Disposal Site Leachate Management Overview

Council Orientation
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Manger of Solid Waste & Special Projects
Overview

• Background
• Options Considered
• Current Status and Options
• Financial
• Recommendation and Next Steps
Background

- Solid Waste Solution – Environmental Screening – Landfill Mining and Expansion 2012
- Related Design and Construction for 25 year capacity completed in 2015 (Phase One)
- Preliminary consideration of a longer term solution for leachate management (anticipation of a long term management solution)
Mining, Lining and Expansion

- Waste Overs and Fines (Cover Material)
- Future Waste and Fines (Cover Material)
Leachate Generation
Environmental Assessment
Options Considered

• EA Completed August 2017
• Do nothing (Continue Trucking)
• On site treatment and infiltration
• On site treatment and discharge to Brook
• Pump leachate via forcemain (preliminary capacity consideration)
On Site Treatment

- Higher Cost
- No Available Outlet
  - Adjacent Brook
  - Infiltration (existing CAZ and flow to Brook)
PROCEED WITH FORCEMAIN
March 2018

Successful Grant Application

- Trucks off road (reduce traffic and GhG)
- Reduce odour issues at lift station
- Solar array on pump station
GRANT CANCELLED
July 2018

- Wind-down funds ($155,575)
- Paused design (60% complete)
- Decision for next Council
CURRENT STATUS

- Reduced infiltration
- Reduced odour
- Ad hoc pre-treatment system
  - Permanent solution and approvals needed
The Blue Mountains Landfill - Leachate Generation

Projected Annual Leachate Generation and Actual Hauled (m³/year)

- Actual Annual Leachate Hauled
- Estimated Total Leachate Haulage
- Landfill Cell Phase 2 Build
- Estimated Maximum Wet Year Leachate Generation
- Estimated Normal Year Leachate Generation
- Estimated Minimum Dry Year Leachate Generation
- Average Total Annual Precipitation, Thornbury Climate Normals 1981-2005

Data from Sperling Hansen Associates Report, March 19, 2018
* Precipitation in 2018 estimated based on to date and climatic norm
Temporary Pre-Treatment
Current Options

- Do nothing
- Continue as is
- Permanently haul leachate
- On-site treatment and disposal
- Leachate pumping station and forcemain
Continue As Is

- Pre-treatment compliance
- Challenged in wet weather at lift station
- Trucking continues (traffic and GhG)
- Use of Collingwood Plant
Permanently Haul

- Long term storage and pre-treatment
- EA review
- Trucking Continues (traffic and GhG)
- Use of Collingwood Plant
On-site Treatment and Disposal

- EA review required
- Environmental challenge (likely to face opposition)
- Available receiving body
- Scale of operation
Re-evaluation of On-site 2018

Kincardine, McDougall, Simcoe(Collingwood), Green Lane

- On-site treatment investigation
  - High cost (capital and operational – higher than considered in EA)
  - Troublesome operations
  - Available outlet
  - Proximity and availability of existing treatment capacity
Forcemain & Pump Station

- Reduced traffic and GhG
- Fits into available Plant capacity
- Preferred Solution in EA
- Pre-treatment in pump station for odours
- Headworks odour treatment
- Assimilation capacity at Thornbury Plant using flow pacing
# Financial

## Cost Summary

<table>
<thead>
<tr>
<th>Opt.</th>
<th>Description</th>
<th>Initial Capital</th>
<th>Annual Ops.</th>
<th>Lifecycle&lt;sup&gt;(1)&lt;/sup&gt;</th>
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<tbody>
<tr>
<td>1</td>
<td>Do Nothing</td>
<td></td>
<td></td>
<td>not viable</td>
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<tr>
<td>2</td>
<td>Continue As Is</td>
<td>$300,000</td>
<td>$245,991</td>
<td>$6,899,769</td>
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<td>3</td>
<td>Permanently Haul Leachate</td>
<td>$1,000,000</td>
<td>$226,049</td>
<td>$6,651,219</td>
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<td>4</td>
<td>Pumping Station and Forcemain</td>
<td>$2,388,073</td>
<td>$119,300</td>
<td>$5,370,573</td>
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<td>5</td>
<td>On-Site Treatment and Disposal</td>
<td>$4,812,031</td>
<td>$217,838</td>
<td>$10,257,973</td>
</tr>
</tbody>
</table>

**Notes:**
1. Based on 25 year lifecycle.

Annual savings realized in the forcemain option of approximately $125,000 over current operations will cover most of the 25 year debt payment. Lowest lifecycle cost (25 years – leachate will be generated for 50 plus)
Conclusion

• The leachate pumping station and forcemain construction project has the lowest 25 year life cycle cost and is technically reliable and feasible.
Next Steps

• Budget Approval
• Continue monitoring Provincial funding programs
• Continue temporary measures for odour
• Complete Engineering design in 2019
• Construction in 2020