On-site Systems: Making Sense of the Options

Ava Labuzetta
Staff Engineer,
Sustainable Food Program Technical Co-Lead
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NYS Pollution Prevention Institute

- HQ at RIT
- Established in 2008 “NYSP2I”
- 5th year of second 5 year contract
- Focus on reduction of natural resource consumption (water, raw material, energy) and elimination of waste and hazards
- P2 research, technical assistance, education and outreach
- 15+ full-time staff
NYSP2I and Food Waste

Guide NYS and its stakeholders to a more sustainable food system by providing the information and tools necessary to reduce and recover food resources.
A lot of choices
A lot of things to consider

- regulatory applications
- cost
- types
- operational
types
- sector
- company
- landfill
- product
type
- labor
- bans
- wastewater
- food
- space
So how do you make a good decision?
### Decision Matrix

#### What should I do tonight?

<table>
<thead>
<tr>
<th>Options</th>
<th>Cost</th>
<th>Fun</th>
<th>Practical</th>
<th>Weight</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go to bed early</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Make dinner</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>Get take out</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Get a drink</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>23</td>
</tr>
</tbody>
</table>

**Criteria**
- **Cost**
- **Fun**
- **Practical**

**Weight**
- Go to bed early: 2
- Make dinner: 3
- Get take out: 4
- Get a drink: 5

**Totals**
- Go to bed early: 9
- Make dinner: 20
- Get take out: 22
- Get a drink: 23

**How does each option score under each criteria?**

**Sum of scores and weights multiplied**

**What question are you trying to answer?**

**What are you trying to choose between?**

**How important is each of those factors?**

**What question are you trying to answer?**

**What are you trying to choose between?**

**How important is each of those factors?**

**What are you trying to choose between?**
1. Define your question

How should I manage my organics?
2. Brainstorm the Options

- Get input from the whole group
  - Who is involved in organics management?

- Include only the serious contenders as options
  - Smaller matrix is a simpler matrix

- Include off-site options, too if applicable
3. Brainstorm the Criteria & Weight

- Group brainstorm → stronger criteria & larger buy-in on decision

- Example criteria
  - **Cost** - can’t afford to pay more than we are now
  - **Type of food scraps** - needs to take all organics produced
  - **Regulatory considerations** - will we stay in compliance?
  - **Operational considerations** - needs to be able to be operated with existing personnel
  - **Space** - can be set up in limited space
  - **Applications/end products** - don’t want a secondary product to deal with
4. Set up the Decision Matrix

How should I manage my organics?

<table>
<thead>
<tr>
<th>Options</th>
<th>Cost</th>
<th>Food Scraps Accepted</th>
<th>Space</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haul away</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>In-vessel compost</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aerobic digester</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Criteria**
- Cost
- Food Scraps Accepted
- Space
Cost – Considerations

• Consider **total cost**
• Normalize (e.g. \$/lb)
• Incorporate decrease in trash bill
• Don’t forget about managing output material
• Pre-processing vs. full processing
# Food Scraps Accepted - Considerations

<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model Name and Number</strong></td>
</tr>
<tr>
<td><strong>Material Types Accepted</strong></td>
</tr>
<tr>
<td><strong>Material Types Not Accepted</strong></td>
</tr>
<tr>
<td><strong>Operation Method</strong></td>
</tr>
<tr>
<td><strong>Additional Inputs Required</strong></td>
</tr>
<tr>
<td><strong>Output Material and Suggested Management</strong></td>
</tr>
<tr>
<td><strong>Wastewater Discharge</strong></td>
</tr>
<tr>
<td><strong>Sample Tests Available</strong></td>
</tr>
</tbody>
</table>

Space - Considerations

- Use spec sheets for physical size information
- Also consider:
  - Space for output material if applicable
  - Indoor vs. outdoor (or both required?)
  - Proximity to other activities
  - Staging areas
5. Put it all together - fill in the matrix

How should I manage my organics?

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<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haul away</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>In-vessel compost</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Aerobic digester</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>
Final Considerations

- Talk to others who have used the product or service you’re considering
- Lease if possible to try it out
- Don’t forget about off-site management
- Consider creative financing
  - Rent or lease
  - Investigate capital funding available
    https://www.rit.edu/affiliate/nysp2i/food-reimbursement
- Compare your quantitative answer with your gut feeling
Questions?

Contact:

Ava Labuzetta
Email: allp2i@rit.edu
Phone: (585) 475-7038
Food Clearinghouse: https://www.rit.edu/affiliate/nysp2i/food/
  • On-site Systems Page
    https://www.rit.edu/affiliate/nysp2i/food/onsite-food-waste-management

New York State Pollution Prevention Institute
Rochester Institute of Technology
111 Lomb Memorial Drive, Bldg. 78-2000
Rochester, NY 14623

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