Township of Madawaska Valley Waste Management Strategic Plan is a long-term waste management planning undertaking to identify a waste management solution that is:

- sustainable for a small, rural municipality in the long-term;
- economically feasible;
- minimizes potential impacts to the environment; and,
- considers public opinion.

The following Sections of this report present in detail the development of the WMSP (the undertaking) with the above aspects in focus.

## 2.5 AMENDMENTS TO THE AIR ENVIRONMENT

This Section presents a summary of amendments to Section 3.1.1 and Section 5.3.2.1.1 of the EA with additional information pertaining to the natural air environment within the Township, and additional site specific air quality information pertaining to the Township's Bark Lake waste disposal site per correspondence with the OMOE Technical Support Section (TSS) for Air. The amendments to the EA with respect to the air environment are as follows:

### **Revoke:**

#### **Section 3.1.1 Air**

### **Replace with:**

#### **Section 3.1.1 Air**

Daily climate data was obtained from the Environment Canada internet site for weather stations in Combermere and Madawaska. The data included daily average, minimum, and maximum temperature and precipitation values from years 1915 to 2004.

The Combermere weather station, located at a latitude and longitude of 45° 22' N and 77° 37' W, respectively, is the weather station that provides representative (local) data for the Township.

The average daily temperature in the Township ranges from approximately -18.3°C in January to approximately 25.3°C in July. The average temperature throughout the year is approximately 4.6°C (Environment Canada, 2006).

The average annual precipitation in the Township is approximately 869.2 millimetres (mm). The average annual rainfall amount in the Township is approximately 662.1 mm and the annual snowfall amount is approximately 2072 mm (Environment Canada, 2006).

The closest weather station for which wind data is available is the Ottawa MacDonald-Cartier International Airport, located at a latitude and longitude of 45° 19' N and 75° 40' W, respectively. The average wind speed recorded is approximately 12.9 kilometres per hour (km/hr). The most frequent wind direction is southerly from May until October and westerly for the remainder of the year (Environment Canada, 2006).

The Petawawa weather station, located at a latitude and longitude of 45° 54' N and 77° 17' W, respectively, is the closest facility to the Township of Madawaska Valley for which historical Air Quality Index (AQI) data is

available. The AQI provides an indicator of air quality, based on hourly pollutant measurements of some or all of the six (6) most common air pollutants (sulphur dioxide, ozone, nitrogen dioxide, total reduced sulphur compounds, carbon monoxide, and fine particulate matter; Air Quality Ontario, 2007).

The following is the list of Air Quality Index Categories:

| <b>AQI</b> | <b>AQI Rating</b> |
|------------|-------------------|
| 0 – 15     | Very Good         |
| 16 – 31    | Good              |
| 32 – 49    | Moderate          |
| 50 – 99    | Poor              |
| 100+       | Very Poor         |

The average AQI recorded at the Petawawa weather station between May 1 and July 15, 2007 was assigned a rating of good, based on an average numerical value of 24.6. Historical data was not available at the Petawawa weather station prior to 2007.

Based on available data, there have only been three (3) reported smog advisories to date in 2007 (as of July 11, 2007), similar to the three (3) reported advisories for 2006, for the Renfrew-Pembroke-Barry's Bay air quality forecast region (Air Quality Ontario, 2007).

There are no large industrial sites, manufacturing facilities, or commercial institutions within the Township that are contributing significant amounts of airborne contaminants to the atmosphere, and as such air quality in the Township appears to be of overall good quality.

**Revoke:**

**Section 5.3.2.1.1 Natural Environment – Air Quality** (pertinent air quality sub-section only)

**Replace with:**

**Section 5.3.2.1.1 Natural Environment**

*Air Quality*

Ambient air quality at the Bark Lake waste disposal site is consistent with other small rural landfills. Historically there have been no reported complaints with respect to air quality issues such as nuisance

odour, landfill gas generation, and fugitive emissions from on-site vehicular traffic (heavy equipment and personal vehicles attending the site).

Landfill gas generation is not presently monitored at the Bark Lake site; however, generation and lateral movement of landfill gas is not considered to be of significance given the permeability of the overburden soils (typically dominated by layers of sand, silty sand, and sands and gravel; Chapman and Putnam, 1984), and the generally shallow depth to the groundwater table.

Nuisance odour is similarly not considered to be an issue at the Bark Lake site, given that there have been no historically reported odour-related complaints to date, and the extended distance to the nearest adjacent residential dwelling (approximately 500 m), and the distance to the nearest traffic corridor (approximately 120 m; Figure 7).

Fugitive air emissions currently present on-site consist primarily of particulate matter (road dust) emissions from vehicular traffic. Historically, fugitive emissions resulting from on-site vehicular traffic at the Bark Lake site have been reported to the MOE annually in accordance with Ontario Regulation 127/01, to which all parameters were recorded below MOE reporting thresholds. Based on the revised *“Step-by-Step Guideline for Emission Calculation, Record Keeping and Reporting for Airborne Contaminant Discharge”* issued in February 2006 (MOE), and the reporting criteria presented therein, the Township’s Bark Lake waste disposal site is no longer required to report fugitive air emissions. Despite the Township’s non-requirement to report fugitive emissions, the Township manages road dust via regular road maintenance activities (grading, road watering, etc.), as necessary.

The Bark Lake site is generally isolated, with the nearest dwelling (permanent and/or seasonal) being approximately 500 m south of the site (Figure 7). The extended distance to this dwelling limits the potential for air quality issues derived from the landfill site. There are no other potential receptors with respect to air quality issues at the site, with the exception of traffic on the adjacent Provincial Highway 60 corridor; however, air quality impacts to mobile vehicular traffic are expected to be minimal.

An assessment of potential air quality issues with respect to the conceptual expansion of the Bark Lake site was provided in the report entitled *Feasibility Study for the Expansion of the Bark Lake Landfill* (Azimuth, 2005; Appendix I – D). The conclusions of the assessment are as follows:

- Odour is not considered to be an issue at the site given the extended buffer distance between the landfill and nearby land users (Azimuth, 2005; Appendix I - D).

- Lateral landfill gas migration at the site is limited by the permeability of the overburden soils, and by the shallow groundwater table (Azimuth, 2005; Appendix I - D).
- Noise and dust impacts as result of landfilling activities would have no significant bearing on the adjacent surroundings given the isolated location of the site from traffic corridors and residential developments (Azimuth, 2005; Appendix I - D).

The potential expansion of the Bark Lake waste disposal site per the conceptual design (Azimuth, 2005; Appendix I - D), does not present any significant concerns with respect to air quality at, or adjacent to, the Bark Lake site.

## **2.6 AMENDMENTS TO THE NOISE ENVIRONMENT**

This Section presents a summary of additional information on the noise environment to be inserted into Section 5.3.2.1.1 of the EA following the sub-section pertaining to the air environment at the Bark Lake waste disposal site. The additional noise information is provided per OMOE EAAB (Air and Noise Unit) comments on the EA dated June 13, 2007 (Appendix A). The additional information with respect to the noise environment at the Bark Lake waste disposal site is as follows:

### **Insert:**

#### **Section 5.3.2.1.1 Natural Environment – Noise (To Follow *Air Quality*)**

Ambient noise conditions at the Bark Lake waste disposal site are consistent with other small rural landfills. Historically there have been no reported complaints with respect to nuisance noise issues such as on-site mobile equipment operation (i.e. landfill compactor), on-site stationary compactor operation, on-site vehicular traffic, and vehicular noise during transport of waste on the designated haul-route (Provincial Highway 60).

The nearest potential points of reception for noise resulting from activities at the Bark Lake site are one (1) dwelling (permanent or seasonal) located approximately 500 m south of the waste mound, with the next closest dwelling (permanent or seasonal) located approximately 800 m south of the site, both of which are accessed from Cameron Track Road (Figure 7). These properties are located approximately 300 m and 600 m respectively, to the south of Provincial Highway 60, which is the primary access point and haulage route for vehicular traffic associated with the site. Other potential points of reception, by definition in the MOE's *Noise Guidelines for Landfill Sites* (OMOE, 1998), are all buildings located within close proximity to Provincial Highway 60 that have the potential to be influenced from landfill site haulage activities.

The closest dwelling to the site is located on zoned property designated as “rural” (RU), of which the northern boundary extends towards the site on the west side of Bell’s Bay of Bark Lake (Figure 10). Similarly, property with a zoning designation of “Limited Service Residential” (LSR) extends towards the Bark Lake site on the east side of Bell’s Bay of Bark Lake. Future development of portions of the subject properties noted above, that extends to within 500 m of the Bark Lake waste disposal site is subject to *MOE Guideline D-4: Land Use On or Near Landfills and Dumps* (OMOE, 1994).

On-site vehicular equipment includes a Caterpillar 816 B landfill compactor which is used for compaction and grading of the waste mound, a CASE W20C front-end wheel-loader which is used for cover material application, and a John Deere 650G tracked bulldozer for support as necessary to maintain slopes, grade the waste mound, and apply cover, in accordance with the PC of A.

Grading and compaction of the waste mound occurs during non-operational site hours, upon closure of the site on operating days. Waste grading, compaction, and covering typically requires approximately three (3) hours to complete, and occurs approximately six (6) times per week in accordance with the normal site operating days as presented below:

**Bark Lake Site Operational Hours (Year Round)**

|                |                        |
|----------------|------------------------|
| Holiday Monday | 7:30 a.m. – 4:30 p.m   |
| Monday         | 7:30 a.m. – 1:00 p.m   |
| Tuesday        | 7:30 a.m – 12:00 p.m   |
| Wednesday      | Closed                 |
| Thursday       | 12:00 p.m. – 4:30 p.m. |
| Friday         | 7:30 a.m. – 4:30 p.m.  |
| Saturday       | 7:30 a.m. – 4:30 p.m.  |
| Sunday         | 1:30 p.m. – 4:30 p.m.  |

The noise specifications for each piece of equipment during normal operation are as follows:

- *Caterpillar 816B Landfill Compactor* – Exterior sound pressure level during standard machine operation as measured at a distance of 15 m is approximately 80 decibels (dB); however, the significant buffer distance (forested lands) between the site and the nearest point of reception provides for conditions of minimal impact.
- *CASE W20C Wheeled-Loader (Front-end)* – Available sound data suggests an interior (inside the operator’s cab) sound pressure level during standard machine operation of approximately 70 dB. The

exterior sound pressure level is expected to be slightly increased; however, the significant buffer distance (forested lands) between the site and the nearest point of reception provides for conditions of minimal impact.

- *John Deere 650G Tracked Bulldozer* – Exterior sound pressure levels recorded on similar equipment during standard machine operation are approximately 105 dB in close proximity to the equipment; however, the significant buffer distance (forested lands) between the site and the nearest point of reception provides for conditions of minimal impact.

Based on the waste grading and compaction requirements of the site and the on-site equipment as presented above, the worst-case scenario for sound emissions would be for all three (3) pieces of equipment to be operating simultaneously for approximately 18 hours per week. More realistic operating conditions are represented with approximately 18 hours per week of operation of the landfill compactor (Caterpillar 816 B), approximately 12 hours per week of operation of the wheeled-loader (front-end; CASE W20C), and infrequent operation of the tracked bulldozer (John Deere 650G), all of which occur during non-operational site hours.

One (1) stationary cardboard compactor is also located on-site, which operates on an as-needed basis (upon reaching hopper capacity), estimated under maximum operating conditions to be twice daily for a period of approximately 15 minutes in duration during each operating cycle. Sound emission levels from the stationary cardboard compactor on-site are minimal given the limited operation time, and the extended distance to the nearest potential receptors.

The adjacent Provincial Highway 60 (haulage route) provides access to the site for municipal vehicles transporting waste from the Township's Radcliffe and Wilno waste transfer stations, as well as residential traffic accessing the site for disposal purposes. Waste is transported to the Bark Lake site from each waste transfer station at the end of each operating day, amounting to approximately five (5) trips per week. The current volume of vehicle traffic (municipal and otherwise) utilizing the designated haulage route (Provincial Highway 60) is not significant, in consideration of normal daily traffic volumes, is not considered to be having negative impacts on identified points of reception adjacent to the highway corridor.

There are currently no control devices utilized at the site for vector/vermin management that may impact points of reception with respect to nuisance noise.

The Bark Lake site is surrounded by forested lands to the north, east, south, and west, which provide favorable conditions for sound buffering. This, coupled with the fact that waste disposal equipment

operations, as well as vehicular traffic usage of the Bark Lake site are not anticipated to increase markedly under conditions of the proposed expansion of the site (consistent fill rate), indicates that the proposed conceptual design does not present any significant concerns with respect to noise at, or adjacent to, the Bark Lake waste disposal site.

## **2.7 AMENDMENTS TO THE DO NOTHING “ALTERNATIVE METHOD”**

The following section presents additional information regarding the Do Nothing “Alternative Method” for clarification purposes. The additional information is to amend Section 5.3.4 of the EA, per OMOE EAAB (Project Coordination Section) comments dated June 25, 2007 (Appendix A).

### **Revoke:**

#### **Section 5.3.4 Do Nothing**

### **Replace with:**

#### **Section 5.3.4 Do Nothing**

The Do Nothing “Alternative To” was maintained on a control basis, whereby the anticipated results of doing nothing with respect to waste management in the Township over the next 25 years would be compared to a proactive “Preferred Alternative”. No detailed studies with respect to the Do Nothing “Alternative To” were undertaken; however, consideration of this alternative with respect to each of the detailed screening criteria (natural, socio-cultural, technical and built, economic, and other) was undertaken.

The Do Nothing “Alternative To” would provide for unsuitable waste management operations within the Township following utilization of all available disposal capacity within the Township. With no alternative option in place for waste disposal (i.e. export, incineration, etc.), residents would be subject to unregulated waste disposal within the Township, which would likely lead to illegal dumping/disposal practices that would have a direct impact on public health and the environment.

With unregulated Township-wide waste management, residents would be more apt to dispose of waste through illegal backyard burning, along rural roads, and in sensitive natural areas (i.e. wetlands) with significant environmental implications. Fugitive waste disposal would provide for conditions of potential groundwater and surface water contamination, air and soil contamination, and anticipated impairment to local biological and ecological functions.

The socio-cultural environment would exhibit characteristics lacking of long-term waste management planning, and significant alterations to the aesthetic (visual) environment through illegal dumping within the Township, under conditions of the Do Nothing “Alternative To”. Illegal dumping would likely result in the creation of non-registered, unlicensed, and illegal landfills throughout the Township. These sites would not be regulated by the OMOE thereby making land use planning and developing initiatives difficult and complex.

The technical and built environment (i.e. infrastructure, roads, highways, municipal buildings, etc.) would be influenced by anticipated decreased aesthetic impacts, and the potential disruptions of infrastructure (i.e. water and sewer, etc.) with unregulated disposal of waste. The Do Nothing “Alternative To” would present unfavorable circumstances for the natural, socio-cultural, and technical and built environments, all at an unknown, but expected significant, economic cost.

The lack of a waste management system as part of the Do Nothing “Alternative To” would be detrimental to long-term waste management planning within the Township, would lack the support of public opinion, would provide a poor service provision level, and would provide significant risk and vulnerability to the environment.

## **2.8 AMENDMENTS TO EVALUATION MATRIX DATA TABULATION – SECTION 6.1.4**

This Section presents a revised Section 6.1.4 – Evaluation Matrix Data Tabulation, complete with proper citations and references, for clarification purposes.

### **Revoke:**

#### **Section 6.1.4 Evaluation Matrix Data Tabulation**

### **Replace with:**

#### **Section 6.1.4 Evaluation Matrix Data Tabulation**

To determine the “Preferred Alternative” for the WMSP, the weighted screening criterion for each “Alternative Method” was assigned a ranking score as described in Section 6.1.3, and each resultant ranking score was multiplied by the weighting for that respective criterion and then summed. As the Township’s objective for the WMSP was to determine the “best solution” for long-term waste management for the Township, the “Alternative Method” with the highest total score was considered to be the best candidate for the “Preferred Alternative” for the WMSP.

## **2.9 AMENDMENTS TO THE “PREFERRED ALTERNATIVE” (DESCRIPTION OF THE UNDERTAKING)**

This Section presents additional information regarding the “Preferred Alternative” for definition and clarification purposes. The additional information is to amend Section 6.3 of the EA, per OMOE EAAB (Project Coordination Section) comments dated June 25, 2007 (Appendix A).

### **Revoke:**

#### **Section 6.3 The “Preferred Alternative”**

### **Replace with:**

#### **Section 6.3 Description of the Undertaking - The “Preferred Alternative”**

Based on the results of the comparative evaluation presented, the detailed costing assessments completed for each “Alternative To” and “Alternative Method”, background information review and analysis, and comprehensive technical studies, the recommended “Preferred Alternative” for the management of solid waste generated within the Township is as follows:

- The implementation of a recommended diversion strategy, with the objective to increase the Township’s existing diversion program over the 25-year planning period through promotion and education, a mandatory recycling by-law including a continued user-pay system and bag limits, expanded curbside collection limits, and a supported backyard composting program will compliment the Township’s “Preferred Alternative”, as economically feasible. It is anticipated that this waste diversion strategy will increase the Township’s waste diversion rate by over 20% in an effort to meet the OMOE diversion target of 60%.
- The capacity expansion of the existing Bark Lake waste disposal site with transfer stations at the current Radcliffe and Wilno waste disposal sites. Consistent with waste management needs projected in the ToR, the conceptual design expansion of the Bark Lake site includes an additional 150,000 m<sup>3</sup> of capacity, an expanded approved waste disposal area totalling 2.3 ha extending primarily to the southeast of the current landfill area (Azimuth, 2005), and acquisition of sufficient additional lands for the purpose of the landfill area, operation buffer, and contaminant attenuation zone. The conceptual design footprint is contained within one local watershed zone at the site, and is based on natural attenuation of leachate principles, to which the Township is acquiring additional lands at the site. Future characteristics of leachate derived from the landfill are not expected to increase as result of the

proposed expansion, and are expected to remain similar to current leachate characteristics provided waste generation rates within the Township, and as received at the site, remain the same. As such, collection and treatment of leachate at the site were not warranted as part of the conceptual expansion design. However, as a future contingency measure associated with the potential expansion of the Bark Lake site is the consideration for future controls such as engineered leachate management systems/facilities, and available treatment capacity including the Barry's Bay Wastewater Treatment Plant, located in the Township's urban centre of Barry's Bay. Future study and detailed contingency planning in this regard would be investigated during future detailed site design and approvals stages, upon approval of the WMSP EA.

Through the comprehensive public consultation process integrated into the WMSP, significant support of respondents from Public Consultation Event No. 4 for the proposed waste diversion concepts was evident, and 64% of respondents agreed with the expansion of the Bark Lake waste disposal site for the WMSP "Preferred Alternative".

The balance of this EA Report will summarize the assessment of the potential effects of the "Preferred Alternative" on the natural, socio-cultural, technical/built, and economic environments, as presented in Section 5.3.2.1

## **2.10 AMENDMENTS TO THE POTENTIAL ENVIRONMENTAL EFFECTS OF THE "PREFERRED ALTERNATIVE"**

This Sections presents additional information and amendments pertaining to specific sub-sections of Section 7.0 – Potential Environmental Effects of the "Preferred Alternative", which is referred to in this Addendum (amended Section 6.3) as the Description of the Undertaking – The "Preferred Alternative", for clarification purposes. The additional information and amendments to Section 7.0 of the EA are provided per OMOE EAAB (Project Coordination Section) comments dated June 25, 2007 (Appendix A).

### **Revoke:**

**Section 7.0** (only - retain Section 7.1 and beyond)

### **Replace with:**

**Section 7.0 Potential Environmental Effects of the "Preferred Alternative"**

A comparative assessment of the alternative methods carried forward as candidates for the “Preferred Alternative” for the WMSP was presented in Section 5.3. The results of the detailed comparative evaluation, complete with the identification of the “Preferred Alternative” for the Township’s WMSP, were summarized in Section 6.0.

In general, the “Preferred Alternative” identified enhancements or upgrades to the current waste diversion program, and a capacity expansion of the Township’s Bark Lake waste disposal site with waste transfer stations to operate at the Township’s Wilno and Radcliffe sites to properly manage residuals not diverted from the proposed enhancements to diversion efforts in the municipality.

This section assesses potential effects on the environment of the “Preferred Alternative” that may reasonably be expected to occur. For the diversion aspects of the “Preferred Alternative”, there are no adverse impacts anticipated, with increased diversion of waste materials from disposal, and enhanced waste and recycling service to ratepayers, benefiting the public and the environment overall. In addition, the continuation of waste transfer operations for the Wilno and Combermere areas (as per existing operations) have been proposed as part of the “Preferred Alternative”. In essence, the continued waste transfer operations in these areas is not considered to have an adverse impact on the environment – continued service to the ratepayers in these areas has been supported by the public throughout the WMSP.

A conceptual design of the expanded landfilling area for the Bark Lake site is presented in *Feasibility Study for the Potential Expansion of the Bark Lake Landfill*, Azimuth Environmental Consulting, Inc., September 2005 (Appendix I - D). The key conceptual design concepts presented include:

- An estimated expansion volume (preliminary) of 150,000 cubic metres of waste materials in addition to an existing volume of approximately 36,000 cubic metres.
- The conceptual expansion area would be increased from the current area of 1.15 hectares (per January 2007 emergency PC of A amendment) to an estimated (conceptual) 2.3 ha (Figure 6), within one local watershed zone, with maintained operations as a natural attenuation site.
- Acquisition of additional lands sufficient for the purposes of the landfill area, operational buffer, and CAZ for the proposed expanded Bark Lake waste disposal site.

The following Sections focus on the potential effects of the capacity expansion of the Bark Lake waste disposal site to service the residual waste disposal needs of the Township on pertinent aspects of the natural, socio-cultural, technical/built, and economic environments.

**Revoke:**

**Section 7.1.2 Surface Water Systems and Quality**

**Replace with:**

**Section 7.1.2 Surface Water Systems and Quality**

Local topography (northern watershed) directs surface water flow in the area of the Bark Lake waste disposal site in the tributaries feeding Bark Lake from north to south, primarily the creek located to the west of the site.

Groundwater flow from the landfill area has been interpreted to flow westerly towards the Peters Marsh Creek tributary (SGS, 2006a; Greenview, 2007; Appendix I - C), and is understood to discharge into this creek along its length, as supported by recent temperature profiling (SES, 2006b). A component of groundwater flow is also interpreted to flow towards the southwest, in the direction of Bell's Bay of Bark Lake (SGS, 2006a; Greenview, 2007; Appendix I – C). Additional information with respect to the groundwater environment at the proposed downgradient southwestern CAZ boundary is provided in Section 7.1.1.

An annual assessment of surface water quality in the creek adjacent to the site, to which groundwater is interpreted to discharge, is completed by a surface water trigger mechanism instituted to monitor water quality degradation. There were no recorded trigger exceedances in 2005, indicating that current waste disposal operations are not impacting the surface water quality in the Peters Marsh Creek tributary.

The results of dissolved oxygen monitoring completed during the 2006 annual monitoring program, and the additional December 2006 monitoring event, exhibited elevated levels of dissolved oxygen, well above PWQO criteria, indicating that current landfill operations are not impacting the dissolved oxygen levels in the adjacent Peters Marsh Creek tributary.

The conceptual design for the expanded site (Azimuth, 2005) has proposed that the expanded landfill footprint be maintained within the northern watershed. As a result, surface water flow direction would be maintained to the west toward Peters Marsh. An assessment of projected surface water quality as a result of expanded site conditions does not suggest any increased potential for surface water impacts either direct or from groundwater (leachate) discharge, due to minimal anticipated change in landfilling rates over the study period, and increasing efforts for site operations and surface water management.

***Impacts from the proposed capacity expansion of the Bark Lake waste disposal site to surface water systems and quality at or near the site are anticipated to be minimal.***

**Revoke:**

**Section 7.1.4 Air Quality**

**Replace with:**

**Section 7.1.4 Air Quality**

Ambient air quality at the Bark Lake waste disposal site is consistent with other small rural municipal landfills, and is described as follows:

- Landfill gas generation is not presently monitored at the Bark Lake site; however, generation and lateral movement of landfill gas is not considered to be of significance given the permeability of the overburden soils, and the generally shallow depth to the groundwater table.
- Nuisance odour is not considered to be of significant concern, given the extended distance to the nearest traffic corridor and adjacent residential dwelling (approximately 500 m; Figure 7).
- Fugitive emissions currently present on-site consist primarily of particulate matter emissions from vehicular traffic, to which all parameters have historically been recorded below MOE reporting thresholds in accordance with Ontario Regulation 127/01.
- The Bark Lake site is generally isolated, with the nearest dwelling (permanent and/or seasonal) being approximately 500 m south of the site. The extended distance to this dwelling limits the potential for air quality issues derived from the landfill site. There are no other potential receptors with respect to air quality issues at the site, with the exception of local traffic on the adjacent Provincial Highway 60 corridor; however, air quality impacts to mobile vehicular traffic are expected to be minimal.
- Historically there have been no reported complaints with respect to nuisance odour, landfill gas generation, and/or fugitive emissions from vehicular traffic at the site.

An assessment of potential air quality issues with respect to the conceptual expansion of the Bark Lake site was provided in the report entitled *Feasibility Study for the Expansion of the Bark Lake Landfill* (Azimuth, 2005; Appendix I - D). The results of the air quality assessment are as follows:

- Odour is not considered to be an issue at the site given the extended buffer distance between the landfill and nearby land uses (Azimuth, 2005; Appendix I - D).
- Lateral landfill gas migration at the site is limited by the permeability of the overburden soils, and by the shallow groundwater table (Azimuth, 2005; Appendix I - D).
- Noise and dust impacts as result of landfilling activities would have no significant bearing on the adjacent surroundings given the isolated location of the site from traffic corridors and residential developments (Azimuth, 2005; Appendix I - D).

As part of the implementation of the proposed undertaking, waste disposal operations at the site are expected to be maintained as current as part of the proposed expansion of the Bark Lake waste disposal site. Given that site operations and conditions including vehicular traffic, air emissions (landfill gas), fugitive emissions (dust), and nuisance odor, are not anticipated to change significantly upon implementation of the proposed undertaking, the air quality assessment completed to date has assessed potential impacts to air quality at, and adjacent to, the Bark Lake site. Contingency measures for air quality issues concerns will be detailed in future EPA-level applications, upon approval of the WMSP EA.

***Impacts from the potential capacity expansion of the Bark Lake waste disposal site to air quality at or near the site are anticipated to be minimal.***

**Insert:**

**Section 7.1.5 Noise**

Ambient noise conditions at the Bark Lake waste disposal site are consistent with other small rural landfills, and are described as follows:

- The nearest potential points of reception for noise are two (2) dwellings (permanent and/or seasonal) located approximately 500 m and 800 m south of the site, respectively (Figure 7), and approximately 300 m and 600 m respectively, south of Provincial Highway 60 which is the identified haulage route for the site.
- On-site vehicular equipment for grading and compaction of the waste mound is used each day the site is open following operational hours, for approximately three (3) hours per day. The duration and frequency of the exterior sound pressure levels from the on-site equipment are expected to be maintained under the proposed expansion conditions, and are adequately buffered by the forested lands between the site and the nearest potential points of reception.

- One (1) stationary cardboard compactor is also located on-site, which operates on an as-needed basis (upon reaching hopper capacity). Sound emission levels from the stationary cardboard compactor on-site are minimal given the limited operation time, and the extended distance to the nearest potential receptors. Given that the rate of waste received at the site is not anticipated to change markedly under proposed expansion conditions, sound emission levels from the stationary compactor are expected to remain constant with the proposed site expansion.
- The designated haulage route and access point for the site is Provincial Highway 60, located approximately 120 m south of the site. Provincial Highway 60 provides access to the site for municipal vehicles transporting waste from the Township's Radcliffe and Wilno waste transfer stations, as well as residential traffic accessing the site for disposal purposes. The current volume of vehicle traffic (municipal and otherwise) utilizing the designated haulage route (Provincial Highway 60) is not significant, in consideration of normal daily traffic volumes, is not considered to be having negative impacts on identified points of reception adjacent to the highway corridor.
- There are currently no control devices utilized at the site for vector/vermin management that may impact points of reception with respect to noise.
- Historically there have been no reported complaints with respect to nuisance noise issues from on-site equipment operation, on-site stationary compactor operation, on-site vehicular traffic, and vehicular noise during transport of waste on the designated haul-route (Provincial Highway 60).

The Bark Lake site is surrounded by forested lands to the north, east, south, and west, which provide suitable conditions for limited sound emission dispersion. This, coupled with the fact that waste disposal equipment operations, as well as vehicular traffic usage of the Bark Lake site are not anticipated to increase markedly under conditions of the proposed expansion of the site, indicates that the proposed conceptual design does not present any significant concerns with respect to noise at, or adjacent to, the Bark Lake site.

***Impacts from the potential capacity expansion of the Bark Lake waste disposal site to the existing noise environment at or near the site are anticipated to be minimal.***

***Insert:***

### **Section 7.5.1 Commitments**

Based on the results of the WMSP EA, the Township is committed to ensuring that all potential net effects of the proposed undertaking ("Preferred Alternative") would be monitored and be reported as part of the annual

monitoring program undertaken in accordance with the OMOE PC of A (as amended) for the site. Specific commitments with respect the “Preferred Alternative”, based on approval of the WMSP EA, are provided below for insertion into Section 7.0 of the EA, immediately following Section 7.4 and associated sub-sections:

- Geology, Hydrogeology, and Groundwater Quality

The Township of Madawaska Valley commits to ensuring that groundwater on and within the vicinity of the site meets MOE criteria, and commits to continue to monitor groundwater quality at the site via an established groundwater monitoring program. Sampling would take place consistent with the current monitoring program throughout the year, with further examination of sampling requirements at the site to be detailed as part of future EPA-level applications.

- Surface Water Systems and Quality

The Township of Madawaska Valley commits to ensuring that surface water on and within the vicinity of the site meets MOE criteria, and commits to continue to monitor surface water quality at the site via an established surface water monitoring program. Sampling would take place consistent with the current monitoring program throughout the year, with further examination of sampling requirements at the site to be detailed as part of future EPA-level applications.

- Biology / Ecology

The Township of Madawaska Valley commits to ensuring that biological features and conditions on and adjacent to the site will not be impaired by landfilling operations, and would develop mechanisms to investigate potential landfill-related impacts as part of future EPA-level applications.

- Air Quality

The Township of Madawaska Valley commits to ensuring that all issues / complaints regarding air quality or odour as a result of the proposed Bark Lake site expansion will be handled in a timely manner and a record kept of all complaints received, for inclusion in the annual monitoring report for the site. Air quality contingency plans would be investigated as part of future EPA-level applications.

- Noise

The Township of Madawaska Valley commits to ensuring that noise issues / complaints will be handled in a timely manner and a record kept of all complaints received, for inclusion in the annual monitoring report for the site. Additional contingency plans and provisions with respect to ensuring that noise levels are within regulatory guidelines at all times will be provided as part of future EPA-level applications.

- Aesthetic Impacts

The Township of Madawaska Valley commits to ensuring that all aesthetic impacts as a result of the proposed footprint expansion at the Bark Lake waste disposal site would be minimized, as possible, to maintain the natural aesthetics of the Township.

- Archaeology / Cultural Heritage

The Township of Madawaska Valley commits to including provisions that deal specifically with the discovery of any significant archeological and / or cultural heritage features in future EPA-level applications associated with the development of the site.

### **3.0 CONCLUSIONS**

This report has been prepared as an Addendum to the Township of Madawaska Valley's Waste Management Strategic Plan EA submitted to the OMOE on May 4, 2007, in accordance with Section 6.2 (1) of the EAA.

The purpose of this Addendum is to provide additional information and clarification on specific aspects of the EA deemed necessary by the OMOE during the public and government agency review period following the EA submission on May 4, 2007.

The Township respectfully requests that this information be reviewed and confirmed at the earliest possible date to maintain progress on the EA review for consideration by the Minister. The Township is committed to proceeding with the next phases of this project upon approval of the EA by the Minister.

## 4.0 REFERENCES

Azimuth Environmental Consulting Incorporated, 2006. *Feasibility Study for the Potential Expansion of the Bark Lake Landfill*. September 2005.

Chapman, L.J. and Putnam, D.F. 1984. *The Physiography of Southern Ontario*. 3<sup>rd</sup> Edition. Ontario Geological Survey, Special Volume 2. 270 pp.

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Statistics Canada, 2006. "2006 Community Profiles". [http://www12.statcan.ca/english/census06/data/profiles/community/Search/SearchForm\\_Results.cfm?Lang=E](http://www12.statcan.ca/english/census06/data/profiles/community/Search/SearchForm_Results.cfm?Lang=E). July 18, 2007.

## **TABLES**

**Table 1 (Revised) Fulfillment of EAA Requirements in the WMSP**

| <b>EAA Requirement</b> | <b>Description</b>  | <b>Date of Completion</b>                           |
|------------------------|---|---|
| <i>Section 6 (1)</i>   | Preparation of ToR for the WMSP                                   | June 2004, amended September 2004                   |
| <i>Section 6 (4)</i>   | Approval of ToR by Ontario Minister of the Environment            | November 2004                                       |
| <i>Section 6.1 (1)</i> | Preparation of Draft EA (WMSP) in accordance with the ToR         | November 2006                                       |
| <i>Section 6.1 (2)</i> | The EA (WMSP) shall consist of specific components                | Forms this EA Report, May 2007                      |
| <i>Section 6.2 (1)</i> | The Proponent shall submit the EA (WMSP) to the OMOE for approval | This Report forms part of the application, May 2007 |

**Table 3 (Revised) Projected Population Change to 2032**

| Item  | Estimated Value               |
|---|-------------------------------|
| Permanent Population ( $P_p$ , 2006, StatsCan, 2006 Census) | 4,381                         |
| Seasonal Population <sup>1</sup> ( $P_s$ , 2006)            | 1,796                         |
| Equivalent Population <sup>2</sup> ( $P_{eq}$ , 2006)       | 4,830                         |
| Population Growth (2001 - 2006, StatsCan, 2006 Census)      | - 0.6 %                       |
| Projected Equivalent Population in Year 2032 <sup>3</sup>   | 5,221                         |
| Change in Population as of Year 2032                        | 391 persons or 8.1 % increase |

Notes:

- 1 Seasonal population based on Township records of a 41% seasonal influx of seasonal residents in the summer months (assumed constant over the 25-year planning period).
- 2 Equivalent Population calculated using,  $P_{eq} = 9/12 P_p + 3/12 (P_p + P_s)$ , representative of a 3-month summer season, and corresponding seasonal population influx.
- 3 Projected Equivalent Population in Year 2032 based on historical population increase of 1.5% per five-years (0.3% per annum; 1996-2001, StatsCan, 2001 Census) to account for expected future population increase, despite the reported -0.6% decline in population reported between years 2001-2006 (StatsCan, 2006 Census).

**Table 4 (Revised) Projected Waste Generation Rate to 2032 (Increasing Diversion Rate of 35-50%)**

| Item  | Estimated Value <sup>1</sup><br>(tonnes) | Estimated Value <sup>2</sup><br>(m <sup>3</sup> ) |
|---|--|---|
| Current Waste Generation Rate (2006)                      | 1,763                                    | 4,407   |
| Projected Waste Generation Rate in Year 2032              | 1,636                                    | 4,090   |
| Projected Fill Rate in Year 2032 <sup>3</sup>             | 1,823                                    | 4,908   |
| Cumulative Waste Generation (2032) <sup>4</sup>           | 41,401                                   | 103,502   |
| Cumulative Waste Requiring Management (2032) <sup>5</sup> | 46,132                                   | 124,202   |

Notes:

- 1 Waste generation (current and cumulative), and fill rates based on estimated population and generally accepted waste disposal rate of 1.0 kg/person/day (with future rates discounted to include additional diversion efforts).
- 2 Waste generation (current and cumulative), and fill rates converted to a volume based on an assumed landfill waste density of 400 kg/m<sup>3</sup>.
- 3 Projected fill rate based on Projected Waste Generation Rate in Year 2032 including an additional 20% (assumed) volume increase for waste cover application during landfill operations.
- 4 Cumulative waste generation (2032) based on estimated population and generally accepted waste disposal rate of 1.0 kg/person/day (with future rates discounted to include additional diversion efforts), from 2007 to 2032.
- 5 Cumulative waste disposed (2032) includes a cumulative additional 20% (assumed) volume increase for waste cover application during landfill operations, from 2007 to 2032.

**Table 5 (Revised) Population and Waste Generation Data Projections (Increasing Diversion Rate of 35-50%)**

| Year          | Estimated Equivalent Population | Estimated Waste Generation |                     | Estimated Diversion Rate | Total Estimated Fill Rate |                     |
|---------------|---------------------------------|----------------------------|---------------------|--------------------------|---------------------------|---------------------|
|               | (persons)                       | (tonnes/a)                 | (m <sup>3</sup> /a) | (%)                      | (tonnes/a)                | (m <sup>3</sup> /a) |
| 2006          | 4,830                           | 1,763                      | 4,407               | 35%                      | 1,964                     | 5,289               |
| 2007          | 4,845                           | 1,680                      | 4,200               | 40%                      | 1,872                     | 5,040               |
| 2008          | 4,859                           | 1,651                      | 4,128               | 42%                      | 1,840                     | 4,954               |
| 2009          | 4,874                           | 1,606                      | 4,016               | 45%                      | 1,790                     | 4,819               |
| 2010          | 4,888                           | 1,579                      | 3,948               | 47%                      | 1,760                     | 4,737               |
| 2011          | 4,903                           | 1,536                      | 3,841               | 50%                      | 1,712                     | 4,609               |
| 2012          | 4,918                           | 1,541                      | 3,852               | 50%                      | 1,717                     | 4,623               |
| 2013          | 4,932                           | 1,546                      | 3,864               | 50%                      | 1,722                     | 4,637               |
| 2014          | 4,947                           | 1,550                      | 3,875               | 50%                      | 1,727                     | 4,650               |
| 2015          | 4,962                           | 1,555                      | 3,887               | 50%                      | 1,732                     | 4,664               |
| 2016          | 4,977                           | 1,559                      | 3,899               | 50%                      | 1,738                     | 4,678               |
| 2017          | 4,992                           | 1,564                      | 3,910               | 50%                      | 1,743                     | 4,692               |
| 2018          | 5,007                           | 1,569                      | 3,922               | 50%                      | 1,748                     | 4,706               |
| 2019          | 5,022                           | 1,574                      | 3,934               | 50%                      | 1,753                     | 4,721               |
| 2020          | 5,037                           | 1,578                      | 3,946               | 50%                      | 1,759                     | 4,735               |
| 2021          | 5,052                           | 1,583                      | 3,957               | 50%                      | 1,764                     | 4,749               |
| 2022          | 5,067                           | 1,588                      | 3,969               | 50%                      | 1,769                     | 4,763               |
| 2023          | 5,082                           | 1,593                      | 3,981               | 50%                      | 1,775                     | 4,778               |
| 2024          | 5,098                           | 1,597                      | 3,993               | 50%                      | 1,780                     | 4,792               |
| 2025          | 5,113                           | 1,602                      | 4,005               | 50%                      | 1,785                     | 4,806               |
| 2026          | 5,128                           | 1,607                      | 4,017               | 50%                      | 1,791                     | 4,821               |
| 2027          | 5,144                           | 1,612                      | 4,029               | 50%                      | 1,796                     | 4,835               |
| 2028          | 5,159                           | 1,617                      | 4,041               | 50%                      | 1,801                     | 4,850               |
| 2029          | 5,175                           | 1,621                      | 4,053               | 50%                      | 1,807                     | 4,864               |
| 2030          | 5,190                           | 1,626                      | 4,066               | 50%                      | 1,812                     | 4,879               |
| 2031          | 5,206                           | 1,631                      | 4,078               | 50%                      | 1,818                     | 4,893               |
| 2032          | 5,221                           | 1,636                      | 4,090               | 50%                      | 1,823                     | 4,908               |
| <b>Totals</b> |                                 | <b>41,401</b>              | <b>103,502</b>      |                          | <b>46,132</b>             | <b>124,202</b>      |

Notes:

- 1 Waste generation (current and cumulative), and fill rates based on estimated population and generally accepted waste disposal rate of 1.0 kg/person/day (with future rates discounted to include additional diversion efforts).
- 2 Waste generation (current and cumulative), and fill rates converted to a volume based on an assumed landfill waste density of 400 kg/m<sup>3</sup>.

- 3 Projected fill rate based on Projected Waste Generation Rate in Year 2032 including an additional 20% (assumed) volume increase for waste cover application during landfill operations.
- 4 Cumulative waste generation (2032) based on estimated population and generally accepted waste disposal rate of 1.0 kg/person/day (with future rates discounted to include additional diversion efforts), from 2007 to 2032.
- 5 Cumulative waste disposed (2032) includes a cumulative additional 20% (assumed) volume increase for waste cover application during landfill operations, from 2007 to 2032.
- 6 Waste disposal rate of 1.0 kg/person/day was assumed to account for a 35% waste diversion rate, with increased waste diversion values (i.e. 40%) resulting in a <1.0 kg/person/day waste generation rate.

## **APPENDIX A**

### **Correspondence**

#### ***Agency Review Comments on the EA Report Constituting an Addendum to the EA***

**Ministry  
of the  
Environment**

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de  
l'Environnement**

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Environmental Assessment and Approvals Branch

June 25, 2007

**MEMORANDUM**

**TO:** Mr. Tyler Peters, P.Eng.  
Greenview Environmental Management  
69 Cleak Avenue, PO Box 100  
Bancroft ON K0L 1C0

**FROM:** Terri Rogers  
Project Officer

**RE:** Madawaska Valley Waste Management Strategic Plan Environmental Assessment  
EA FILE NO. EA-02-08-01

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Thank you for submitting the above referenced environmental assessment (EA) on May 4, 2007, to the Ministry of the Environment (MOE). I have conducted a thorough review of the EA (and supplementary technical volumes as appropriate), and have prepared the following comments for your consideration. Please note that additional comments have been provided to you by MOE's technical staff.

***Table 5 - Waste Generation Data Projections:***

While I recognize the Township's diversion efforts to date are very successful, I am concerned that a 50% diversion rate will be difficult to achieve within the next 3 or 4 years. Has the Township been able to meet the projected 2005 (35%) and 2006 (39%) diversion numbers? I would like to see the estimated waste generation numbers for a "worse case" scenario, keeping the diversion rate consistent with the existing one for the entire 25 year planning period. This will indicate the maximum expansion capacity required for that planning period, and the numbers provided in the EA will indicate the minimum additional capacity.

***Section 2.3 – Description of the Undertaking***

This section does not provide an actual description of the proposed undertaking (the expansion of the Bark Lake Landfill Site), but rather provides the purpose of the EA. As indicated in the approved ToR, the description of the undertaking is detailed and expanded at the EA stage. This

needs to be re-written, and a brief but clear description of the proposed undertaking needs to be provided.

Should the description of the undertaking also include the acquisition of 20 hectares of Crown Land needed for an adequate contaminant attenuation zone (CAZ)? The disposition/sale/transfer of Crown Land is subject to the Ministry of Natural Resources' *Class Environmental Assessment for Resource Stewardship and Facility Development* (Class EA). The requirements of the Class EA are superseded by the individual EA, and therefore the environmental considerations of that activity should be considered as part of this EA. Also, based on the review of our technical support staff, it is clear that the expansion of the landfill cannot proceed without this acquisition, and therefore the CAZ needs to be included in the undertaking. Please clarify whether this disposition is considered part of this undertaking (EA), or whether it is a process being followed separately for the current landfill operation.

#### ***Section 4.5 – Do Nothing Alternative***

The purpose of describing and studying the “do nothing” alternative is to provide an accurate picture of the current environment, including any potential impacts of the current waste management activities have had on the environment (all aspects of the broad definition). The analysis of the “do nothing” alternative is not meant to be evaluated as a viable option for future activities – but instead, it is used as a point of reference with which to compare the other alternatives.

Section 5.2.5 states that the “do nothing” alternative would be evaluated as a control. Although this alternative is scored in Table 13, there is no discussion in the EA to support this evaluation. The reader cannot logically arrive to the same conclusion as the author without this discussion. This discussion must be present for all alternatives that were evaluated.

#### ***Evaluation of Alternatives***

A primary requirement of an EA is for the document to clearly present the selection process in a transparent, clear and logical manner. Appendix 1-J is unacceptable. The font size is impossible to read, and the electronic format can not be formatted for easier printing. Please provide an appropriately sized version that will be included in the ministry's Review in order to provide the public with an opportunity to review the rationale.

#### **Comparative Evaluation Matrix**

The following comments refer to Appendix 1-J. Once a readable version of the matrix rationale is received, additional comments may be provided.

What is the justification for your analysis that both the expansion of the Bark Lake site (which requires an additional 20 ha of Crown Land to be used to attenuate contaminants), as well as the

development of a new site, will have “neutral” impacts to lands? The response provided is not adequate.

It is difficult to accept that there will be no impacts to the biological/ecological environments as a result of a 25 year expansion to the existing Bark Lake site. In addition to the contamination of an additional 20 ha of land, there is also the potential to impact surface water (as indicated in the matrix). Should impacts to surface waters occur, there will also be biological impacts. In the absence of biological monitoring (toxicity testing, bioaccumulation testing, benthic sampling, etc.), it is difficult to ascertain that biological/ecological impacts from the current site, and from the proposed expansion, are expected to be neutral.

### ***Section 7.0 Potential Environmental Effects***

Are these effects based on the Township acquiring the additional lands for CAZ? What would the effects be if the Township was unsuccessful in acquiring these lands?

### ***General Comments***

Where exactly is the existing leachate plume under current operating conditions? Where is the predicted plume (over 25 years of additional waste) going to be?

Although Peters Marsh is discussed in the text, it would be helpful to see it on a map in relation to the landfill site.

Figure 6 presents the groundwater flow direction, which appears to be flowing towards Bell’s Bay. Section 7.1.2 should provide an explanation to the reader in order to understand why impacts from landfill operations are/are not expected.

A list of commitments should be included in the EA.

What are the positive and negative impacts of the preferred alternative?

Section 6.1.4 refers (second line of paragraph) to “Section 0.” Please clarify.

Should you have any questions or require clarification on the above, please contact me at 416-314-7184 or by email at [terri.rogers@ontario.ca](mailto:terri.rogers@ontario.ca).

---

Terri Rogers

c: Pat Pilgrim, CAO/Clerk

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Environmental Assessment and Approvals Branch

June 13, 2007

Terri Rogers  
Project Officer, Project Coordination Section  
EAAB,MOE

RE: NOISE COMMENTS CONCERNING;  
ENVIRONMENTAL ASSESSMENT REPORT,  
MADAWASKA VALLEY WASTE MANAGEMENT STRATEGIC PLAN,  
TOWNSHIP OF MADAWASKA VALLEY  
COUNTY OF RENFREW, ONTARIO  
May 4, 2007

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Reviewed here were the noise-related aspects of the supplied document "Environmental Assessment Report, Madawaska Valley Waste Management Strategic Plan, Township Of Madawaska Valley, County Of Renfrew, Ontario" ("the EA"), dated May 4, 2007 and prepared by Greenview Environmental Management Limited ("the Consultant").

The reason for the EA is that the Township, as part of a long-term strategy to deal with solid waste, is seeking approval to increase the area and capacity of the existing Bark Lake landfill. It appears from supplied figures that the daily and yearly tonnage of the landfill will vary as the population of the Township, rather than undergoing an immediate increase in tonnage. Presumably the haul route traffic would follow the same pattern (although the issue of haul route traffic does not appear to have been specifically addressed in the EA). The landfill with its current approved area is operating at this time under an emergency Waste C of A.

According to Table No. 4 of the approved Terms of Reference document for this EA, noise was promised to be evaluated in the EA under the Air/Climate subsection of the "Natural" area. The sole statement given in EA Section 7.1, Natural Environment, Subsection 7.1.4 Air Quality, is "Noise and dust impacts as (sic) result of landfilling activities would have no significant bearing on the adjacent surroundings given the isolated location of the site from traffic corridors and residential developments". There was no supporting material supplied for this statement.

The expectation of EAAB noise reviewers is that a landfill EA will deal with noise as per the MOE document "Noise Guidelines for Landfill Sites, October 1998". Among the types of noise to be addressed are noise from landfilling operations (construction equipment in operation), ancillary facilities/stationary sources (such as grinders, crushers, compactors, building noise sources like fans, etc.), pest control devices and off-site (haul road) traffic. The "Required Information" listed in the document includes; Site Plans (Land Use Zoning, Area Wide Plan, Existing Features Plan and Operations Plan), Operation, Equipment and Facilities (including equipment descriptions with sound emission levels for landfilling equipment, stationary sources, audible pest control devices and off-site vehicles), Existing Noise Environment and Meteorological Conditions, and Noise Impact Assessment (including sound levels at points of

reception from background sound, landfilling operations, pest control devices, ancillary facilities/stationary sources, off-site vehicles and construction activities, as well as description of any mitigation measures). For the vast majority of these categories, no information has been provided in the EA about either the current operation, or any changes that might result if the expansion is approved.

A particular point of interest from “Noise Guidelines for Landfill Sites, October 1998” is the definition of “Point of Reception” ; “Point of Reception means a point on a premises of a person within 30m of a dwelling or a camping area, where sound or vibration originating from other than those premises is received. For the purpose of noise impact assessment of a proposed landfill operation, or an expansion to an existing landfill operation, the point of reception may be located on any of the following existing or zoned for future use premises: permanent or seasonal residences, hotels/motels, nursing/retirement homes, rental residences, hospitals, camp grounds, and noise sensitive buildings such as schools and places of worship”.

A Point of Reception under the above definition, not referenced as such in the EA, is found in Figure 10 of Volume 1 of the EA, which shows land zoned as “Limited Service Residential” as close as 100m from the highway entrance to the landfill site (as scaled from other maps and figures), and approximately 300m from the landfill area proper. This certainly falls within the requirement of the “Noise Guidelines for Landfills” to indicate Points of Reception within a 1000m minimum distance from the landfill site boundaries.

In an email exchange between the Consultant and this reviewer during the EA review, it was stated by the Consultant that

“As documented in the EA Report (Pg 51 and several other references, and clearly shown on Figure 7 of Volume I), the closest structure to the Bark Lake site are approximately 500 meters away. The use of this structure (residential? seasonal?) is unknown, and appears to be uninhabited during site visits. Other residential buildings nearest to the site are approximately 900 m away, off Cameron Track Road on Bell's Bay of Bark Lake (Figure 7). With regard to a haul route, Highway 60, the main travel corridor between Huntsville, Algonquin Park, through to Ottawa, is approximately 350 m from the unknown building identified above, and 700 m from the nearest residential buildings off Cameron Track Road.”

While the Bell's Bay residence may be 700m from the haul road, there are other unspecified buildings to the east along Highway 60 in close proximity to the road, and Figure 10 appears to indicate residential-zoned land less than 100m from Highway 60. Such Points of Reception would normally be assessed for off-site vehicle impact in the EA.

It should be noted that this reviewer issued comments on the Draft version of the EA in November 2006 which, although much more brief than these comments, did specifically reference “Noise Guidelines for Landfills” and the failure of the Draft EA to fulfill its requirements. The 2006 comments were reproduced in the current version of the EA, in Volume 2, “Tables” section, Table 2.

It has been pointed out by the Consultant in several places that there has not been a history of noise complaints regarding this site. Given that at least the footprint of the landfill operation, if not other factors, will be changing with the desired expansion, and that there is residential zoned land in relatively close proximity to the site, it is conceivable that future complaints could arise.

The MOE document “Noise Guidelines for Landfill Sites”, October 1998 should be the basis for the noise assessment of landfill sites.

The guidelines for stationary noise sources are MOE documents NPC-205 and NPC-232 as appropriate (for urban/suburban and rural sites respectively).

## CONCLUSIONS

- 1) The EA has not supplied the minimum amount of information regarding noise impact as required by MOE Document “Noise Guidelines for Landfills, October 1998”, even though this deficiency was pointed out regarding the 2006 Draft EA.
- 2) While this office recognises that the landfill has no current immediately adjoining neighbours, and that there are no outstanding noise complaints regarding the current operation, nevertheless the proximity of residentially zoned land, combined with the possible changes due to landfill expansion, warrants the submission of an acceptable noise report.

Should you have any questions, please contact the undersigned.

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T. Shevlin, P.Eng.

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V. Low, P.Eng.  
Supervisor, Air and Noise Unit

## **APPENDIX B**

### **Statement of Service Conditions and Limitations**



## **GREENVIEW ENVIRONMENTAL MANAGEMENT LIMITED - STATEMENT OF SERVICE CONDITIONS AND LIMITATIONS**

### **Provision of Services and Payment**

Upon documented acceptance of Greenview's proposed services, costs and associated terms by the client, Greenview may commence work on the proposed services directly. Upon retention of Greenview's services related to this project, the client agrees to remit payment for the services rendered for the specified period within (30) days of receipt as invoiced by Greenview on a typical monthly basis, unless otherwise arranged between the client and Greenview. In the event of non-payment by the client, Greenview reserves the right, without external influence or expense, to discontinue services and retain any documentation, data, reports, or other project information until such time as payment is received by Greenview.

### **Warranty, Limitations, and Reliance**

Greenview relies on background and historical information from the client to determine the appropriate scope of services to meet the client's objectives, in accordance with applicable legislation, guidelines, industry practices, and accepted methodologies.

Greenview provides its services under the specific terms and conditions of a specific proposal (and where necessary formal contract), in accordance with the above requirements and the *Limitations Act 2002*, only.

The hypotheses, results, conclusions, and recommendations presented in documentation authored by Greenview are founded on the information provided by the client to Greenview in preparation for the work. Facts, conditions, and circumstances discovered by Greenview during the performance of the work requested by the client are assumed by Greenview to be part of preparatory information provided by the client as part of the proposal stage of the project. Greenview assumes that, until notified or discovered otherwise, that the information provided by, or obtained by Greenview from, the client is factual, accurate, and represents a true depiction of the circumstances that exist related to the time of the work.

Greenview relies on its clients to inform Greenview if there are changes to any related information to the work. Greenview does not review, analyze or attempt to verify the accuracy or completeness of the information or materials provided, or circumstances encountered, other than in accordance with applicable accepted industry practice. Greenview will not be responsible for matters arising from incomplete, incorrect or misleading information or from facts or circumstances that are not fully disclosed to or that are concealed from Greenview during the period that services, work, or documentation preparation was performed by Greenview.

Facts, conditions, information and circumstances may vary with time and locations and Greenview's work is based on a review of such matters as they existed at the particular time and location indicated in its documentation. No assurance is made by Greenview that the facts, conditions, information, circumstances or any underlying assumptions made by Greenview in connection with the work performed will not change after the work is completed and documentation is submitted. If any such changes occur or additional information is obtained, Greenview should be advised and requested to consider if the changes or additional information affect its findings or results.

When preparing documentation, Greenview considers applicable legislation, regulations, governmental guidelines and policies to the extent they are within its knowledge, but Greenview is not qualified to advise with respect to legal matters. The presentation of information regarding applicable legislation, regulations,

governmental guidelines, and policies is for information only and is not intended to and should not be interpreted as constituting a legal opinion concerning the work completed or conditions outlined in a report. All legal matters should be reviewed and considered by an appropriately qualified legal practitioner.

Greenview's services, work and reports are provided solely for the exclusive use of the client which has retained the services of Greenview and to which its reports are addressed. Greenview is not responsible for the use of its services, work or reports by any other party, or for the reliance on, or for any decision which is made by any party using the services or work performed by or a report prepared by Greenview without Greenview's express written consent. Any party that uses, relies on, or makes a decision based on services or work performed by Greenview or a report prepared by Greenview without Greenview's express written consent, does so at its own risk. Except as set out herein, Greenview specifically disclaims any liability or responsibility to any third party for any loss, damage, expense, fine, penalty or other such thing which may arise or result from the use of, reliance on or decision based on any information, recommendation or other matter arising from the services, work or reports provided by Greenview.

### **Site Assessments**

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Greenview's work or report considers any locations or times other than those from which information, sample results and data were specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those based on extrapolations.

Only conditions, and substances, at the site and locations chosen for study by the client are evaluated; no adjacent or other properties are evaluated unless specifically requested by the client. Any physical or other aspects of the site that were not chosen for study by the client, or any other matter not specifically addressed in a report prepared by Greenview, are beyond the scope of the work performed by Greenview and such matters have not been investigated or addressed.

### **Confidentiality**

Greenview provides proposals, reports, assessments, designs, and any other work for the sole party identified as the client or potential client in the case of proposals.

For proposals specifically, the information contained therein is confidential, proprietary information, and shall not be reproduced or disclosed to any other party than to that of the addressee of the original proposal submission, without prior written permission of Greenview.