STAFF REPORT: ENGINEERING AND PUBLIC WORKS DEPARTMENT

REPORT TO:	**Committee of the Whole**
MEETING DATE:	**October 20, 2014**
REPORT NO.:	**EPW.14.076**
SUBJECT:	**Landfill Expansion Update**
PREPARED BY:	**Jeffery Fletcher, Manager of Solid Waste and Environmental Initiatives**

A. Recommendations

THAT Council receive Staff Report EPW.14.076, “Landfill Expansion Update” for their information.

B. Background

Introduction

The Landfill reclamation and re-engineering project is currently the Town’s single largest project. Prior to the construction tendering, an Environmental Screening under the Environmental Protection Act was completed and resulted in four expansion scenarios that were reviewed and considered by Council. The current Council had a unique, financially and environmentally significant decision to make regarding selecting the best solution for landfill redesign and future local waste disposal service. Scenario 2, vertical expansion and mining of the historic waste disposal area was selected as the environmentally preferable option. This Scenario 2 was then, to make it more financially practical, divided into two phases. Construction of phase 1 began in June of this year.

Waste Processing

In the spring of this year Arnott Construction was hired to conduct phase 1 construction and manage the Landfill’s active tipping face until the end of the maintenance period. This phase of construction will occur over 2 years and will involve the excavation and screening of 100,000 cubic meters of waste/fill and the installation of a liner and leachate collection system.

The Site Contractor has made suitable progress to date, in relation to the construction timeline, on the volume of material excavated and processed. Currently, they plan to continue to excavate and process for the remainder of this year until the weather hinders production. The Contractor has recently added a second screening plant to increase daily production and assist with meeting the construction timeline.

Golder Associates is providing construction monitoring. The consultant estimates, as of the end of September, that approximately 40% of the excavation volume is complete. However, a large portion 1 to 2 metres in depth will be left in place until the 2015 construction season when cell re-engineering begins. The contractor's goal is to excavate and screen all of the waste material and establish a uniform grade with the remaining native soils on the excavation floor. Considering the remaining area and current production rates this is an achievable goal for this year and within the original construction plan.

Weather and Site Conditions

One impact on construction production has been wet weather. The Site's native silty soil creates difficulties in moist conditions, including clogging of the screening plants. This has no doubt hindered the potential production rates. However, other cell conditions being found are likely working to balance out any delays.

During excavation large areas of undisturbed native granulars and soils have been discovered. This discovery is consistent with the borehole study conducted during the planning phase. Historically and typically, waste was burned and buried in a trench method. A linear trench was dug and waste was placed and often burned, once the trench became full, a new trench was dug. This method left triangular areas of undisturbed native material between trenches. Additionally, the trenches in some areas were relatively shallow, again creating more area not used as waste disposal. These undisturbed areas allow for less processing, which can save time.

Finding these un-impacted volumes of material is working to creating an additional benefit to the project. A large triangular portion of the excavation area, the area closest to the Indian Brook, is being removed from the landfill footprint. This area, under the construction tender, would have required the import of granular materials to back fill. With the use of the discovered undisturbed surplus material there is a potential to reduce imported fill costs within the project.

Continued wet weather is creating surface water ponding in the low lying areas already excavated. Town Staff are encouraging the consultant and contractor to develop a plan to minimize ponding water to ensure this condition does not hinder cell base excavation and preparation in the spring of next year.

Fines and Overs

The project design anticipated a fines (future cover) and overs (waste) ratio of 60/40. The construction consultant is estimating that the project is actually seeing a 70/30 ratio. The benefit with a reduced waste ratio is increased air space and more future disposal capacity than originally anticipated to the Town's long term benefit.

The visual quality of the fines is very good. It largely looks like screening topsoil and has only trace amounts of detritus material. A minor downfall is the increased fines will still require management within the Site boundaries and the ending balance may be more than the Site could use during the currently approved life.

Ministry of the Environment and Climate Change

Local and approvals level MOECC staff have supported the Town's approach towards expanding and re-engineering the Landfill Site throughout the planning and application stages. In September local and technical support level MOECC staff attended the construction site for a tour of the work completed to date. During the visit no compliance concerns were raised and Ministry staff expressed an interest in this more unique project from a process and technical stand point.

Next Steps for Construction and Landfill Expansion

Over the next few months the Contractor will focus on completing waste excavation and establishing a uniform grade on the remaining native materials in the cell. The Contractor will begin base cell excavation and liner and leachate collection system installation in the spring of 2015. Installation of liner systems requires favourable weather conditions and the Contractor is coordinating their work to install the liner and leachate system during the summer months of 2015.

Substantial performance of the work is expected in July/August of 2015. The Contractor will continue to operate the active tipping face throughout the one year maintenance period.

Town Staff will bring forward a report to Council in 2015 to consider the tipping face management options after the one year maintenance period is complete. Other landfill related issues will be reviewed with Council in 2015 including leachate piping and determining a financial plan for Landfill Site long term liability.

The next expansion phase was expected to be required in 10 years. However, the timeline will depend on annual disposal rates, tied to local development, Site use and waste diversion efforts.

C. The Blue Mountains' Strategic Plan

Addressing the Town's municipal infrastructure needs.
Providing a strong, well managed municipal government.

D. Environmental Impacts

One of the primary reasons for undertaking the mining portion of this expansion project, in addition to gaining new capacity, is to improve the environmental performance of the Site. Removing existing waste and lining the eastern portion of the Site creates an additional buffer to the adjacent Indian Brook. This will be a significant improvement over the existing limit of waste that runs as close as 10 to 15 metres from the Disposal Site property boundary.

E. Financial Impact

Construction and construction monitoring costs are proceeding within budget and no change orders have been issued or requested to date.

F. In Consultation With

None

G. Attached

None

Respectfully submitted,

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