

**STAFF REPORT:      ENGINEERING AND PUBLIC WORKS DEPARTMENT**



**REPORT TO:**                    Infrastructure and Recreation  
   Committee  
**MEETING DATE:**            June 11, 2013  
**REPORT NO.:**                EPW.13.056  
**SUBJECT:**                    Annual Solid Waste Report 2012  
**PREPARED BY:**            Jeffery Fletcher, Manager of Solid  
   Waste and Environmental Initiatives

**A.      Recommendations**

THAT Council receive Staff Report EPW.13.056 entitled “Annual Solid Waste Report 2012” for their information.

**B.      Background**

The Town is required to complete an Annual Report on the Solid Waste Disposal Site for submission to the Ministry of Environment (MOE) District Office. The 2012 Annual Report was provided to the MOE on April 15, 2013. This report included information on type and quantity of all wastes received and transferred, discussion of negative impacts discovered during inspections, operating procedures, detailed results of leachate, surface and ground water monitoring, site capacity and compliance, and a discussion of recycling programs.

The above information was provided in 3 separate documents that include integrated information:

- 1. Annual Solid Waste Report;
- 2. Annual Water Monitoring Report;
- 3. Closure and Post-Closure Care Cost Estimates.

The Town retained Golder Associates Limited (Golder) to prepare all of the above reports. The reports include detailed information of waste managed as documented during daily operations of the Site. The Water Monitoring and Quality Report provides an assessment of Site boundary compliance and an evaluation of future Site monitoring requirements. A fourth study is required to be conducted every 5 years that assesses the water quality of the Indian Brook. This fourth study will be carried out in 2013 and reported in 2014.

**Annual Solid Waste Report**

The list below includes some of the notable conclusions and recommendations that were provided by Golder based on the findings of the Annual Solid Waste Report and Water Monitoring Report for the period ending December 31, 2012.

## Conclusions

- An estimated landfill capacity of 8,360 m<sup>3</sup> was consumed in 2012. Based on the 5 year average landfill capacity consumption of 11,630 m<sup>3</sup> / year (the 2008 to 2012 average), the remaining Site life is approximately three years.
- Elevated nitrate concentrations to the north and south of the Site that exceed the reasonable use criteria could reflect landfill impact. However, based on low concentrations of other landfill indicators and the presence of agricultural operations, it is considered more likely that nitrate is of agricultural origin.
- Elevated ammonia concentrations at the north east corner of the Site likely represent landfill impact.
- The north boundary of the Site also has elevated chloride which reflects landfill impact; however concentrations are declining over time.

## Recommendations

- Dataloggers should be installed in two wells to the north to monitor effects of aggregate extraction activities on water table elevations.
- Construction of a new well should be completed at a location approximately 150 m south of the southern Site boundary to assist in the assessment of the need for a contaminant attenuation zone (CAZ) to the south of the Site.

Town Staff has begun work on addressing the reports' recommendations and will include any additional surveying or sampling requirements into the next round of reporting.

### Overall Site Waste Management

Total waste managed at the Site has remained consistent; the table below identifies tonnages under 3 waste streams. The 3 other tables below breakdown, for 2012, the waste streams into more detailed classes of material. Using the numbers from 2012 the overall Site diversion rate is 35%.

| Waste Stream         | 2010 tonnages | 2011 tonnages | 2012 Tonnages |
|----------------------|---------------|---------------|---------------|
| Disposal             | 4448          | 4240          | 4197          |
| Recycle              | 1229          | 1098          | 1407          |
| Compost              | 892           | 942           | 891           |
| <b>Total Managed</b> | <b>6568</b>   | <b>6279</b>   | <b>6497</b>   |

| Disposal Stream                | 2012 Tonnage |
|--------------------------------|--------------|
| Residential Curbside           | 1768         |
| Residential Drop-off           | 391          |
| Commercial Drop-off            | 1945         |
| Town Operations Waste Drop-off | 31           |
| Contaminated Soil              | 63           |
| <b>Total Landfilled</b>        | <b>4197</b>  |

| Recycle Stream            | 2012 Tonnage |
|---------------------------|--------------|
| Curbside Recycling        | 838          |
| Depot Recycling           | 43           |
| Scrap metal               | 98           |
| Concrete/asphalt          | 312          |
| Wood waste                | 76           |
| Tires                     | 10           |
| Electronics Waste         | 17           |
| Household Hazardous Waste | 13           |
| <b>Total Recycled</b>     | <b>1407</b>  |

| Compost Stream           | 2012 Tonnage |
|--------------------------|--------------|
| Apples                   | 357          |
| Commercial Brush         | 72           |
| Residential Yard Waste   | 394          |
| Town Operations Drop-off | 68           |
| <b>Total Managed</b>     | <b>891</b>   |

### Diversion (Blue Box) Program

The 2012 Waste Diversion Plan for the Town outlines a number of Goals and Objectives for the blue box program. Two targeted objectives are outlined in the Plan: reduce program net cost and increase recovery rate. The two program indicators are being used to evaluate and monitor the performance of the blue box program. The monitoring targets are described as: net cost of the blue box program per tonne and kilograms of blue box material marketed per household. The Net Cost / Tonne table below outlines past and current performance, target performance and the available group averages of similar municipalities. The net cost / tonne target is to reduce net cost per tonne by 15% (considering inflation) by 2025. As can be seen in the table below, 2012 experienced an increase in net cost / tonne over previous years and sat higher than the 2012 target.

Blue Box Net Cost / Tonne

| Year         | TBM Net Cost/<br>Tonne | Target Net Cost /<br>Tonne | Municipal Average<br>Net Cost / Tonne |
|--------------|------------------------|----------------------------|---------------------------------------|
| 2010         | \$321                  |                            | \$459                                 |
| 2011         | \$347                  |                            | \$506                                 |
| <b>*2012</b> | <b>\$367</b>           | <b>\$354</b>               |                                       |
| 2015         |                        | \$375                      |                                       |
| 2025         |                        | \$446                      |                                       |

\*2012 is unofficial; data has not completed Waste Diversion Ontario's verification process

The Blue Box Kilograms per Household table below outlines past and current performance, target performance and the available group averages of similar municipalities. The target for kilograms per household is 175 kilograms per household by 2025. The Town is above the back-casted kg / household target for 2012, however captured material will need to increase to match the average of similar municipalities and the 2025 target.

Blue Box Kilograms per Household

| Year         | TBM Kilograms /<br>Household | Target Kilograms /<br>Household | Municipal Average<br>Kilograms /<br>Household |
|--------------|------------------------------|---------------------------------|---|
| 2010         | 126                          |                                 | Not available                                 |
| 2011         | 108                          |                                 | 145   |
| <b>*2012</b> | <b>110</b>                   | <b>101</b>                      |   |
| 2015         |                              | 118                             |   |
| 2025         |                              | 175                             |   |

\*2012 is unofficial; data has not completed Waste Diversion Ontario's verification process

In addition to the indicators above, it is typical to review the blue box capture rate. A program's recycling rate for blue box materials compares the material estimated to be generated by households served by the program (based on Stewardship Ontario's historical waste composition data) to the blue box tonnes marketed by that program and has a maximum value of 90%. This rate is calculated by Waste Diversion Ontario (WDO) and is not yet available for the 2012 reporting year. However, the 2010 and 2011 WDO calculated capture rates were 68% and 56% respectively. The average of similar sized municipalities for 2010 and 2011 was 56% and 54% respectively.

The above numbers relating directly to TBM's blue box program reveals, in general, that the Town's net cost is well lower than the average and the capture rate sits just above the average. However, the kilograms captured per household are low and have dropped recently. This kg / household factor is an emerging and important indicator for funding. It will be important to increase the kilograms per household to maximize funding. The target set by the Town's Waste Diversion Plan appears to be lower than the average in the short term and may need to be revisited. However, increasing kilograms per household may prove difficult with reduced occupancy of homes in some areas of the Town.

**Residential Overall Diversion Rate**

The most common comparator between municipal diversion programs is the total (not just blue box) residential diversion rate. This rate is the percentage of material recycled, composted and/or reused versus residential disposal. The focus of the numbers below is residential only, whereas the "overall Site diversion rate" of 35% for the Landfill Site includes all activities and sectors including residential and commercial. Total residential diversion rate is sitting significantly higher than the average of similar municipalities.

Residential Diversion Rate (Waste Diversion Ontario)

|                                 | 2010  | 2011 | 2012 |
|---------------------------------|-------|------|------|
| The Blue Mountains              | 42%   | 41%  | 45%* |
| Similar Municipal Group Average | 29.5% | 32%  |      |

\*2012 is unofficial; data has not completed Waste Diversion Ontario's verification process

**C. The Blue Mountains' Strategic Plan**

This activity in part satisfies Town Strategic Goal 2. "Addressing the Town's municipal infrastructure needs", and contributes to Strategic Action 2.5 "Develop a waste management strategy to meet diversion targets and address landfill capacity".

**D. Environmental Impacts**

The activity of studying and monitoring is the basis for an understanding of the impacts of the Site on the adjacent natural environment and the success of the Site's related waste diversion programs.

Some Site boundary issues persist and the initiated Site expansion and remediation project will provide the Site with new engineered containment technology which will work towards eliminated Site impacts on ground and surface water.

The Town's Waste Diversion Plan related to blue box recycling objective of kilograms / household has been exceeded however an even higher kg / household should be targeted.

#### **E. Financial Impact**

The Town's net cost per tonne of blue box recycling (\$367.00) is currently higher than the Town's target and much lower than the average of similar municipalities of \$506.00 / tonne.

#### **F. In Consultation With**

None

#### **G. Attached**

None

Respectfully submitted,

**Jeffery Fletcher**  
Jeffery Fletcher  
Manager, Solid Waste and Environmental Initiatives

Engineering & Public Works  
Office: 519-599-3131 Ext.238  
Fax: 519-599-7723  
[jfletcher@thebluemountains.ca](mailto:jfletcher@thebluemountains.ca)

**Reg Russwurm**  
Reg Russwurm  
Director, Engineering and Public Works