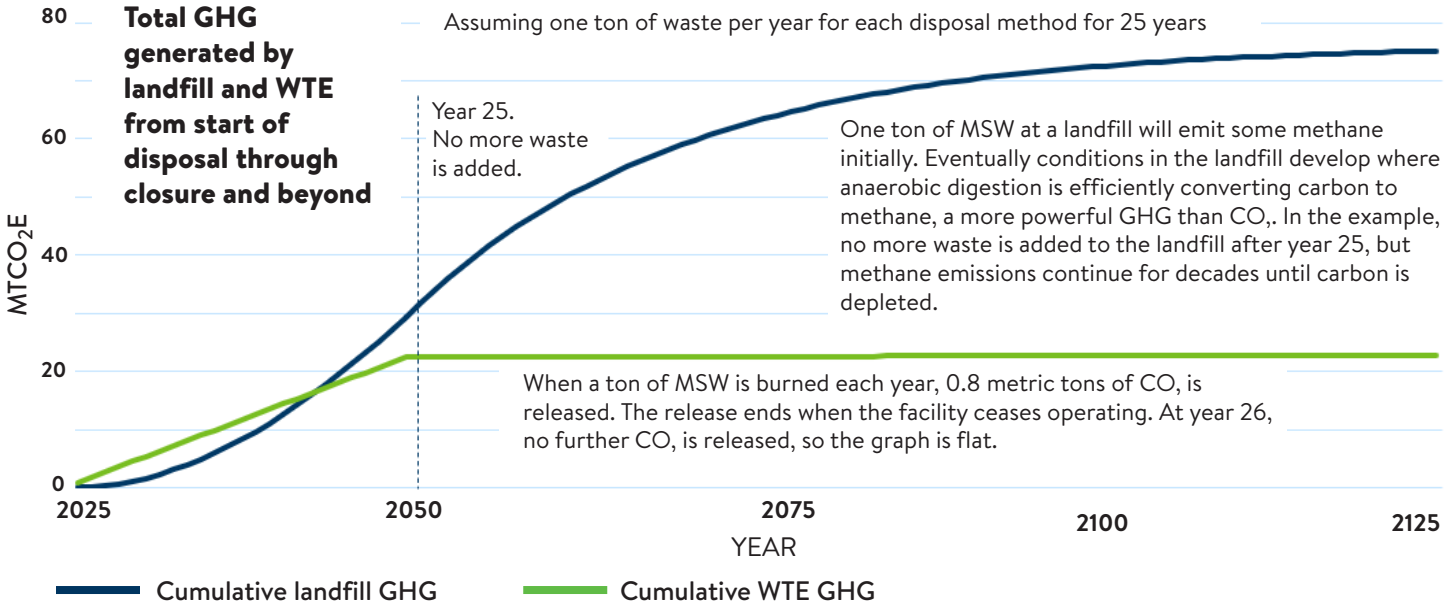
Waste-to-energy use in the metro area

Excerpt from the Metropolitan Solid Waste Management Policy Plan

The Waste Management Act identifies a hierarchy that the MPCA is bound by statute to follow, which outlines waste-to-energy (WTE) is preferred over landfills. The following items support this preference for WTE over landfills as a method for waste disposal.

WTE has a significantly smaller climate impact. Landfills produce over three times the amount of GHGe compared to WTE. While operational, the GHGe are similar from WTE and landfills. There is a stark difference at end-of-life. Landfills continue to generate GHGe for decades after closure, while WTE facilities only emit GHGe while operational.



After closure, landfills continue to create pollution. Beyond the creation of GHGe, landfills continue to create leachate with contaminants in it. Unless properly managed, leachate can seep into groundwater. Leachate that goes to wastewater treatment plant in part ends up in surface waters due to lack of treatment technologies for many of the contaminants.

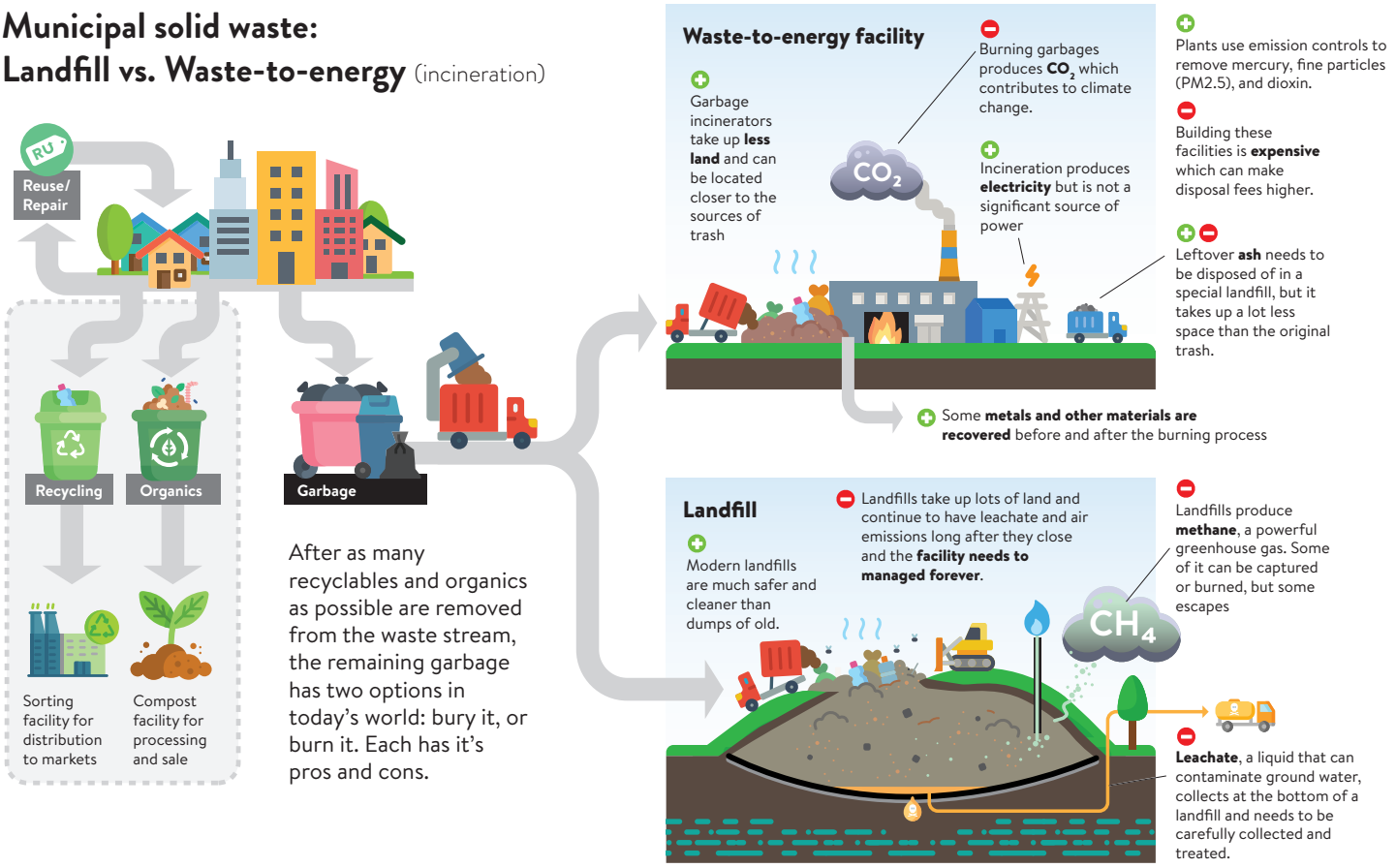
WTE recovers more materials and energy compared to landfills. A portion of the MMSW delivered to resource recovery facilities is diverted to be recycled or recovered for organics management, which is counted as recycled in the objectives in Table 2 and Table 3 (see table footnotes). WTE generates heat and power that contributes to the power grid across the state. Without WTE facilities, additional heat and power must be generated through other methods, which can include burning natural gas or coal to make up the difference.

WTE provides other useful services. WTE facilities are used to destroy pharmaceuticals and drugs for law enforcement departments. Disposal of pharmaceuticals in landfills leads to additional contaminants in leachate, that are not treated.

While WTE has benefits compared to landfilling, the waste hierarchy prioritizes waste reduction, reuse, recycling, and composting over WTE.

Air emissions from WTE and landfills, while meeting state and federal standards, contribute to the overall impacts experienced by neighboring communities. Landfills and WTE facilities located in or near environmental justice areas have a negative impact on communities already overburdened by pollution. WTE facilities in general produce more dioxins, furans, lead, and NOx (nitric oxide), while landfills create more fine particulate matter (PM10 and PM2.5), CO (carbon monoxide), methane, and VOCs (volatile organic compounds).

Municipal solid waste: Landfill vs. Waste-to-energy (incineration)



The MPCA acknowledges the impacts to residents near WTE facilities and landfills that the past siting of facilities disproportionally impacted disadvantaged communities. Reducing our reliance on WTE facilities and landfills through waste reduction and increased reuse, recycling, and organics recovery is the best way to avoid shifting pollution from one environmental justice area to another. Only then would it be appropriate to set a timeline for taking facilities off-line.

The MPCA supports managing waste as high on the waste hierarchy as possible, as is evident from the strategies in this plan. The solid waste system of the TCMA is not prepared for closing WTE facilities without development of needed infrastructure, programing, and education. The closure of the Elk River WTE facility resulted in increased landfilling, rather than increasing recycling and composting.

On October 24, 2023, the Hennepin County Board passed a board action resolution that instructs county staff to develop a plan for the closure of HERC between 2028 and 2040. Considering the Board's decision, MPCA expects Hennepin County to develop a contingency plan consistent with the expectations under strategy 12. Ensure there are contingency plans in place if for large facility closures in order to reduce the likelihood of landfill reliance. Changes in management strategies involving large volumes of waste will have regional and potentially statewide

impacts. Planning and resource investments are needed to ensure subsequent waste management systems minimize environmental impacts, are cost effective and do not result in increased burdens in communities already experiencing environmental justice concerns.

Existing resource recovery facility capacity serving the TCMA

MMSW processing facility	Permitted capacity	Greater Minnesota: forecast tons per year	TCMA: forecast tons per year	Total: forecast tons per year
HERC	365,000	0	365,000	365,000
REC	450,000	0	450,000	450,000
City of Red Wing	36,000	23,000	13,000	36,000

Interested parties in the public and private sector need to work collaboratively to improve processing of collected materials in a way that will capture more recyclables and assess the efficacy of policies.

The MPCA has regulatory authority to ensure implementation of ROD (Minn. Stat. § 473.848) and public entity requirements (Minn. Stat. § 115A.471), both of which require processing of MMSW. Hennepin County and jointly Ramsey and Washington counties have successfully directed waste to their own processing facilities. Designation in Goodhue County has stabilized the base amount that Red Wing receives with tonnage being supplemented with contract waste from two cities in Dakota County. These efforts have allowed the three facilities to operate at full capacity. If there are delivery shortages of waste at the resource recovery facilities listed above, the landfills are obligated to fill the shortage or stop accepting waste. The MPCA expects that operational WTE facilities will continue to run at full capacity going forward.

Required strategy:

The strategy listed below is required to be incorporated into the CSWMP because it is relatively simple or has significant environmental benefit.

58. Counties must continue to support the implementation of Minn. Stat. § 473.848 Restriction on Disposal. Operating resource recovery facilities at full capacity is important. Continue to require delivery of county waste to WTE facilities, if available. Submit timely ROD reports. Continue to actively participate in the quarterly certification process. Facilitate communication between facilities.

Read the full plan at: *https://www.pca.state.mn.us/sites/default/files/w-sw7-22.pdf*