



Introduction

Metro initiated the Solid Waste Roadmap's Long Term Management of Discards project to explore whether there are viable and desirable alternatives to landfills for the final disposition of a portion of the garbage from the greater Portland area. This is the waste that is currently sent to landfills after extensive prevention, reuse and recycling efforts.

Background

After examining dozens of potential options that are in use, being tested or being considered all over the globe, Metro staff concluded that only five options, aside from landfills, needed further investigation. To further this investigation, Metro asked industry to provide expressions of interest to include examples of their success, ability to perform in our region and an estimate of cost and benefits of their process.

From review of 19 expressions of interest, Metro staff concluded that only advanced material recovery (AMR) and waste-to-energy (WTE) would be commercially viable. In addition, Metro staff considered the one expression of interest for WTE from a local company, Covanta, to be of special interest because it would not require completely new construction.

Metro Staff recommended that AMR be reconsidered after Metro implemented a comprehensive food scraps recovery program because removing food scraps could improve efficiency in recovering additional materials from the garbage. Staff also recommended further research on the possibility of sending a portion (200,000 tons per year or 15 percent) of the region's garbage to Covanta's WTE facility in Brooks, Oregon.

Metro Council agreed with the staff recommendation to look more closely at an option to send garbage to Covanta and directed staff to conduct a Health Impact Assessment (HIA) to determine whether there might be health and environmental benefits to this option. This HIA is the first phase in evaluating whether Metro should pursue a contract with Covanta to manage 200,000 tons of the region's garbage each year.

Metro hired HDR to conduct a rapid HIA and Multnomah County staff to assist Metro as subject matter experts in HIA delivery. For comparison purposes, Metro directed HDR to also look at health impacts for sending the same amount of garbage to a generic landfill 150 miles away (presumed to be located in the eastern Columbia Gorge).

As the name "rapid" HIA suggests, this process relied on existing research and very limited public engagement. Staff engaged several stakeholders to review and advise the initial scoping of the research and the final evaluation document. This stakeholder group consisted of public health experts, advocates in the field of toxics reduction, environmental justice and Physicians for Social Responsibility.

The evaluation and comparison of landfill and WTE options in this HIA process are not transferable to other regions of the state or to circumstances of individual companies within the Metro region.

Metro Staff Report for Landfill and Waste-to-Energy Health Impact Assessment, July 2017

Key Findings

1. Existing monitoring and testing programs surrounding WTE facilities did not find a predictive or actual increase in health poor health outcomes, including for those in vulnerable or sensitive populations, such as children or the elderly. Waste disposed at an expanded Covanta facility or generic eastern Columbia Gorge landfill facility is not expected to result in appreciable, measurable ground level pollutant concentration increases.
2. There would not be a significant impact on air quality, soil, surface water or groundwater based on facilities' permit conditions and monitoring requirements for chemical release; this includes ash disposal.
3. There is a lack of agreement in scientific and regulatory communities as to how greenhouse gas (GHG) emissions from the two waste management options should be considered. HDR used two models to determine GHG emissions and they produced very different results for both landfill and WTE; one model favors landfill and the other WTE.
4. At either facility, a major fire could pose a significant threat to workers and the surrounding communities.
5. If a significant seismic event were to occur in either the area of the Covanta WTE Facility or the Generic Landfill, it could have significant negative health consequences.
6. The vehicle miles traveled to the landfill in the eastern Columbia Gorge would be twice that for travel to the WTE facility in Brooks, with commensurate increases in vehicle emissions and accidents. However, the impact to emissions and accidents is negligible relative to the high volume of traffic that exists along these travel routes.
7. WTE generates 13 MW of electricity compared to 1.3 MW of electricity for the same amount of waste in the generic landfill option.
8. Odor, ground water and pathogen exposure were determined to not be an issue for properly managed facilities.
9. The report found that in the community of Brooks, 1 in 4 residents is a person of color and 1 in 5 lives below the federal poverty line.
10. Youth, older adults and people with chronic illness are among those who could be disproportionately affected, if there are impacts.

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If the Metro Council were to choose to continue investigating waste-to-energy as an alternative to landfills, stakeholders, Metro staff and consultants suggest that:

1. A Best Available Control Technology analysis and a dispersion modeling demonstration of compliance with National Ambient Air Quality Standards (NAAQS) could be conducted to confirm the assumptions in this assessment.
2. A comparison of modeled ground level chemical concentrations against other international health based standards could be undertaken. This would include baseline air monitoring and detailed dispersion modeling.
3. A Human Health Risk Assessment (HHRA) would better illuminate the exposure risk and quantify the risk of illness.
4. A review be conducted of the best available monitoring practices that are in use today to ensure that operating conditions are being met and health and environmental impacts are known.
5. Consensus should be reached on the best approach for determining GHG impacts.
6. Covanta should be encouraged to seek options for use of ash in aggregate and cement.
7. Covanta should be encouraged to seek options for use of steam in nearby Brooks.
8. An emergency response plan for an expanded Covanta Marion facility should be developed that details fire action plans and potential for other industrial releases.
9. Covanta should prepare a site-specific hazard report to identify areas of seismic concern.
10. A road plan should be created for the Covanta expansion to ensure ongoing integrity of the roads in the vicinity of the facility.
11. Covanta, Metro and or Marion County should hold meetings in Brooks to inform and gain input from the local community.
12. Covanta should commission a study that will further localize the economic impact of the Marion County facility expansion. This should include an assessment of employment and the direct benefit to workers and the local economy. In addition, Covanta should consider if there would be an opportunity for local employment of residents from Brooks and surrounding communities.
13. Metro should ensure that any landfill used for disposal of the region's garbage or ash from WTE be reviewed for compliance with regulations and local codes.
14. A more focused study of the demographics near Brooks could be completed to better assess the health equity and environmental justice impacts of the proposed expansion of a WTE facility.
15. Metro should consult with Oregon Department of Environmental Quality to confirm whether additional environmental regulations will or should be established to protect human health and the environment, with specific consideration of the impact of potential Cleaner Air Oregon regulations.

Metro staff may develop additional suggestions following a discussion with the Solid Waste Alternatives

Metro Staff Report for Landfill and Waste-to-Energy Health Impact Assessment, July 2017

Advisory Committee.

Summary

- The HIA did not find a compelling environmental or public health benefit to WTE.
- Based on existing data, both the landfill and waste-to-energy options could be implemented with negligible impacts on health risks from air pollution.
- The HIA primarily relied on literature review, and there are concerns that while waste-to-energy facilities in general, and Covanta Marion in particular, rarely exceed the established regulatory limits for emissions of different particles, these do not necessarily indicate that the public's health is protected.
- Greenhouse gas modeling is inconclusive as to whether landfill or WTE options is best for climate change.
- There are differences in the two waste management technologies when it comes to accidents and malfunctions. However, fires are the most significant risk at either type of facility, the prevention of which is dependent upon local operations and management.
- Vehicle miles traveled are about 50 percent lower for WTE (due to Brooks being closer to the Metro region), and thus related emissions and the likelihood of accidents are lower. Neither option would significantly change emissions or accidents due to overall high traffic volume on Oregon's highways.
- Waste-to-energy generates about 10 times the amount of electricity per ton of waste compared with methane-to-energy generation in a landfill.
- Equity and environmental justice concerns are not adequately addressed in a rapid HIA.

Options for moving forward

1. Council could direct staff to do a more in-depth study of the health and environmental impacts of waste-to-energy
 - Would add another 24 months to the review at a cost of approximately \$500,000
 - Would look more deeply at emissions levels potentially affecting public health within reasonable distances from the facility
 - Would more fully assess the environmental impact of an expanded Covanta facility
 - Would undertake community engagement in Brooks about the impacts of the Covanta Marion facility on jobs, health, other burdens and benefits
2. Council could direct staff to immediately begin work with Covanta to identify financial proposals and costs for the Council's review. This would likely take another 6-12 months.
3. Council could direct the staff to take no further action on the WTE option.