



The Future of Solid Waste Management

Where to Start...



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Future of Solid Waste Management

- Durable and Sustainable Programs:
 - Recognize the evolving ton consists of multiple discrete material streams
 - Have mature and durable capabilities in the local market to handle each material stream
 - Consider what is best for the planet when making decisions on what materials are in each program

Moving toward “Zero Waste” as a municipality requires a deep understanding of all waste and recycling streams, an established eco-system of partners and infrastructure to manage and process each stream, and economic balance.

A Comprehensive Plan

Each of These Streams...

Single Stream Recycling

Organics / Food

Electronics

HHW

Universal Waste

Medical Sharps

All Other Waste

... Needs These Considerations

How much is each material stream being addressed by Municipality?

Is there a willingness to pay, or government funding for the unique stream(s)?

Are there Public Private Partnerships and infrastructure in the market to handle/process each material stream?

Are there viable end markets for the commodities generated?

What is the state of public education in the Municipality to achieve, and maintain results

Do appropriate metrics exist to measure success over time?

Does the Municipality assess lessons learned and optimize each stream / initiative?

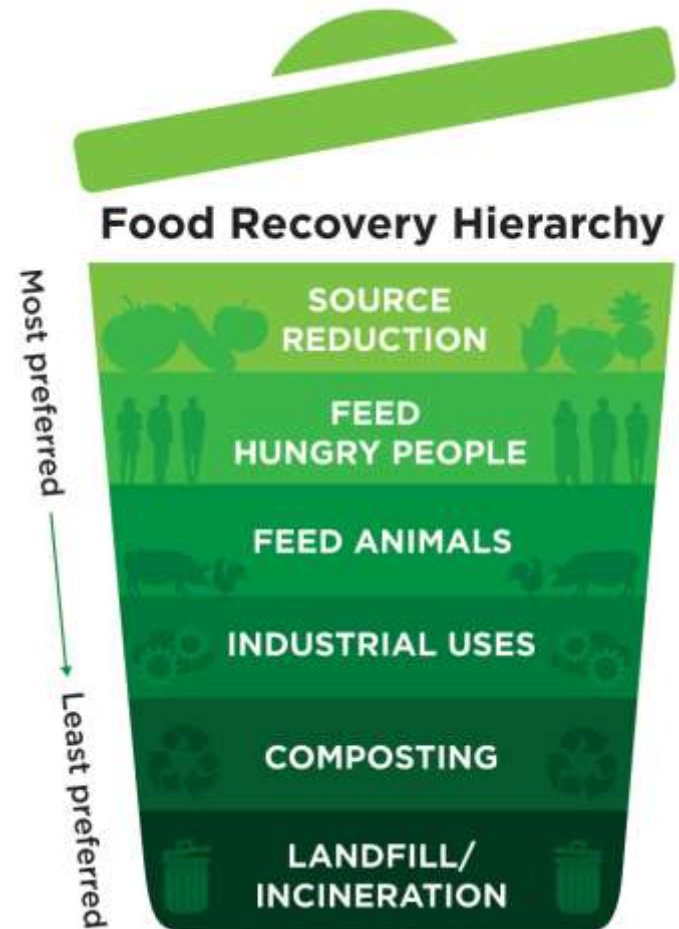
Recognize that the path to "Zero Waste" is a journey, with measurable progress along the way... but all streams must be addressed fully to achieve success!

Every Stream Has a Hierarchy

EXAMPLE – Food Waste

“Maturity” of a Food Waste program depends on how many of the hierarchy levels have established partnerships, infrastructure in place, and are working well.

- **Source Reduction** – Work with businesses and public to buy/make what is needed
- **Feed Hungry People** – Establish partnerships to collect, transport and serve food to hungry
- **Feed Animals** – Establish partnerships to feed animals where possible
- **Industrial Uses** – Establish partnerships to convert waste to energy, or process for Anaerobic Digestion
- **Composting** – Establish partnerships to create compost, and then distribute back to users in the community
- **Landfill / Incineration** – Process remaining material not diverted in other levels of the program



The absence (or failure) of *any* level results in the material falling to the next level of the hierarchy... Total absence of all levels would require disposal in a landfill/incineration.

Consider a Municipal Maturity Index (MMI)

- **Level 5** - True optimization requires existence of a working solution for ALL levels of all material streams.
- **Levels 1-4** - Existence of increasing aspects of a complete solution for each of the material streams.
- **Level 0** – Absence of capabilities, infrastructure or programs to process the material streams, resulting in MSW being disposed in landfill or incinerator.



A MMI recognizes the difference between an initial implementation of a program, and a fully mature program that accounts for all potential processing of the material streams.

Take Aways

- Understand the material streams in your community
- Ensure / Attract an ecosystem of partners to address each stream, before you add to a program
- Economics must work for investment to occur
 - You can only create sustainable supply when there is durable demand
 - Sustainability can not exist without Profitability
- Establish simple, accurate and clear metrics
- Play the long game



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