Designing a Compost Facility
Where the Dream Began!
Site Design and Planning
**FIGURE 03**

**Amboy Final Engineering Services**  
**Amboy Compost Facility**  
**Schematic of Feedstock Processing Volume, Average Annual Basis**

### Yard Waste (Used as Bulking Material)

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume (cy/yr)</th>
<th>Wet Weight (tons/yr)</th>
<th>Dry Weight (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential &quot;Soft&quot;</td>
<td>1,730</td>
<td>779</td>
<td>390</td>
</tr>
<tr>
<td>Residential &quot;Hard&quot;</td>
<td>1,150</td>
<td>173</td>
<td>69</td>
</tr>
<tr>
<td>Commercial &quot;Soft&quot;</td>
<td>27,070</td>
<td>12,182</td>
<td>6,091</td>
</tr>
<tr>
<td>Commercial &quot;Hard&quot;</td>
<td>18,050</td>
<td>2,708</td>
<td>1,083</td>
</tr>
<tr>
<td>Approx. Totals</td>
<td>48,000</td>
<td>15,840</td>
<td>7,635</td>
</tr>
</tbody>
</table>

### Food Waste

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume (cy/yr)</th>
<th>Wet Weight (tons/yr)</th>
<th>Dry Weight (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Waste</td>
<td>16,000</td>
<td>9,600</td>
<td>2,880</td>
</tr>
<tr>
<td>&quot;Soft&quot; Yard Waste Bulk Material</td>
<td>28,800</td>
<td>12,960</td>
<td>6,480</td>
</tr>
<tr>
<td>&quot;Hard&quot; Yard Waste Bulk Material</td>
<td>19,200</td>
<td>2,880</td>
<td>1,152</td>
</tr>
<tr>
<td>Approx. Totals</td>
<td>60,000</td>
<td>25,440</td>
<td>10,515</td>
</tr>
</tbody>
</table>

### PHASE 1 – Primary Aeration
3 weeks (min.)  
(Compost Aeration Pad)

### PHASE 2 – Aerated Cure
4 weeks  
(Curing Pad)

Material Input: 51,200 cy/yr  
Weight varies  
(After Losses from Phase I)

### Screening

Material Input: 42,000 cy/yr  
Weight varies  
(After Losses from Phase 2)

### PHASE 3 – Finishing
3 weeks  
(Designated Stockpile Areas)

Compost: 36,000 cy/yr  
15,300 tons/yr  
7,650 dry tons/yr  
(After Losses from Screening)

### Recycled “Overs” (Recycled as Bulking Material)

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume (cy/yr)</th>
<th>Wet Weight (tons/yr)</th>
<th>Dry Weight (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled “Overs”</td>
<td>7,000 – 10,000</td>
<td>3,150 – 4,500</td>
<td>1,350 – 2,250</td>
</tr>
</tbody>
</table>

### Waste (Disposed at WTE)

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume (cy/yr)</th>
<th>Wet Weight (tons/yr)</th>
<th>Dry Weight (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste</td>
<td>700 – 1,000</td>
<td>315 – 450</td>
<td>130 – 180</td>
</tr>
</tbody>
</table>

**Notes:**

Losses are based on previous operating experience.
Designing a Composting Facility: What to do Next?

• First become Familiar with your “Regulatory Environment”, ie. Dept of Environment, Dept of Ag & Markets, USEPA & FDA regs, even Local Zoning and Health Departments.

• Conduct a Waste Analysis to see what is truly available in the waste stream. Evaluate what is capturable and where there is competition. How big do you want/need to be (Goals)?
Designing a Composting Facility: What to do Next?

• Develop draft concepts and business plans
• Obtain Preliminary/Draft Engineering Designs
• Develop a Pilot Project to demonstrate your theories and successes
• Conduct a Professional Design Review and Finalize Engineering Plans for Permitting
• Submit Permit Documents
• Bid Documents and Release
Designing a Composting Facility: What to do Next?

- Contractor Acquisition and Phased Construction,
- Finally - Equipment Acquisition, Employee Hiring and Growth

All within a 5 Year Window
Considerations

• Distance to Closest Neighbors/Houses/Businesses
• Population Density
• Dust
• Traffic/ Noise
• Wind Direction
• Slope
• Wind Direction
• Ground and Surface Water- flooding?
Compost Facility Siting
How to Work with Different Sites

Main Considerations

• Air
• Water
• Population Density
• Slope
Ground & Surface Water Protection

• Filter Strips
• Compost Berms and Socks
• Berms for Diversion Off-site
• Grading/ Slope 1-2%
• Collection Lagoons
• Collection Tanks
• Site Maintenance
Compost Bay Blower System           Drainage Trench
Compost Aeration Bays
Scale System
Gatekeeper Station and Office Trailer
Food Scrap Receiving Building
Other Site Layout Considerations:

Slope
Water Management: Run-off

Filter Strips
Water Management: Compost Berms
Finally – Plan for Odors
Odors Management Plan

• Have a Community Relations Plan and 24 hour Contact Number
• Have a Contingency Response and Actions Plan
• Maintain Records of Materials Received and Processing Activities
• Follow Your Best Management Practices
THANK YOU