2019 SCORE report

The Minnesota Pollution Control Agency (MPCA) annually publishes a report on the Select Committee on Recycling and the Environment (SCORE) activities that summarizes information submitted by all 87 counties and the Western Lake Superior Sanitary District (WLSSD) regarding their SCORE activities. The MPCA uses SCORE to detail trends in waste generation, management, and disposal. Data trends are used to help the MPCA and local units of government develop sound policy and plans to manage waste in a manner that protects the environment and human health.

Reduction

Reuse

Recycling

Waste to Energy

Landfilling

Region
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All

In the calendar year of 2019 for All (Metropolitan Area), municipal solid waste (MSW) decreased year-on-year (YOY) (-1.3%). The combined recycling and organics rate is 47.1% in 2019 which is a -2.9% change YOY from 2018 numbers.

Statewide, the recycling rate is 43.5%. and additional waste was sent to landfills in 2019 vs 2018 due to the closure of Great River Energy which provided Waste-to-Energy (WTE) capacity in the Metro area and surrounding counties.

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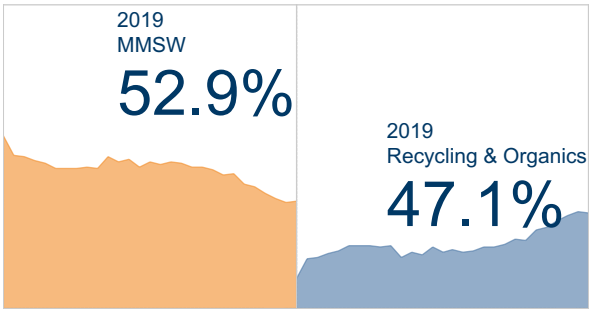
2019 Overview

Total MSW generation

2018 Total MSW Tons
3.33M

2019 Total MSW Tons
3.29M
-1.32%

MMSW and Recycling rates from 1991 to 2019



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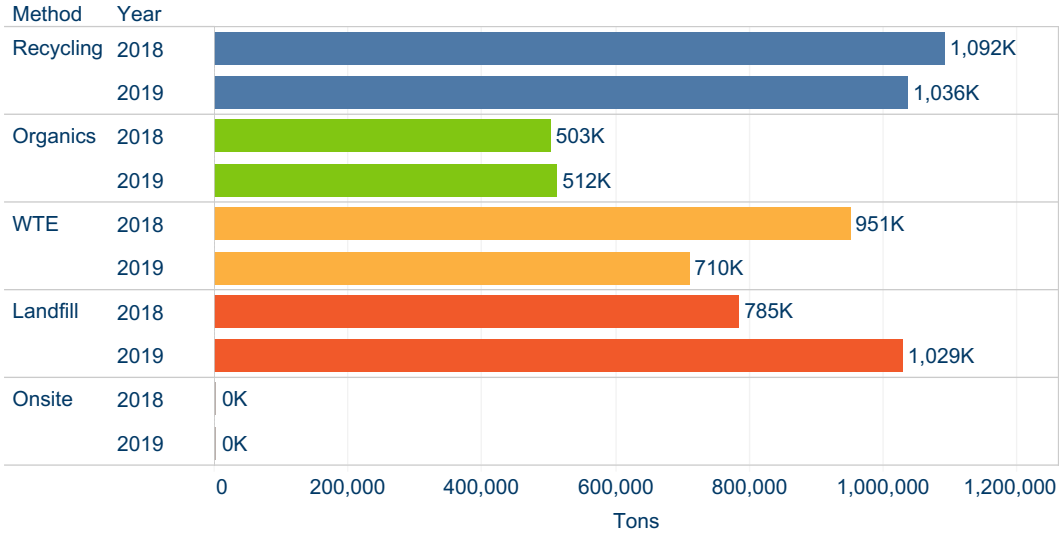
Waste management methods - year on year (YOY) comparison



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Method
- Recycling
- Organics
- WTE
- Landfill
- Onsite

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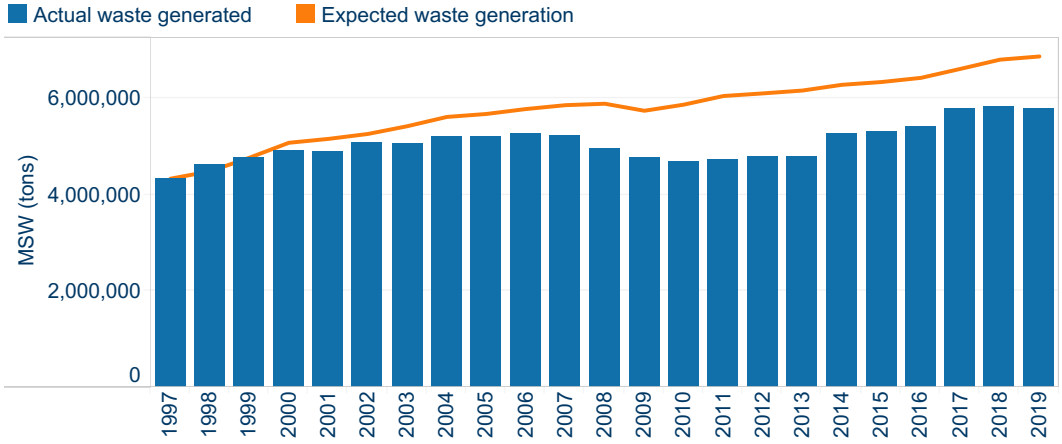
Source reduction (adjusted for inflation)

Preventing waste is the **only** way to slow or stop the upward trend of total waste generation in Minnesota. Source reduction, or waste prevention, means not generating any discards in the first place – nothing to compost, recycle, burn, or bury. While waste prevention is known to be environmentally and economically beneficial, documenting and tracking efforts is challenging. How do you measure what's not there?

The MPCA uses the Environmental Protection Agency's recommended method that uses Personal Consumption Expenditure (PCE) to project the amount of expected waste generation with a historical rate as the baseline. The graph below projects annual waste generation if Minnesotans continued to discard at the 1997 generation rate (tons of waste generated/$ million spent).



Statewide, Minnesotans are generating less waste than expected based on projections using the 1997 rate. There is a dip in the actual waste generated numbers during the national 2008 recession which extends into 2010, mirroring the economic recovery period. Since 2011 there has been a steady upward trend in waste generation. Potential explanations for the difference between expected and actual generation includes transitions over the past couple decades to more lightweight or streamlined products and transitions to more digital services.

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Link to EPA's Source Reduction Calculation Method

Environmental impacts - moving beyond tonnage

Quantifying the environmental footprint of materials, in addition to their tonnage, tells a more complete story of waste in Minnesota. In addition to tracking a weight-based recycling goal, the MPCA is modernizing its program targets and documentation of waste through life cycle assessment (LCA). This measurement will better serve Minnesotans by highlighting opportunities for reducing greenhouse gas emissions currently caused by inefficient and ineffective management throughout a material's life cycle.

For the following pages, the MPCA entered reported tonnage into the Environmental Protection Agency's (EPA) Waste Reduction Model, or WARM. This model calculates the greenhouse gas emissions based on material category and management method. Negative numbers represent a savings in greenhouse gas emissions, which is an environmental benefit. Positive numbers represent generation or release of greenhouse gas emissions.

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Combining capture rates with materials' LCA data can help prioritize actions and set material-specific targets that yield the greatest environmental benefit. For example, glass and cardboard have similar capture rates. Without LCA data, the assumption may be to set similar management goals for both materials given this similarity. However, accounting for the GHGe savings from recycling both materials shows recycling cardboard results in a greater environmental benefit (savings of 3.14 MTCO2e per ton) than recycling glass (savings of 0.28 MTCO2e per ton). This can help direct limited resources and programming by focusing recycling processing and market development on cardboard, and then investing in glass reuse strategies, such as bottle bills and bottle wash lines. For most material types, "prevention" yields the most savings in MTCO2e.

WARM can model GHGe savings for several material types when prevention is used, but it requires counties to report waste accurately and consistently, because a baseline number must be established before documenting tons prevented.

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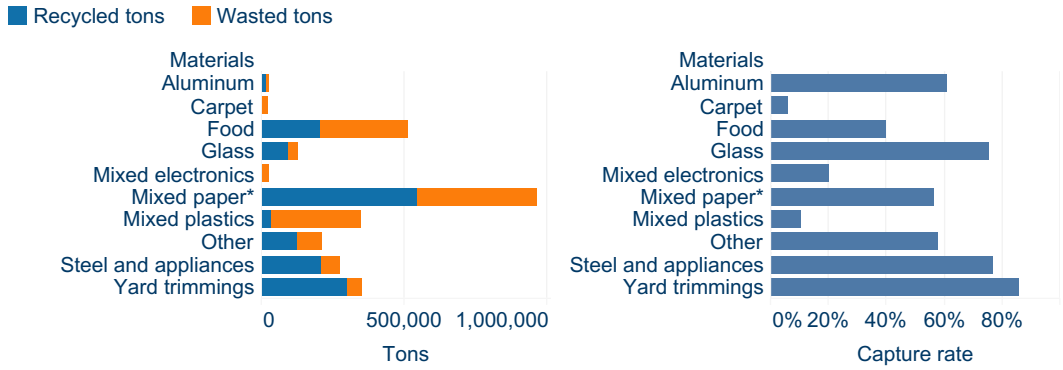
Capture rate by material

By accounting for the total discarded amount of a *specific material*, capture rates inherently set a target for how much additional material is available to capture for recycling. In the current system, it's unrealistic to achieve a *recycling rate* of 100% as not all of the material Minnesotans discard can be recycled easily. In an ideal scenario, it would be feasible to reach a 100% *capture rate* for some traditionally recycled materials (like aluminum). As the chart below shows, some materials already have relatively high capture rates statewide, like mixed paper and steel and appliances. This means of all the discarded mixed paper, Minnesota is capturing about 53% for recycling in 2019.



Materials	Recycled tons	Wasted tons	Total generation	Capture rate
Mixed paper*	545,699	419,102	964,801	56.6%
Food	204,303	309,544	513,847	39.8%
Yard trimmings	302,447	48,692	351,140	86.1%
Mixed plastics	36,273	311,283	347,556	10.4%
Steel and appliances	212,005	63,039	275,045	77.1%
Other	123,139	89,299	212,439	58.0%
Glass	97,468	31,302	128,770	75.7%
Aluminum	16,544	10,544	27,088	61.1%
Mixed electronics	5,447	21,303	26,750	20.4%
Carpet	1,215	19,913	21,128	5.7%

* includes boxboard and cardboard

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Link to 2013 Statewide Waste Characterization Study

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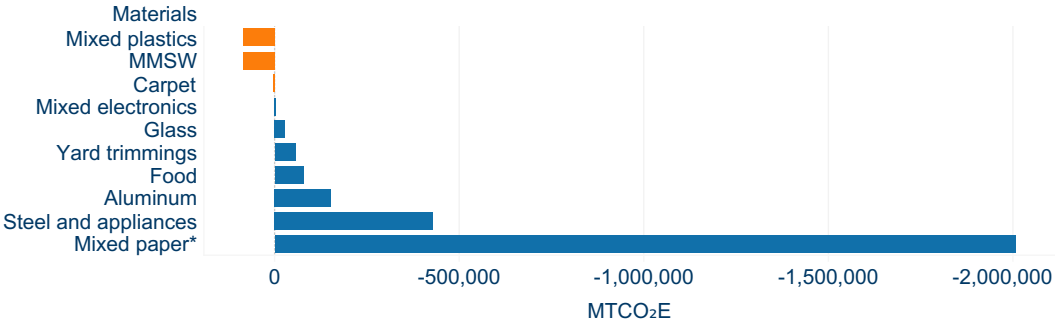
Estimated greenhouse gas (GHG) emissions and savings by material

All estimates of GHG were calculated using EPA's WARM. There were additional materials collected for recycling that could not yet be modeled through WARM. The tonnage not used was 123,139 and represents 3.7% of the total generation.



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The table below displays the source of the GHG emissions or savings in metric tons of CO_2 equivalent for each material by end of life management method per WARM.

Materials	Source reduction	Recycling	Composting	WTE	Landfill	Total
Mixed plastics		-37,395		121,800	3,730	88,134
MMSW	0	0	0	-19,938	105,927	85,989
Carpet		-2,893		6,169	270	3,546
Mixed electronics		-4,299		3,086	255	-957
Glass		-26,910		406	375	-26,128
Yard trimmings		0	-44,252	-4,490	-5,180	-53,922
Food	-144,696	0	-8,622	-23,274	99,280	-77,312
Aluminum		-151,005		169	131	-150,705
Steel and appliances		-388,410		-40,850	755	-428,504
Mixed paper*		-1,934,787		-109,494	35,455	-2,008,827
Grand Total	-144,696	-2,545,699	-52,874	-66,416	240,998	-2,568,687

* includes boxboard and cardboard

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Greenhouse gas emissions summary

Total estimated GHG savings for All (Metropolitan Area) in 2019

2,568,687

Metric Tons of CO_2 Equivalent

This is equivalent to one of the following:
- Removing annual emissions from 545,000 passenger vehicles
- Conserving 289 million gallons of gasoline
- Conserving 435,000 homes' electricity use for one year

The MPCA supports a sustainable materials management (SMM) framework. SMM is a systematic approach to minimizing the total environmental impacts of materials over their entire life cycles, including product design, raw material extraction, production, use (and reuse), and best management when discarded. SMM includes traditional solid waste management, but is also concerned with the larger scope of materials and the toxic chemicals used to manufacture those materials.

This is the first SCORE report to include environmental impact calculations for certain material types. This addition aligns with a key policy recommendation in the 2019 MPCA Solid Waste Policy Report, calling for integration of “alternative measures to weight-based reporting which encompass the environmental impacts of a material.” The goal is to document and then ultimately reduce the environmental impact of materials in Minnesota.

For more information on the recomendations made in the 2019 Solid Waste Policy Report, please go here: https://www.pca.state.mn.us/waste/solid-waste-policy-reports

For additional information about how these numbers were calculated or the emissions factors that were used, please go to https://www.epa.gov/warm

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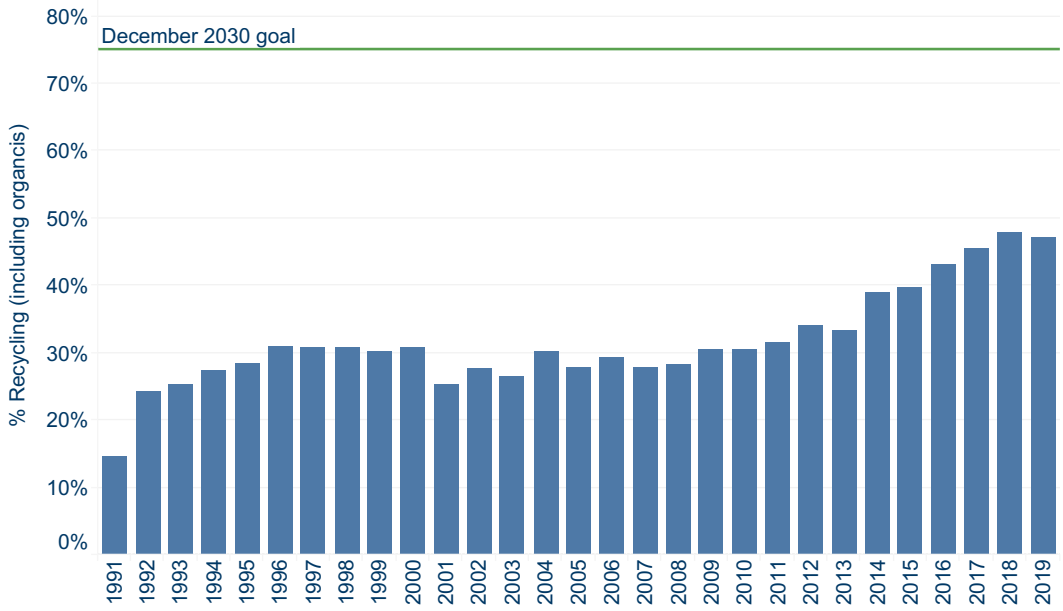
Legislative progress: combined recycling and organics rate

In 1989, Minnesota legislation set county recycling goals. Each Greater Minnesota county (outside of the seven-county Metro Area) must recycle a minimum of 35% by weight of total solid waste generation. The 2014 Legislature increased the recycling goal for the counties in the seven-county metro to the following: by December 2030, counties in the Twin Cities metropolitan area will be required to recycle 75% of the solid waste they generate.

Note: All tonnages reported in the SCORE report are documented, all estimated tonnages have been removed from the data and are not included in the reported recycling rates. Credits for yard waste and source reduction have been discontinued and are not included in the recycling rates which could impact historical rates by as much as 8%.



Region
- Statewide
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County
All

* There is no statewide goal for combined recycling and organics rate

The evolving ton: composition of recycling tons by category

As both products and consumption change over time, the composition of what makes up a ton of recycling also changes. Statewide, recycling tonnages dropped across all major categories. Reporting challenges due to the COVID-19 pandemic may have contributed to the drop in overall recycling numbers.

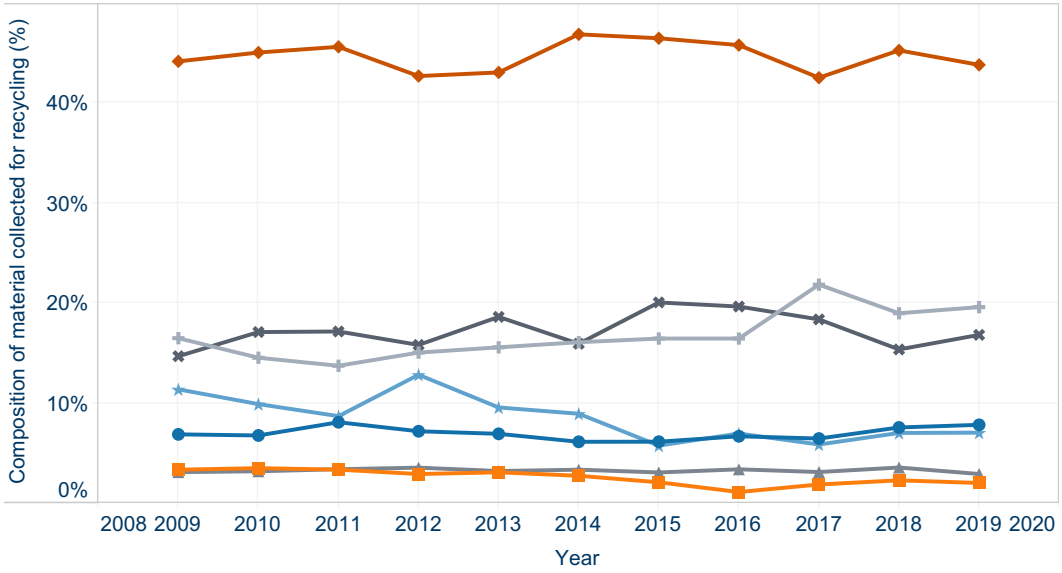
The graph type drop-down provides different ways to look at the information, including overall tons collected by category.

Yard waste has only been counted toward recycling rates since 2013, so in order to better compare to historical data, the MPCA recommends not including yard waste in the totals.

Include yard waste?
No

Graph type
Line graph

Year
2009 to 2019



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- Glass
- Hazardous
- Metal
- Organic
- Other
- Paper
- Plastic

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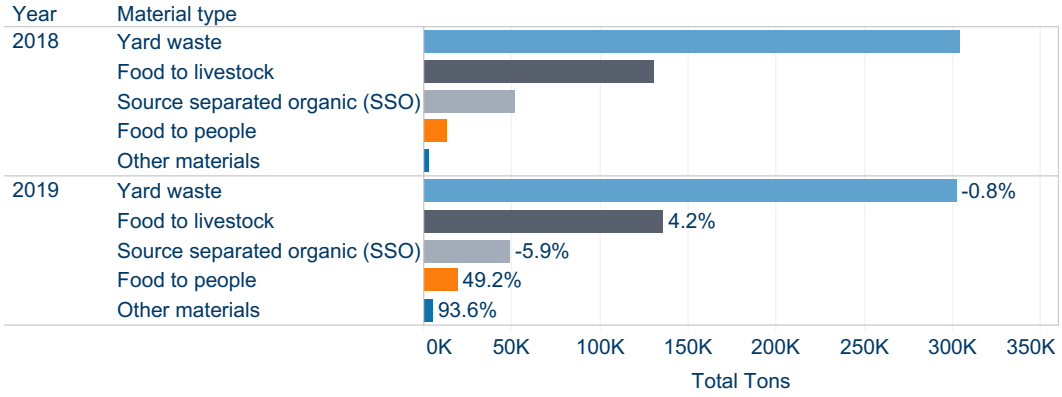
Focus on food: organics reuse and recycling

Organic materials including wasted food, food scraps and compostable products, are prominent in the trash Minnesotan's throw away. Food is very resource intensive to produce – making it especially important to use instead of sending to disposal or recovery. The prominence and value of food and organic materials make them a priority for waste prevention and recovery.

2019 data indicates that organics recycling declined in 2019 as compared to 2018. However, the decline in reported figures may be at least partially attributable to difficulty in getting information for reports. For example, residential collections increased in many communities, but the drop in statewide source separated organics (SSO) was almost exclusively from commercial sources. County partners often rely on gathering data directly from businesses and may have encountered difficulties gathering this information.

In contrast, food-to-people reporting improved in 2019 which likely explains at least some of the increase seen in that category. The MPCA made it a priority to gather data from the large food banks in the state and report these food rescue numbers in the 2019 SCORE report. MPCA has also provided grant funds aimed at prevention of wasted food and food rescue in recent years with more funds available in calendar year 2020.

Capacity for SSO continues to be a challenge even as interest in getting commercial and residential programs remains robust. A compost facility in south central Minnesota suspended operations in June 2019, impacting SSO collections in that region. There were no new facilities, or facility expansions in 2019. Despite these circumstances, growth is expected in the next several years with a number of communities planning to implement curbside organics recycling, enhanced efforts to improve commercial organics collection, and efforts to increase organics processing capacity.



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Region
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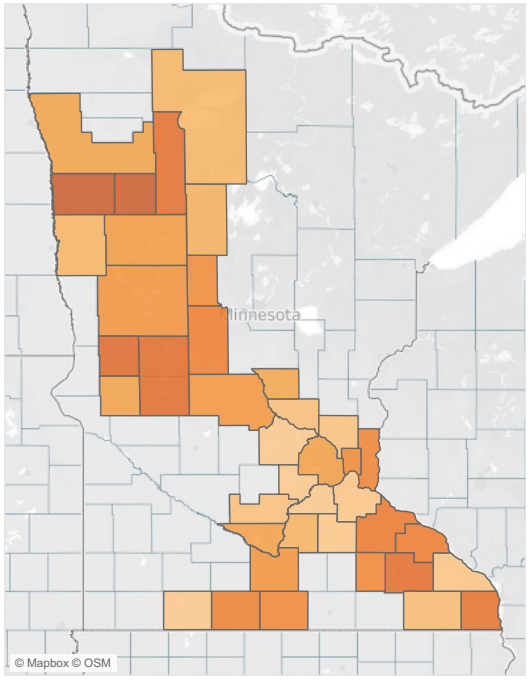
Material type
- Food to livestock
- Food to people
- Other materials
- Source separated organic (SSO)
- Yard waste

Waste-to-energy (WTE)

2019 saw a 17.8% decrease in waste-to-energy from 2018 tonnage. 2019 marked some significant changes in the WTE field.

Positive: October of 2019 marked the first month that the Red Wing Processing Facility operated at capacity, and then again in December of 2019. The first quarter of 2020 marked the first time where Restriction on Disposal requirements were met for the entire quarter.

Negative: The Great River Energy WTE Facility shut down in January of 2019. This change resulted in a significant decrease to WTE capacity (up to 420,000 tons/yr.) for Anoka, Hennepin, and Sherburne counties.



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Reset all filters

% of total tons sent to WTE

0.0% 100.0%

Year
2019

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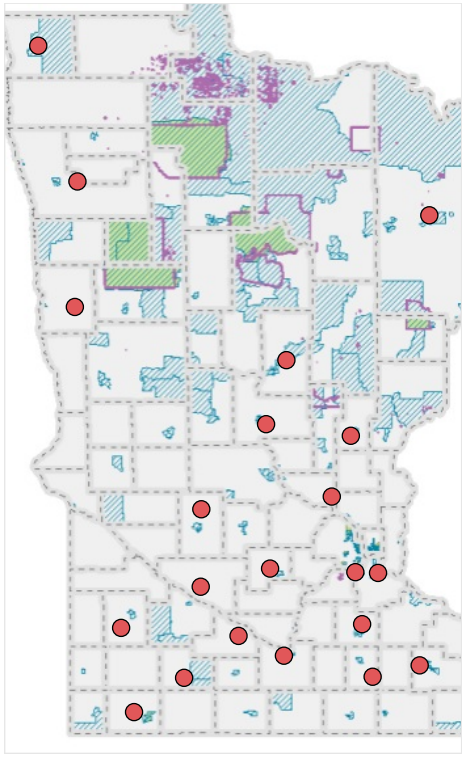
Landfilling of MSW

In 2019 there were 21 open landfills across Minnesota that accept municipal solid waste (MSW). The majority of waste generated that is landfilled is landfilled at Minnesota facilities. However, some landfills accept waste from neighboring states and the Western Lake Superior Sanitary District (WLSSD), and some waste haulers export to neighboring states.

In 2019, Renville County Sanitary Landfill stopped accepting waste as they prepare to stop their MSW operations.



Facility	Permit	Tons in 2018	Tons in 2019
Elk River Landfill	SW-74	236,791	428,532
Pine Bend Sanitary Landfill	SW-45	261,416	314,277
Burnsville Sanitary Landfill	SW-56	320,771	245,100
Spruce Ridge Resource Manage..	SW-6	152,166	188,375
East Central Solid Waste Commi..	SW-17	92,084	101,130
Ponderosa Sanitary Landfill	SW-87	55,948	74,196
Lyon County Sanitary Landfill	SW-23	31,950	52,737
Saint Louis County Regional Lan..	SW-405	51,842	52,605
Mar-Kit Landfill Board	SW-92	50,828	51,069
Rice County Landfill	SW-123	49,671	50,836
Crow Wing County Landfill	SW-376	47,216	47,291
Nobles County Landfill Inc	SW-11	41,175	45,085
Steele County Sanitary Landfill	SW-131	37,580	39,675
Polk County Sanitary Landfill	SW-124	42,042	35,965
Morrison County Sanitary Landfill	SW-15	33,247	34,921
Clay County Sanitary Landfill	SW-34	32,748	32,036
Kandiyohi County Sanitary Landfill	SW-79	30,003	31,105
Cottonwood County Sanitary Lan..	SW-143	11,318	9,694
Brown County Sanitary Landfill	SW-89	7,355	7,557
Olmsted County - Kalmar Landfill	SW-355	1,034	1,514
Renville County Sanitary Landfill	SW-90	10,683	
Grand Total		1,597,868	1,843,698

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Legend

At least 40% of people reported income less than 185% of the federal poverty level

50% or more people of color

Federally recognized tribal areas

The data are from the US Census Bureau.

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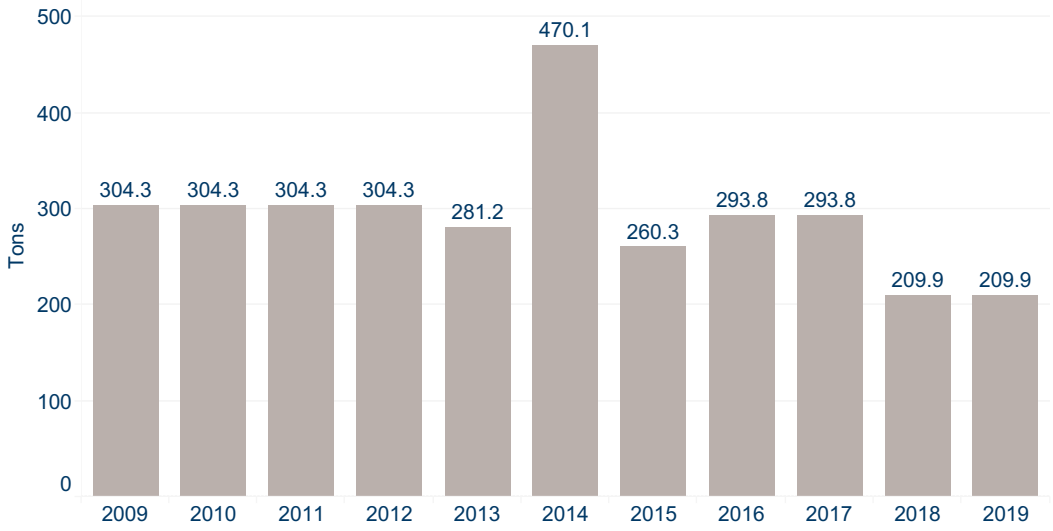
Illegal on-site disposal

On-site disposal of MSW, either burning or burying, has been an ongoing practice for many years. Although it is against the law for most people, some farmers are still allowed to burn or bury very limited types of household garbage under existing law (Minn. Stat. § 88.171 and §17.135). However, it should be noted that nearly all materials found in modern garbage are considered prohibited materials (Minn.Stat. § 88.171) and as a result, are illegal to burn for all Minnesotans regardless of the farmer exemption found in Minn.Stat. § 17.135.

The quantity of waste generated in the county that is not collected and disposed of in the formal waste management system is calculated by first determining the population without MSW collection service that does not self-haul and then using the following formula:

(# of persons x 2.3 lbs./person x 365 days)/(2000 lbs).

The result is the total tons of county waste considered to be disposed on-site each year.



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SCORE revenue and expenditures

Local revenue continues to make up the majority of the funding for SCORE programs on a statewide basis (65.4%) while SCORE grant dollars accounted for 19.2% of the funding. $89.1 million was spent on SCORE related activities statewide in 2019 which is an increase of $4.4 million over 2018 ($84.7 million). Spending on administration, recycling, household hazardous waste (HHW) problem materials, organics, and source reduction increased from 2018.

Revenue and Expenditure	Area	2018 Dollars	2018 % of total dollars	2019 Dollars	2019 % of total dollars
Revenue	Local revenue	$23,985,410	62.8%	$26,282,961	63.7%
	SCORE	$8,657,208	22.7%	$8,798,193	21.3%
	Other revenue	$5,531,178	14.5%	$6,167,499	15.0%
	Total	$38,173,796		$41,248,653	
Expenditures	Administration	$13,877,555	36.4%	$17,247,837	42.3%
	Recycling	$5,078,460	13.3%	$4,369,451	10.7%
	Education	$2,744,135	7.2%	$2,181,067	5.4%
	Organics	$2,411,842	6.3%	$2,377,954	5.8%
	Source reduction	$150,720	0.4%	$204,061	0.5%
	HHW problem materials	$8,564,433	22.4%	$9,899,620	24.3%
	WTE	$5,346,064	14.0%	$4,460,908	10.9%
	Total	$38,173,209		$40,740,899	

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