



'Where is Away' Supplement: Waste Processing FAQs

The 'Where is away' lesson covers the basics of waste processing, but it is a complicated topic! This FAQ sheet provides additional context around waste processing, especially related to waste-to-energy and landfilling. Use this resource as needed to better understand the nuance of this topic.

1. What options do we have to manage waste?

Materials that cannot be reused, repaired, or recycled (including through food scraps recycling), must be processed as waste. Without waste management, we would have immediate and long-term public health and environmental crises.

There are two options to process waste:

- **Waste-to-Energy:** Waste-to-energy (WTE) is the process of combusting (burning) waste to generate electricity, often through steam-powered turbines.
- **Landfilling:** Landfilling is the process of burying waste in a lined hole in the ground

There are additional options that are being developed as a potential tools to manage waste, but for now, waste-to-energy and landfilling are the only options for the scale of waste produced.

2. What are the differences between waste-to-energy and landfilling in Minnesota?

Waste-to-Energy

- Produces fewer greenhouse gas emissions per ton than landfilling
- Destroys over 99% of PFAS – a harmful “forever chemical” – in the waste stream
- Conserves land by reducing waste volume by 90%
- One ton of processed waste generates enough electricity to power a home for 21 days
- Each year, 30,000 tons of metals are recycled from metro area waste-to-energy operations, preventing 45,800 tons of greenhouse gas emissions from new steel production
- Creates value from discarded resources instead of burying them in landfills

Landfilling

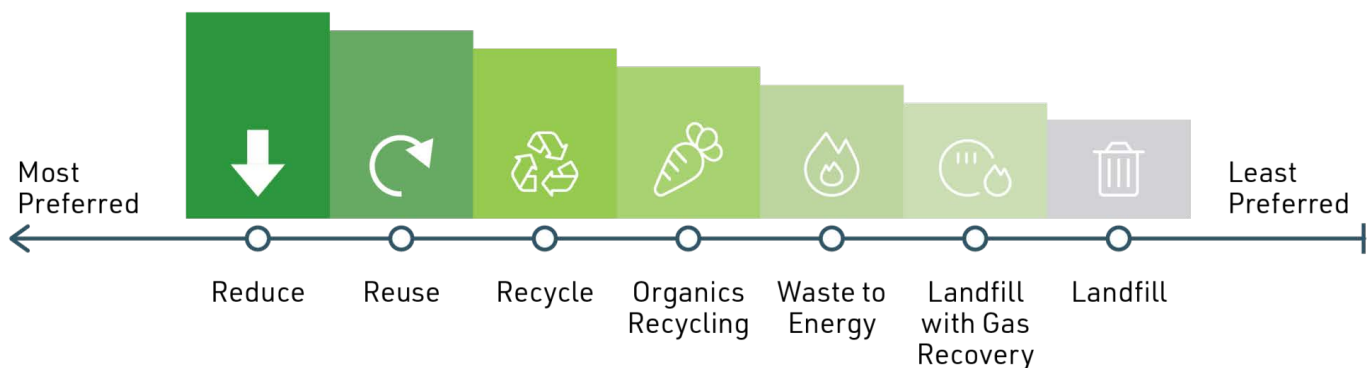
- Decomposing trash produces methane, a greenhouse gas at least 20x more potent than carbon dioxide
- Landfill gas capture produces energy equivalent to powering a home for three days per ton, compared to 21 days for waste-to-energy
- Minnesota has already spent over \$500 million cleaning up landfills – and those costs continue to accumulate
- No new landfills have been permitted in Minnesota since the 1990s, requiring landfill trash to be transported further distances at higher costs and with greater climate impact
- Landfills appear less expensive in the short term, but carry long-term liabilities for future generations

3. Which is more common, waste-to-energy or landfilling?

Across the United States, landfilling is more common than waste-to-energy, in large part due to lower short-term costs and land availability. Certain regions of the country and of the world have more waste-to-energy facilities, driven by efforts to reduce landfilling and capture energy in discarded materials, as well as limited land availability, among other factors.

4. If waste-to-energy is preferred to landfilling, and has the benefit of generating electricity, why do we want to reduce waste?

While waste-to-energy is preferred to landfilling, there are still multiple options that are preferred, including waste reduction, repair, reuse, and recycling. These options have important benefits in reducing environmental impacts related to the production, transport, and disposal of items. Additionally, while there are benefits to waste-to-energy, especially compared to landfilling, there are also negative environmental impacts from waste-to-energy. See the waste hierarchy below. Waste-to-energy isn't the least preferred option, but it only beats out landfilling. We want to aim for the most preferred options in the hierarchy.



Find more resources at
RecyclingandEnergy.org/education/k-12-lessons

R&E Lessons | Ramsey/Washington Recycling & Energy views waste as a resource stream and works to extract maximum value from discarded materials. View lesson videos and find helpful resources by scanning the QR code or visiting RecyclingandEnergy.org/education/k-12-lessons

