A Discussion on Landfill Costs, Rates, and Intakes
- Rate Study Presentation -

48th Annual Environmental Show of the South
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Prepared by:

Conference Sponsored by:
Outline

- Introduction
- Purpose
- Landfill Background / Facts
- Expenses
- Revenues
- Comparison of Tipping Fees
- Balance Point
- Results and Discussion
- Summary and Closing
Introduction

• Consider permitting Class I landfills in TN
  – Run at profit or make financially sustainable
  – Operate facility effectively and efficiently
  – Operate safe and environmentally compliant

• To accomplish objectives
  – Money to permit, construct, operate,
  – Money to maintain, monitor, comply, and close

• Where is that optimum point, that “balance point”
  – How many tons/day, and at what price to operate, comply, and make it sustainable

Question to TDEC
How do we comply & compete?
Purpose

• Try to address some of these questions
• Present a per ton cost of service to allow owners to start their own evaluation of current services and operations
• Rate Study or Cost of Service Study
  – Determine solid waste tipping fees required to balance cost of services without need for unplanned capital expenditures or price increases
Landfill Background

- Publicly owned and operated in TN
- Class 1 Disposal Facility (non-haz MSW)
- Landfill Permitted & Operates in accordance with TDEC’s Chapter 0400-11-01
- Composite Base Liner System
- GCCS System Installed & LFGTE Plant
- 25+ Employees (Landfill, Maintenance Shop & Admin.)
- Average Waste Intake 200,000 tpy (600-800 tpd)
Landfill Background

• Expense for Capital Purchases accounted as depreciation over the useful life of the asset
• Administration and Operations resources shared with other countywide Solid Waste Management activities – recycling, O&M, waste pick-up, etc.
• Tipping Fees & Landfill Gas Sales are major revenue sources
• Tipping Fee - $48/ton (gate rate), $29/ton (average discounted rate-based committed accounts, volumes, residential customers, other services, etc.)
Summary of Expenses

• Administration
• Maintenance Shop
• Landfill Operations & Maintenance
  – Permitting, Development (Infrastructure, Construction, Engineering), Operations, Compliance (Monitoring, Reporting), & Closure
• Post-Closure Care Costs

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>$629,194</td>
<td>9%</td>
<td>$3.15</td>
</tr>
<tr>
<td>Shop</td>
<td>$282,065</td>
<td>4%</td>
<td>$1.41</td>
</tr>
<tr>
<td>Landfill O &amp; M</td>
<td>$5,391,753</td>
<td>76%</td>
<td>$26.96</td>
</tr>
<tr>
<td>Post Closure Care Costs</td>
<td>$817,611</td>
<td>11%</td>
<td>$4.09</td>
</tr>
<tr>
<td>Total</td>
<td>$7,120,623</td>
<td>100%</td>
<td>$35.60</td>
</tr>
</tbody>
</table>

Note: Expenses listed above are for a calendar year, annual.
Summary of Expenses

Admin Expenses

Landfill O & M Expenses

Staff 25%
Insurance & Benefits 6%
Engineering & Compliance 9%
Depreciation 21%
Contract Items 11%
Fuel 7%
Other 12%
Equipment & Machinery 9%
Other 12%

43% 36% 21%
$36

Expense/ton

$26.96, 76%

$3.15, 9%

$1.41, 4%

$4.09, 11%

Administration

Shop

Landfill O & M

Post Closure Care Costs
### Summary of Revenues

<table>
<thead>
<tr>
<th>Revenue Type</th>
<th>Amount</th>
<th>% of Total Revenue</th>
<th>Revenue/ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tipping Fees</td>
<td>$5,902,273</td>
<td>99%</td>
<td>$29.51</td>
</tr>
<tr>
<td>Landfill Gas Sales</td>
<td>$53,957</td>
<td>1%</td>
<td>$0.27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$5,956,230</td>
<td>100%</td>
<td><strong>$29.78</strong></td>
</tr>
</tbody>
</table>

Note: Revenues listed above are for a calendar year, annual.
## Comparison of Tipping Fees & Intake Rates - Statewide

<table>
<thead>
<tr>
<th>Category</th>
<th>Tipping Fee ($/ton)</th>
<th>Intake (tons/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Avg</td>
</tr>
<tr>
<td><strong>State Overall</strong></td>
<td>$86</td>
<td>$42</td>
</tr>
<tr>
<td><strong>Mun LFs only</strong></td>
<td>$60</td>
<td>$37</td>
</tr>
</tbody>
</table>

### Source of Information:

**Tipping Fees:**
2018 Tipping Fees, Class I Sanitary Landfills in Tennessee, TDEC, Div of SWM

**Intake Rates:**
2018 Remaining Life Survey, Class I Sanitary Landfills in Tennessee, TDEC, Div of SWM

- $48/ton gate rate
- $41/ton (discounted rate I)
- $36/ton (discounted rate II)
- Discounted rate for Residential Customers
- $29/ton average of above rates

600 - 700 tons/day
Comparison of Tipping Fees - Nationwide

<table>
<thead>
<tr>
<th>Region</th>
<th>Avg Tipping Fee</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific</td>
<td></td>
<td>60</td>
<td>68</td>
</tr>
<tr>
<td>Northeast</td>
<td></td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>Midwest</td>
<td></td>
<td>50</td>
<td>47</td>
</tr>
<tr>
<td>Mountain/Plains</td>
<td></td>
<td>46</td>
<td>44</td>
</tr>
<tr>
<td><strong>Southeast</strong></td>
<td></td>
<td>41</td>
<td>43</td>
</tr>
<tr>
<td>South Central</td>
<td></td>
<td>37</td>
<td>35</td>
</tr>
<tr>
<td>National Avg</td>
<td></td>
<td>52</td>
<td>55</td>
</tr>
</tbody>
</table>

Source: EREF, Analysis of MSW Landfill Tipping Fees, April 2018

$29/ton average
$48/ton gate rate
Balance Point - $/ton

Expense/ton = $36
Revenue/ton = $29
Difference = $7, tipping fee increase

$55/ton (revised gate rate)
$48/ton (revised discounted rate I)
$43/ton (revised discounted rate II)
Balance Point - tons/day

Deficit = $1,100,000
Tipping Fee = $41/ton (Discounted Rate 1)

Increase Waste Intake by additional 25,000 tons, total annual waste intake range of 220,000 to 230,000 tons (850 to 900 tpd).
Results and Discussion

• Modeling aimed at providing key elements based on site-specific analyses
• Ways to Increase Revenue
  – Increase tipping fees
  – Accept trash from other counties
Summary and Closing

• Provide basic tool to evaluate own operations
  – Varies, but similar steps
  – Fee decision elements
• Provide handle on pricing and/or tons, while achieving compliance, to determine whether to be able to compete
• Prepare for and plan for future waste management services
• Serve as a planning tool
  – Design efficiency important
  – Improve operating practices
• Obtain better handle on operations and prioritize initiatives
Thank You!

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