



# Olmsted County

## Solid Waste Management Plan 2022-2032

*Charting a Sustainable Path Forward*



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# Executive Summary

This Olmsted County Solid Waste Management Plan (Plan) is a roadmap to capture value from waste. The foresight of previous county leadership resulted in the current integrated solid waste management system based on Minnesota's waste management hierarchy as described in Minnesota Statutes Section 115A.02:

- Waste and toxicity reduction;
- Reuse;
- Recycling;
- Composting of yard and food waste;
- Resource recovery through waste-to-energy processing; and
- Land disposal.

This Plan continues and enhances these existing programs while paving the way toward a more sustainable future by implementing strategies that achieve positive environmental, social, and economic outcomes, including:

- The addition of a materials recovery facility, organics management programs, ash utilization projects, and enhanced construction and demolition material recovery programs.
- Expanding stakeholder engagement, regional collaboration, fostering an equitable and responsive system, and providing excellent facilities and customer service.
- Using business principles to ensure an equitable, cost-effective system.

This Plan also includes the Goal Volume Table and Budgets that outline the community's solid waste generation, solid waste management forecasts, and expenditures and revenues for the various facilities and programs. We invite you to join us in this journey to minimize waste, use waste as a resource, recycle, compost, and dispose of waste properly. Together, we will reach these goals and attain a safe, healthy, and sustainable community.

*T Hill*

Tony Hill

Director of Environmental Resources



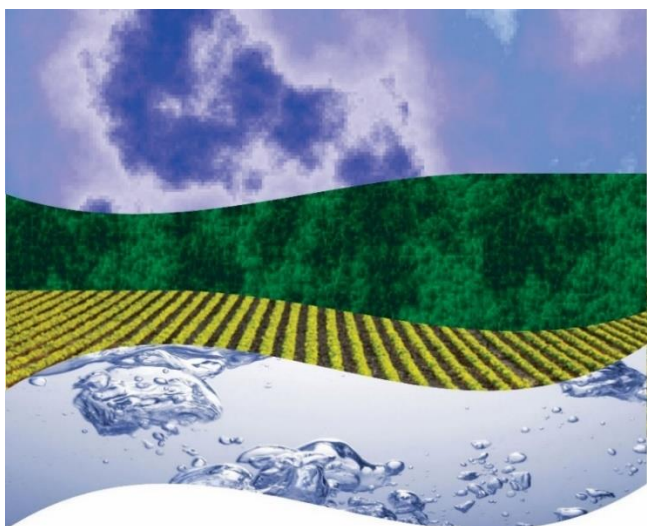
# 1. Where are we now





## Overview

The Olmsted County Solid Waste Management Plan is a path forward to achieving a Sustainable Solid Waste Management future. This 10-year Solid Waste Plan (Plan) evaluates the current solid waste system and identifies strategies, programs, facilities, and technologies that will best move the community towards a sustainable future. This Plan builds on past success and positions the County to provide sustainable waste solutions over the next 10-plus years.



## Outline of a Successful System

Olmsted County has been and is committed to protecting the people and environment in our community. The county continues to make investments in the resources and infrastructure we need to ensure our air, soil, and water are protected now and for future generations.

When it comes to solid waste management, Olmsted County uses a holistic approach by addressing avoidance, reduction, reuse, recycling, and recovery. After that, safe disposal is used as a last resort.

Located in southeastern Minnesota, Olmsted County's geology is predominantly active karst, consisting of fractured limestone bedrock with little soil cover (see Figure 1-1). The karst terrain makes groundwater susceptible to surface water contamination. In the 1980s, garbage disposal was a hot topic in the community. The Oronoco Landfill was listed as a Superfund cleanup site. There was a growing concern that leachate from the site could impact the drinking water aquifer due to the local karst features of underground fractures, fissures, sinkholes, and conduits that make the groundwater susceptible to pollution. The community could have easily decided to ship our trash to another county or state, but the leaders decided to seek a more comprehensive system and better way to deal with solid waste. Their vision and leadership resulted in an integrated solid waste management system that included a waste-to-energy (WTE) facility, a recycling center, a hazardous

waste facility, a yard waste composting site, and the development of a modern landfill that exceeded state requirements



Figure 1-1: Local Karst Geology

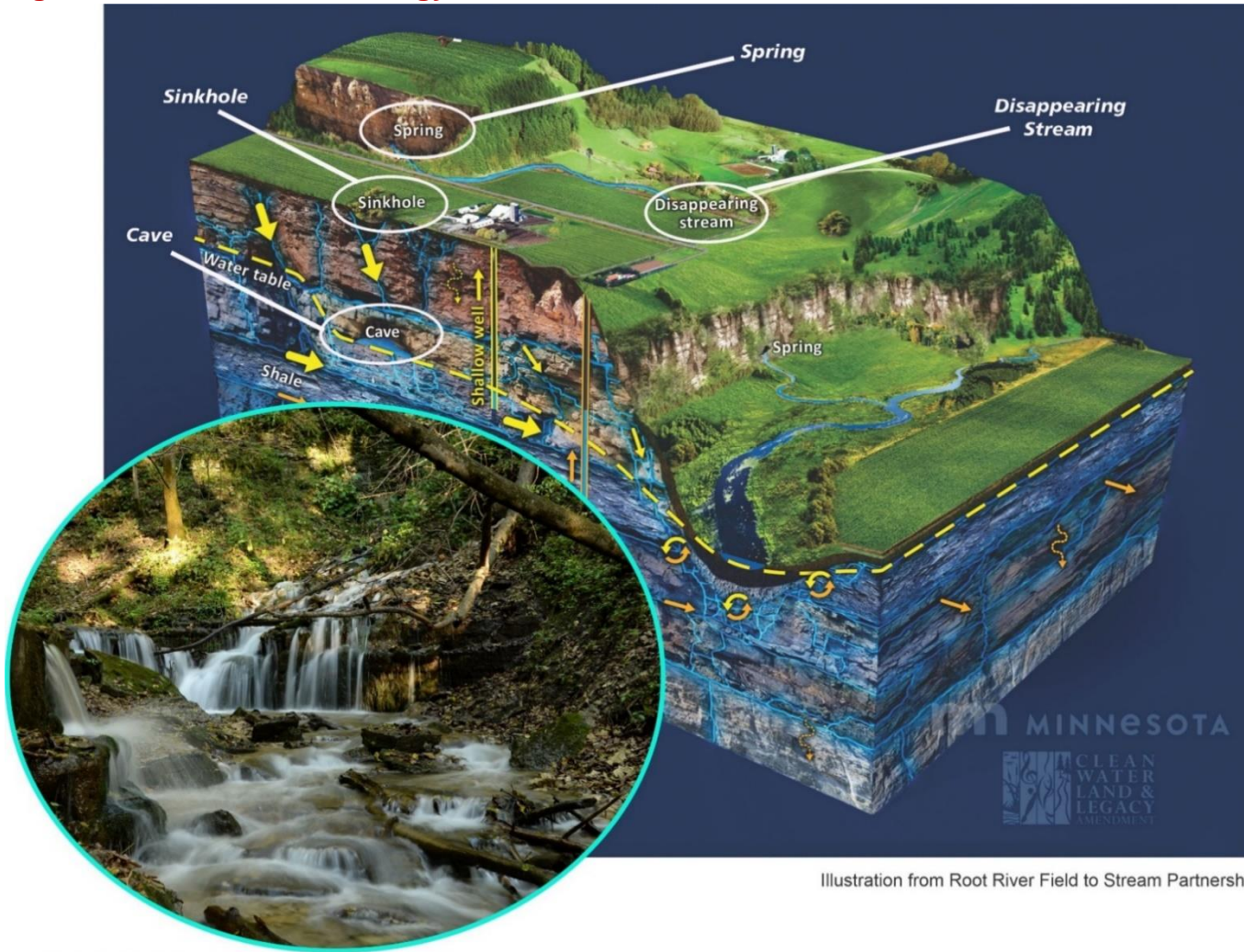


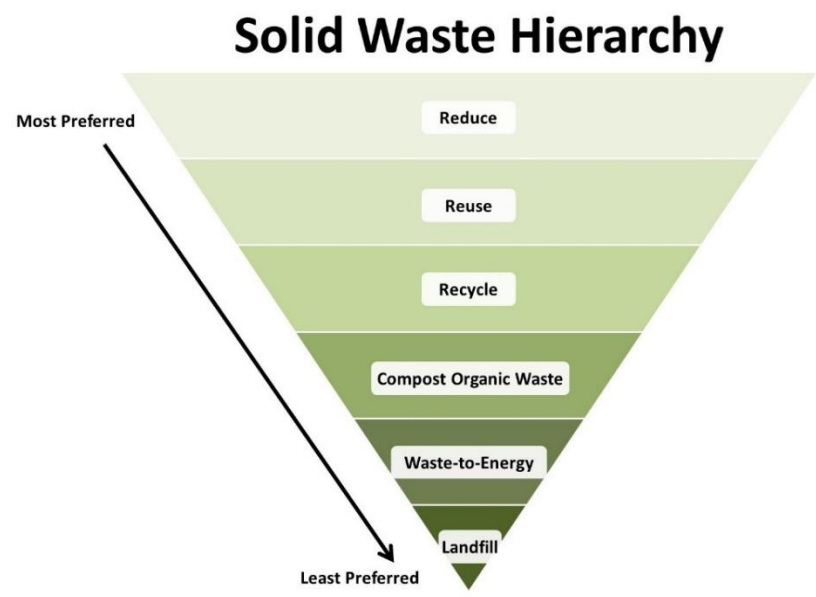
Illustration from Root River Field to Stream Partnership

Photo by Martin Larsen

## The Solid Waste Hierarchy

Olmsted County has been investing in and improving its integrated solid waste management system (ISWMS) for over 35 years to provide an environmentally protective approach to handling waste. The county's ISWMS offers a comprehensive waste prevention, recycling, composting, and disposal program for the community. The holistic system uses various waste management methods (e.g., community education and outreach, waste and toxicity reduction, reuse, recycling, composting, resource recovery, and landfilling) depending on the characteristics of the waste and following Minnesota Waste Management Hierarchy (Figure 1-2).

**Figure 1-2: MN Solid Waste Management Hierarchy**



In the past, much of the county's focus has been on expanding access to and participation on the upper end of the waste management hierarchy of reduce, reuse, and recycle. While these efforts will continue, a new, sustainable approach also involves rethinking how the county approaches waste management. It includes rethinking the term "waste" and addressing materials in terms of resource conservation. Waste prevention—also called "waste reduction"—seeks to prevent waste from being generated and removes toxic products from the waste stream. Reuse is the action or practice of extending a product's useful lifespan.

Recycling is a process that involves collecting, reprocessing, and/or recovering certain waste materials (e.g., glass, metal, plastic, paper) to make new materials or products. Composting is the recycling of organic waste rich in nutrients and can be used to improve soils. Disposal (combustion and landfilling) is the last method used to manage waste that cannot be prevented or recycled. Resource Recovery is the processing of waste to generate energy. Resource Recovery is environmentally preferable to landfilling since it helps to reduce its volume and provides a local source of renewable energy. Waste should be considered a resource, saving money and producing energy while reducing pollution. Land disposal is the least preferred option; however, landfills are an essential component in the system for material that can't be reused, recycled, or further processed. Landfills are reserved for material that other methods cannot manage.



The county recognizes the landfill as a precious resource used to safely contain specific types of wastes that cannot be managed higher on the waste management hierarchy. The opportunity to expand the site is limited due to the local Karst geology.

## Summary of the Integrated System

Olmsted County operates an integrated waste management system for its residents and businesses. The first component of the system is to provide outreach, technical assistance, consultation, and education for joint programs and services to enhance understanding of the integrated waste system, including waste processing. The operating components of the system include the Hazardous Waste Facility (OCHW), Recycling Center (OCRC) Plus, Compost Site, Waste-to-Energy Facility (OWEF), and Kalmar Landfill. These facilities together protect public health and the environment (Figure 1-3 Olmsted County Integrated Solid Waste Management System).

## Overview of the Waste Hauling System

Olmsted County owns and operates the ISWMS; however, solid waste hauling is an open market system for waste collection. Under this system, residents and businesses contract directly with private waste haulers for waste collection, recycling, and/or green waste services—residents and businesses contract with private haulers licensed to operate in the county. Residents and businesses also can self-haul their waste and recyclables

directly to the OCRC. Olmsted County plans to continue to utilize the open market system for waste collection.

Solid waste collected by the waste haulers under the private collection system is transported to the OWEF for processing or the Kalmar Landfill for disposal. Currently, recyclable materials collected by private haulers are taken to private material recovery facilities (MRFs) located outside of the southeast Minnesota region. The county offers curbside recycling for local government buildings and many other innovative programs for residents and businesses to encourage the three R's (Reduce, Reuse, Recycle) and the regulation of solid waste management in the community.



Figure 1-3: Olmsted County Integrated Solid Waste Management System

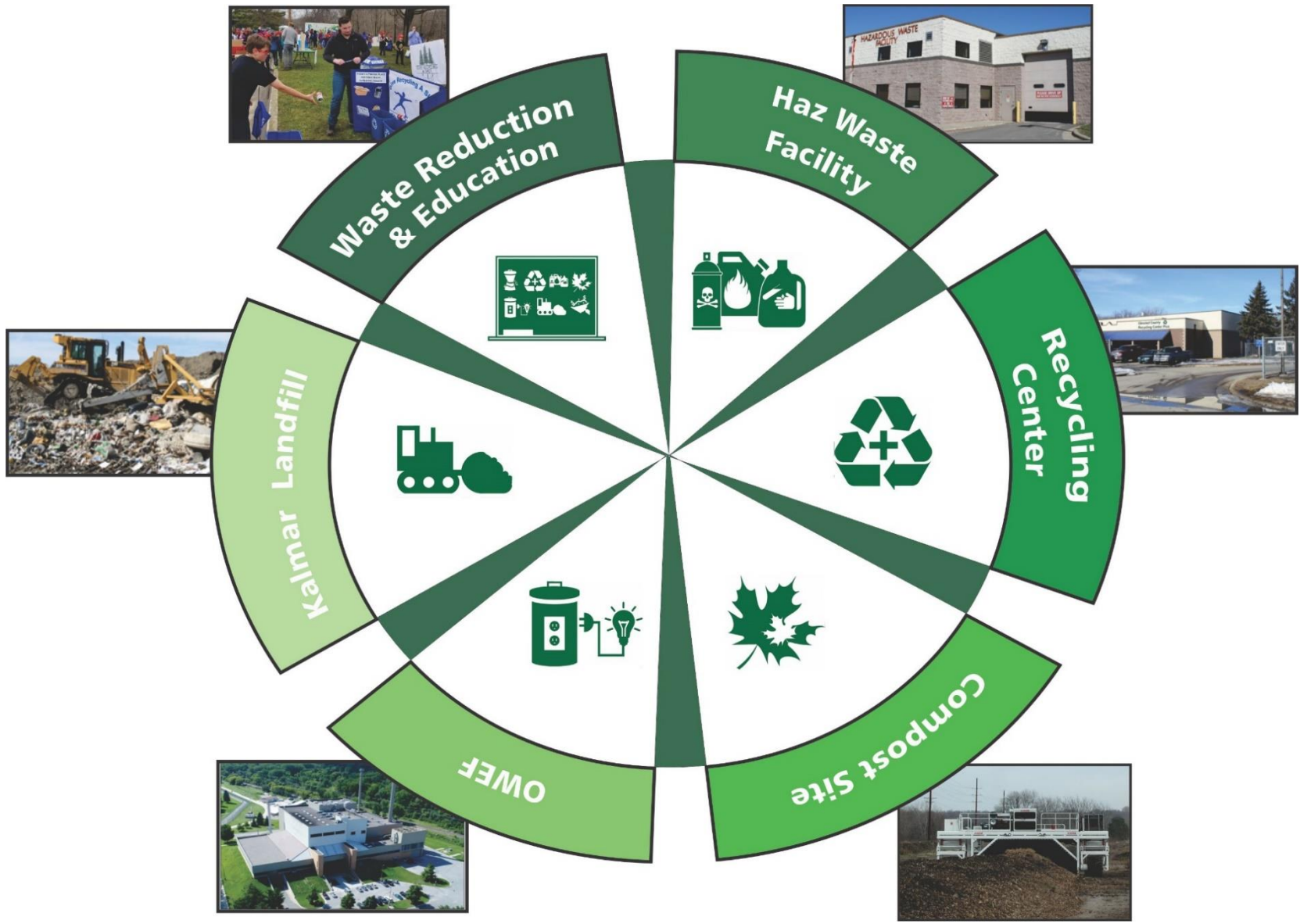
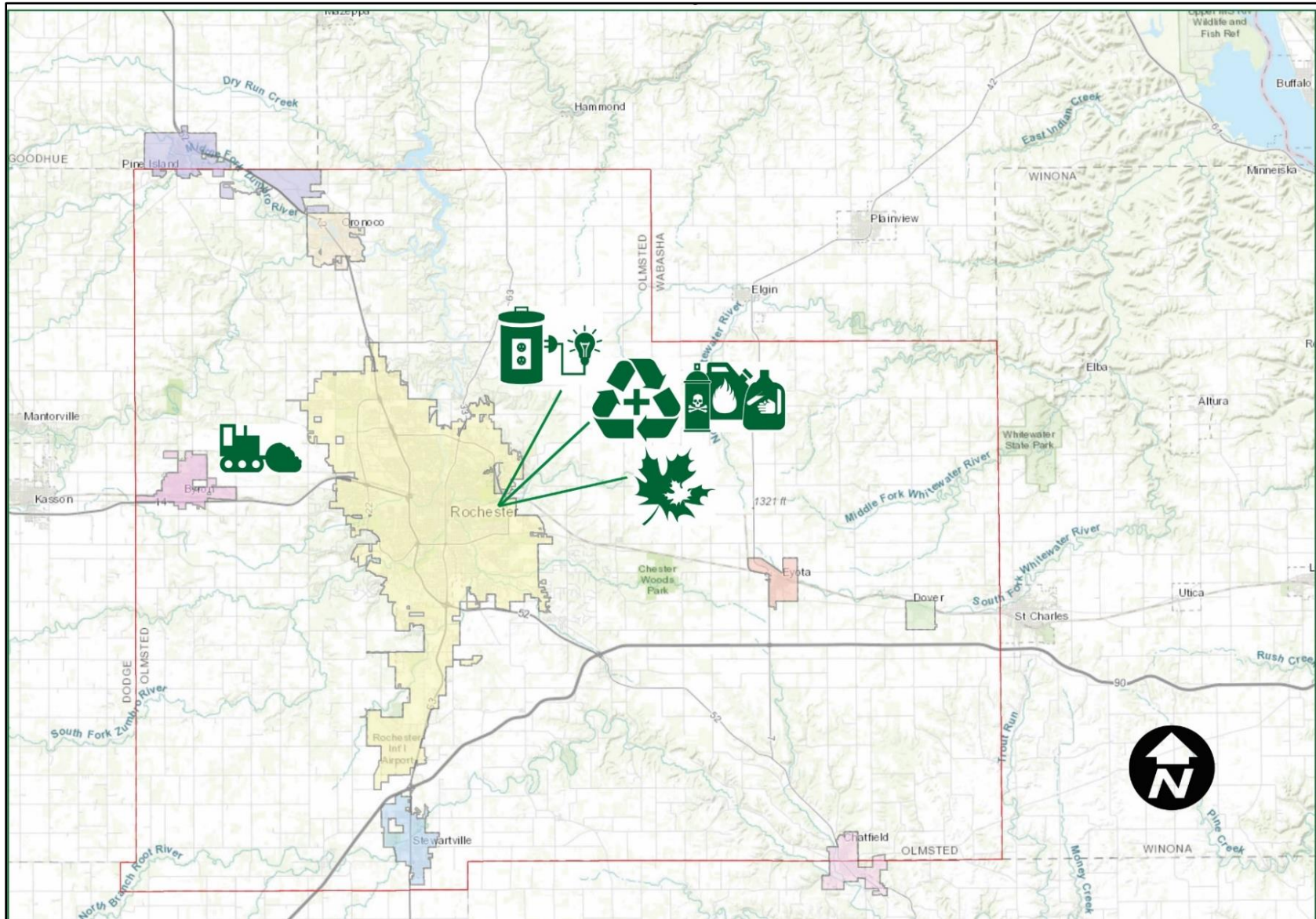


Figure 1-4: Integrated Solid Waste Management System Olmsted County Facility Locations

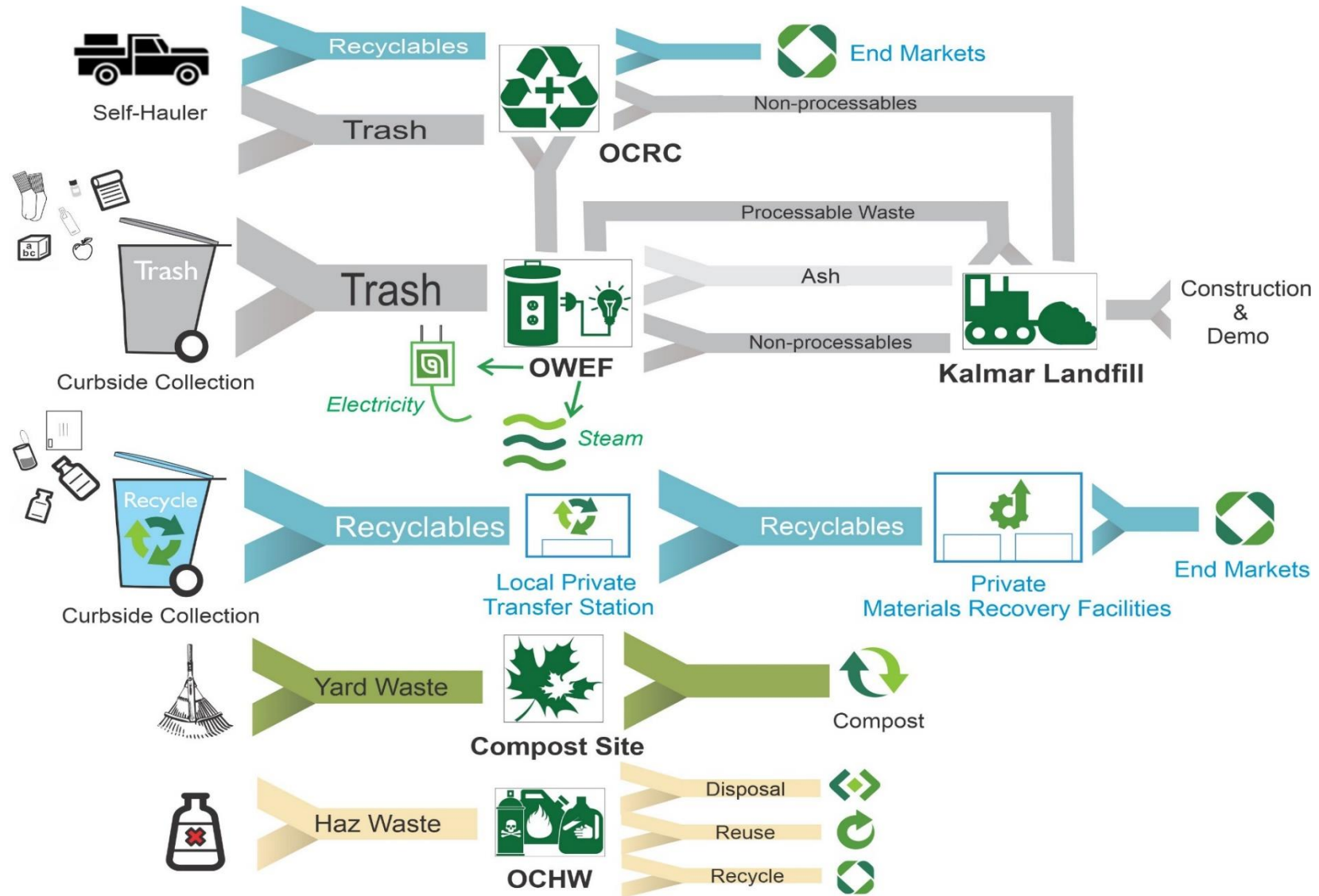


## Movement of Waste and Recyclables

Figure 1-5 provides a general overview of the collection, transfer, transportation, processing, and disposal systems for garbage, recyclables, organics, hazardous waste, and construction and demolition (C&D) debris. The vast majority of the garbage is transported to the OWEF for processing. Non-processible waste (material brought to the facility that cannot be processed due to its physical characteristics) is directed to the Kalmar Landfill for disposal. Waste is also directed to the Kalmar Landfill when the OWEF is down for maintenance. C&D debris is also direct to the Kalmar Landfill. Any processible material at the landfill is directed back to the OWEF.

All residents have the option to use a licensed commercial garbage hauler. Approximately 95 percent of the population utilizes collection services. Curbside single-stream recyclables are transported to private transfer stations and then hauled to private material recovery facilities for sorting and distribution to end markets. Approximately 3 percent of the population self-hauls their waste to the Olmsted County Recycling Center. Source-separated, self-hauled recyclables delivered to the OCRC are transported directly to end markets. Yard waste (grass clippings and leaves) is taken directly to the compost site. Hazardous waste from households and small businesses is directed to the Hazardous Waste Facility.

**Figure 1-5: Waste Flow through the Integrated Solid Waste Management System**

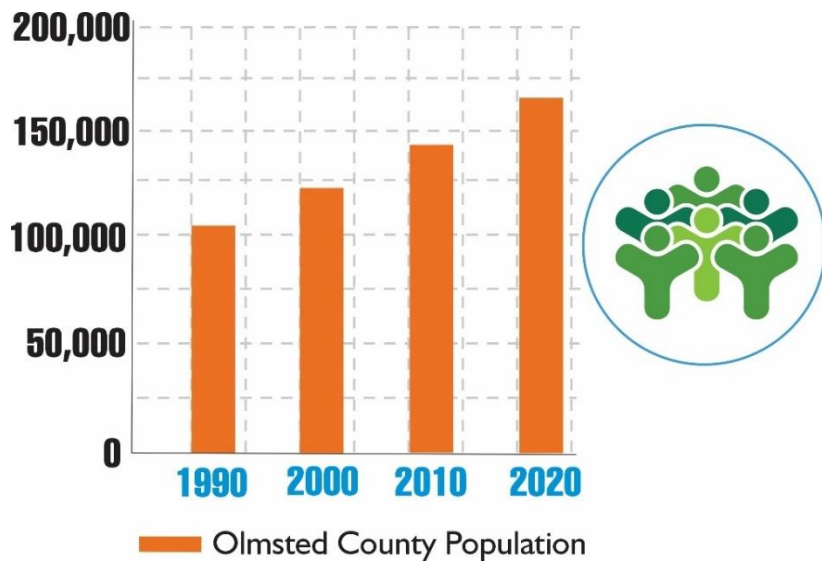




## Area Profile

Olmsted County has continued to see strong population growth in the first decades of the 21st Century, with a 12.9% growth rate between 2010 to 2020, compared to a statewide growth rate of 7.6% during the same period. Olmsted County's population grew from 144,268 in 2010 to 162,847 in 2020, making the county the fourth fastest-growing county in Minnesota. Olmsted County's 2020 population ranks as 8th largest in the state but is the largest county outside the sphere of the Minneapolis-St Paul metropolitan area.

**Figure 1-6: Olmsted County Population Summary**



The City of Rochester is the main population center in Olmsted County. The city of Rochester grew in population from 106,769 to 121,395 between 2010 to 2020. Rochester is the 3rd largest city in Minnesota after Minneapolis and St. Paul. Approximately 84 percent of the population lives in a city, and 16 percent live in a township (rural). The rural population in the county grew from 37,800 to 40,300 from 2010 to 2020.

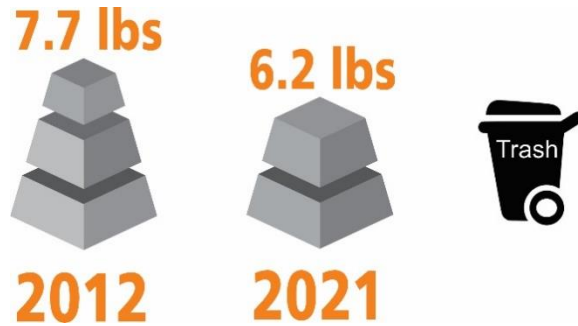
Visitors to the Rochester area exceed 3 million per year, primarily seeking medical care at the Mayo Clinic, according to Experience Rochester MN (formerly Rochester Convention & Visitors Bureau).

Looking to the future, the expectation is for the county to add approximately 55,000 people through the Year 2045, driven by the expected success of the Destination Medical Center (DMC) initiative and the effect that will have in spurring added demand for jobs in sectors such as retail services, leisure activities, construction, and public services. Rochester is expected to capture the largest share of that growth, but all the small cities and suburban townships are also expected to see growth. Township growth will be concentrated in the suburban areas around Rochester, while more rural areas are expected to see some decline in the overall population.

## The Current State of Waste

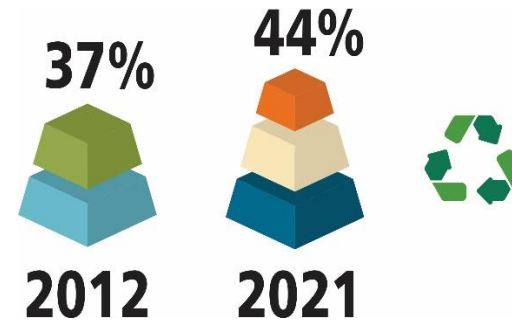
Approximately 612,000 pounds of trash are generated each day in the County. Based on 2021 data, each resident in Olmsted County generates about 6.2 pounds of solid waste per day. Olmsted County's recycling rate was 44 percent in 2021. In 2012, Olmsted County residents generated approximately 7.7 pounds of solid waste per person per day, with an overall recycling rate of 37 percent. In 2018, the U.S. Environmental Protection Agency estimated that the average American produces about 5.91 pounds of solid waste per day, about 1.5 pounds being recycled, and 4.4 pounds of trash generated. It is estimated that approximately 50 percent of the waste generated in Olmsted County is generated by residents.

**Figure 1-7: Pounds of Waste Per Person Per Day**



The U.S. average recycling rate is 32 percent.

**Figure 1-8: Olmsted County Overall Recycling Rate**

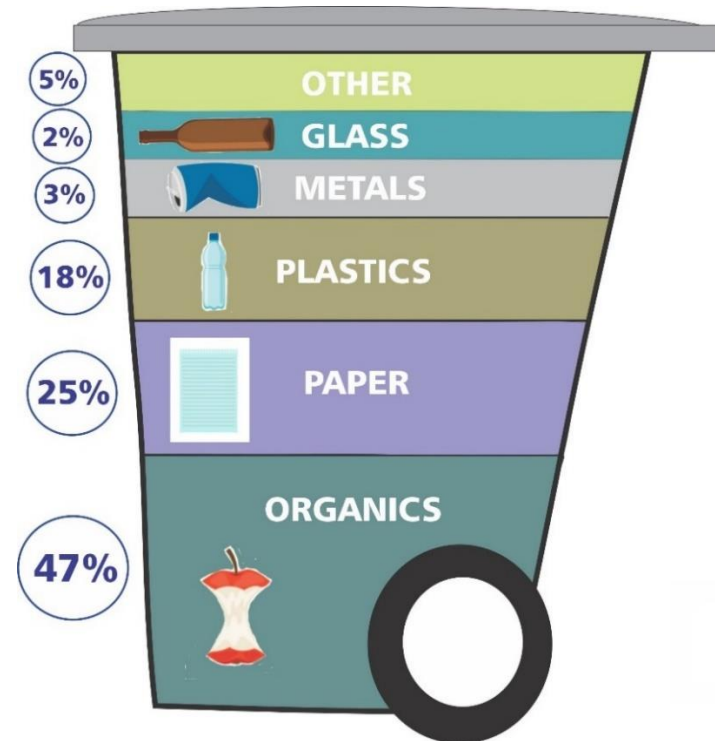


## Waste Characterization

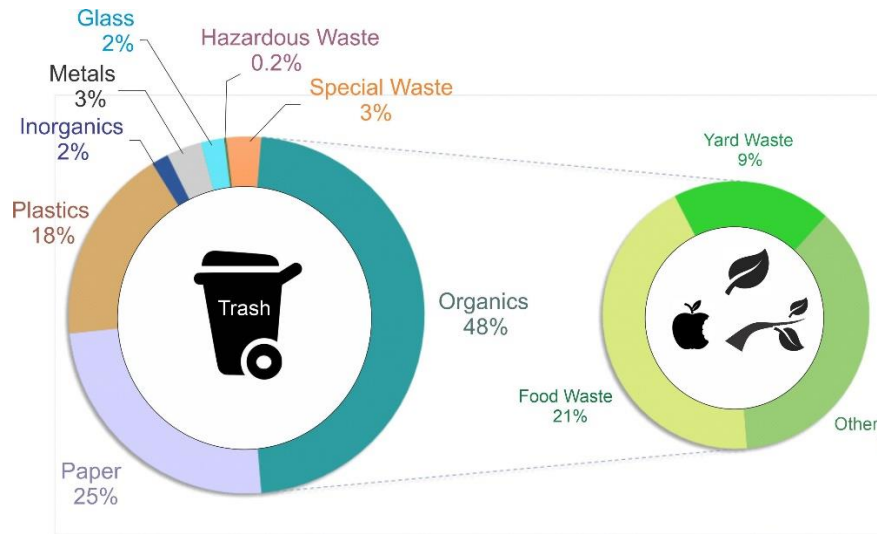
Olmsted County conducted a waste characterization study in May 2019. The most prominent material class in the overall waste stream was Organics, which accounted for 47% of the waste stream by weight, followed by Paper (25%) and Plastic (18%). Of the five most prevalent materials in the overall waste stream by weight, Food Waste, Yard Waste (note that yard waste is seasonal and the weather conditions before the waste sort may have resulted in high numbers), and Other Paper (e.g., construction paper, phone books, envelopes, tissue paper and napkins), accounted for about 49% of the waste stream. Plastic Film and Other Plastics (PVC #3, LDPE #4, PP #5, Other Plastic #7, and unidentifiable plastics) accounted for another 15% of the waste stream. Together, the top five material types comprised about 64% of the overall disposed waste.

The largest fractions by weight were combustible wastes that included Paper, Plastics, and Organics, which comprised about 90% of the total solid waste stream identified during the 2019 Study. Noncombustible waste included Inorganics, Metals, Glass, Hazardous Waste, and Special Waste which made up about 10% of the waste stream. Figure 2 illustrates the overall combustible composition of the waste stream compared to the noncombustible fraction for the 2019 Study.

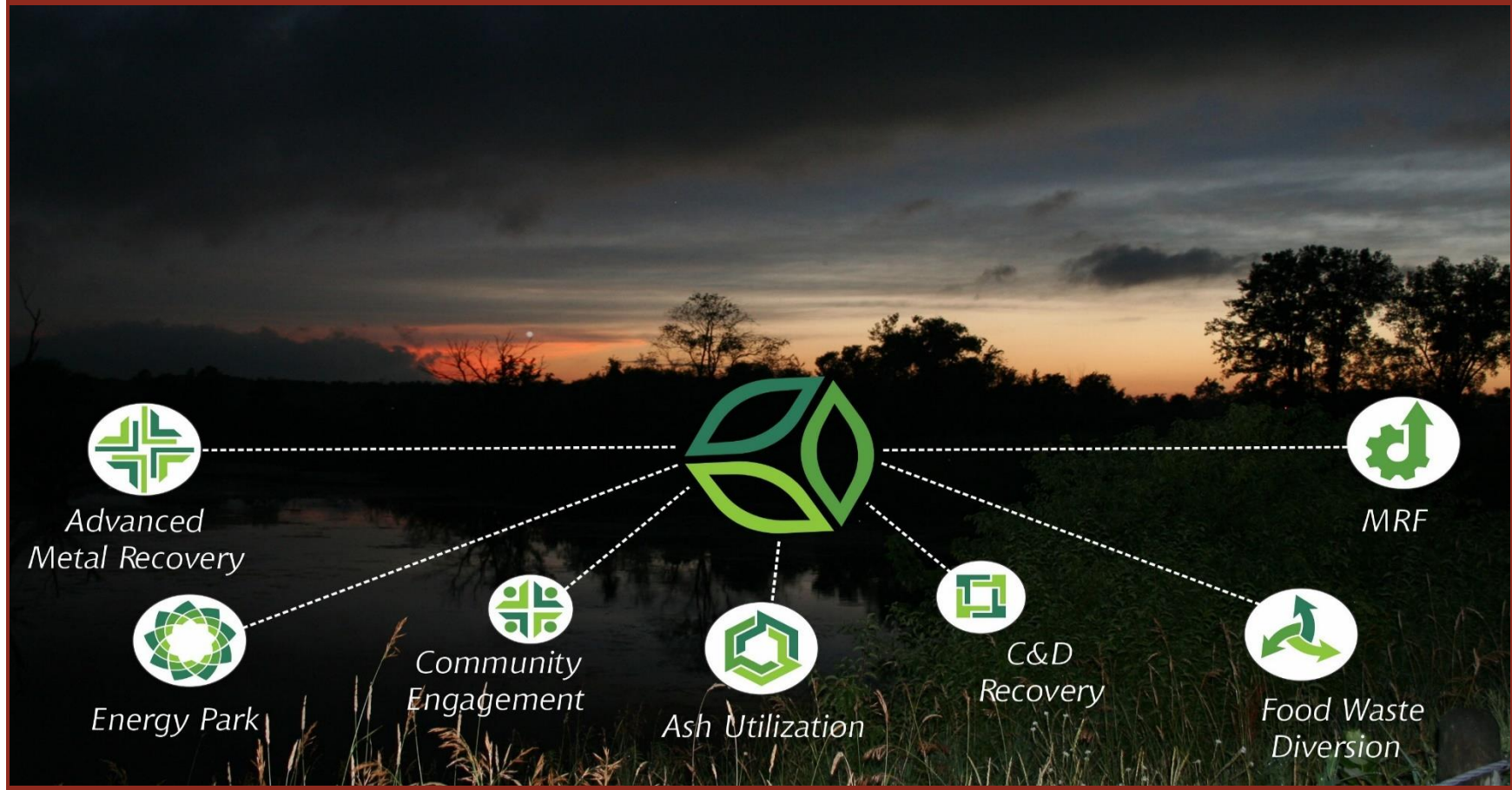
**Figure 1-9: 2019 Waste Characterization Study Results**



**Figure 1-10: 2019 Organic Waste Fraction**



## 2. Where we want to be



## Vision and Values

As we lay out our path for sustainability, it's critical to understand the vision, values, policies, strategies, and actions that provide the framework for the future of solid waste management. The vision represents the department's overarching aspirations of sustainability. Values are the fundamental beliefs that guide and motivate our actions. This Management Plan communicates Olmsted County's vision, strategies, and action items over the next ten years as we move toward a more sustainable waste management system (Figure 2-1).

## Sustainability

The traditional solid waste hierarchy—reduce, reuse, recycle, and disposal—recognizes that managing municipal solid waste is one part of a broader strategy for reducing the environmental and human health impacts associated with the production, use, and end-of-life management of products.

Recognizing that Earth's resources are finite, our vision for a sustainable waste management future identifies materials that were formerly considered waste and rethinks trash as a resource rather than a liability, with the goal of one-day eliminating waste. The Plan also focuses on reducing energy use, utilizing renewable energy, minimizing equipment emissions, reusing materials more productively over their entire life cycles,

and achieving environmental protection and improvement.

To achieve a sustainable solid waste management future, it is essential to understand the terms "sustainable" and "waste." "Sustainability" is generally understood as the development that meets current needs without compromising the ability of future generations to meet their own needs. Many organizations also highlight the three aspects of sustainability - Environment, Economy, and Society. Another way to express this concept is preserving the planet while enabling prosperity in perpetuity and maintaining everyone's quality of life.

The department's overall goal for Environmental Performance is to protect the environment and preserve our natural resources. The Social Performance goal is to foster an equitable system that is responsive to the community and implement feasible, measurable, and meaningful services for everyone. The Economic Performance goal is to use business principles to ensure a cost-effective system. The overall Plan approach balances social needs and economic opportunities with the long-term preservation of a clean and healthy natural environment. This approach to action and development integrates environmental quality, social equity, fiscal responsibility, and economic vitality (Figure 2-2)

Figure 2-1: Environmental Resources Department Vision and Values



**Vision: Using our waste as a resource for a safe, healthy, and sustainable community.**

**Values:**



**Integrity**

Acting with honor, truthfulness, and having strong ethical and moral principals with our co-workers, partners, and customers.



**Collaboration**

Working together and with our partners to achieve success by breaking down barriers and learning from each other.



**Safety**

Protecting the well-being of our co-workers, customers, and community.



**Stewardship**

Managing our resources to protect the environment.



**Customer Service**

Treating all customers equally, being responsive to their needs and exceeding their expectations.

## Figure 2-2: Sustainable Waste Management System

**Environmental Performance:** to protect the environment and preserve our natural resources.

**Social Performance:** foster an equitable system that is responsive to the community and implement services that are feasible, measurable, and meaningful for everyone.



**Economic Performance:** use business principles as a guide to ensure a cost-effective system



# 3. How Do We Get There



# 4. Sustainability Strategies

## Environmental Strategies



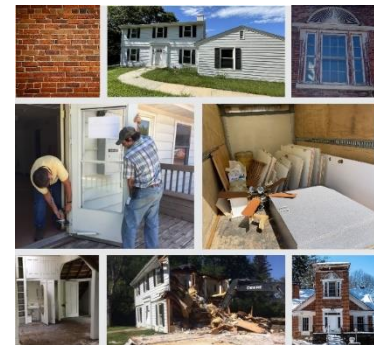
### Maximize recoverable resources

Development, with plans for a MRF, began in 2019. The MRF will be attached to the Olmsted Waste-to-Energy Facility (OWEF), allowing the MRF and the OWEF to operate together. The MRF will be able to remove problem and non-combustible materials from the waste stream and sort single-stream recyclables. Development of the MRF will result in increased recycling, improved OWEF operational efficiency, and increased capacity, ultimately extending the life of the OWEF at its current capacity.



### Minimize construction and demolition landfill disposal

Olmsted County will look for proactive ways of diverting construction and demolition (C&D) waste from landfill disposal. In combination with minimizing C&D landfill rule changes by the MPCA, Olmsted County has taken the initiative to begin incorporating waste diversion plans with future county-owned demolition, construction, and remodeling projects. These efforts will keep materials out of the landfill, give a second life to many deconstructed materials, and create a foundational template for future deconstruction. Olmsted County Environmental Resources will continue to support efforts by the county's Facilities, Operations, and Buildings Department to improve and enhance their efforts on waste diversion for their projects. With this deconstruction work, the county will advance voluntary deconstruction guidelines to assist local builders and developers in efficiently and effectively dismantle



building components for reuse, re-purposing, and recycling. The goal is to reduce C&D and MSW landfill waste to 3%.



## Develop Ash Utilization Projects

Olmsted County will promote and use waste combustor ash in road construction throughout the county and region. Through the work of a demonstration project, the county will develop and refine production and construction specifications of a waste combustor ash amended road base aggregate. This will standardize specifications that can be included in public works projects and used throughout the region by Olmsted County and the Minnesota Department of Transportation.

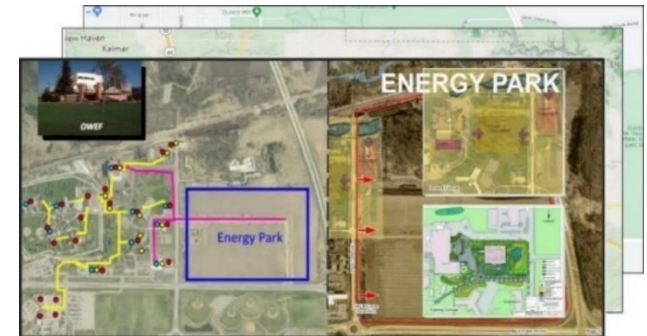


## Expand renewable energy use and sales

This strategy will explore options to increase renewable energy sales at the Olmsted Waste-to-Energy Facility (OWEF) and other solid waste management facilities like solar at the Kalmar Landfill. This will include developing draft conceptual plans for Energy Park and attracting businesses to support a regional circular economy.



Olmsted County currently owns over 70 acres of undeveloped land near the Olmsted County Solid Waste Campus. The open space is now part of the County's District Energy System East (DESE), which currently provides steam, electrical, and chilled water services from the waste-to-energy facility. As envisioned, a key component of Energy Park is to house facilities that will use the renewable energy from the OWEF and reuse and recycle the recovered materials from the MRF for end-use products.





## Explore leachate management options

Reducing leachate hauling to the Rochester Water Reclamation Plant will be explored over the timeline of this Plan. Hauling leachate increases environmental liability and results in unnecessary greenhouse gas emissions. Reducing the volume of leachate hauled starts with the optimal daily covering of the waste. Other options to reduce hauling such as leachate recirculation, on-site treatment and discharge, and connection to a sanitary main will be evaluated.



## Develop and implement a sustainable purchasing policy

Lead by example for the community by developing internal sustainability policies for environmentally preferable purchasing, recycling guidance for employees and contractors, and waste management on county projects.



## Explore advanced metal recovery - (Mining of ash cells to capture precious metals)

Olmsted County removes ferrous metals from the waste combustor ash at the Olmsted County Kalmar Landfill. Non-ferrous metals, including copper, stainless steel, and various precious metals (e.g., gold, silver, etc.), exist in the ash. Olmsted County will be evaluating the opportunity to extract these non-ferrous metals from the incoming ash and mine the closed ash disposal cells. This will allow the county to increase material recovery, recapture airspace, and generate additional revenue.





## Advocate fair legislative and regulatory rules & program development

Collaborate with other governmental agencies, businesses, and legislators to develop fair and equitable policies for product stewardship and extended producer responsibility (EPR) for system funding. Support developing sound federal and state standard recycling policies and continue to support solid waste renewable energy efforts.



## Optimize operations through advanced technologies

The County will take advantage of the latest machine learning technology to further reduce the OWEF air emissions. Implementation is underway to use advanced monitoring equipment combined with computer software to monitor pollution control for the OWEF. Initially, this will focus on optimizing nitrogen oxide (NOx) pollution control and particulate matter (PM). Predictive analytics will be used to monitor in real-time various operational parameters and proactively address operational challenges and maintenance needs at the facility. This includes the ability to

monitor for potential emission exceedance scenarios and implement casualty procedures to minimize the potential of exceedance.



## Diversify and expand organics management

The county will explore ways to rethink organic waste as a resource. Opportunities to reduce yard waste include educating residents on positive soil health aspects and leaving their grass clippings on their lawns and mulching leaves. Mulching leaves in the fall for adding organic matter to yards. Additionally, the county will look for opportunities to develop large-scale food waste recycling projects that can reduce disposal of organic waste and recover renewable energy. Explore services for woody materials such as biochar and repurpose lumber and tree debris for furniture, flooring, decking, beams and mantels.



# Social Strategies



## Expand education & stakeholder engagement

It's up to each of us to properly manage and minimize the waste we generate. Olmsted County's Environmental Resources staff teaches residents and businesses how to properly use the facilities and services that comprise the integrated solid waste management system. Education and outreach efforts will continue to expand through multiple avenues and languages:

- **Digital communication:** A comprehensive modern website, electronic newsletter, "Waste Wizard," and an active social media account connect people with the information where and when they need it.
- **Facility tours:** Environmental Resources staff regularly provide presentations and facility tours to interested community members and dignitaries. Through a partnership with Quarry Hill staff, facility tours are provided to students in the Rochester School District.
- **Stakeholder engagement:** Community input is obtained through the Environmental Commission, community listening sessions, surveys, speaking events, and collaboration with public institutions and service organizations.



## Expand regional collaboration

We continue to partner with neighboring counties and cities and work on expanding our regional collaboration to all areas of solid waste management. This will help us maximize the options available to improve recycling, minimize waste going to landfills, protect the environment, and share costs to efficiently manage resources, sustainability, and economies of scale.



## Provide a work environment of operational excellence

The department will strengthen employee engagement efforts and focus on the guiding values of integrity, collaboration, safety, stewardship, and customer service. This strategy builds on the commitment to provide a positive work culture that empowers staff and focuses on customer needs. Empowered staff members clearly understand the department's goals, feel secure in taking the initiative, and come up with ways to address problems to achieve superior operational practices.



Due to increasing customer use and operating constraints at the OCRC, Olmsted County is planning for a new RSHF. A new RSHF will incorporate sustainability in the management of self-hauled waste and problem materials to increase recycling and material reuse. This will ensure that residents will continue to have the option to self-haul and dispose of their MSW, C&D material, and bulky items in future years.



## New residential self-haul facility



## Waste designation and enforcement

The residents of Olmsted County have invested in an integrated solid waste management system to responsibly manage waste produced in our community and minimize environmental liability. The cost of these facilities and programs is paid for primarily by tipping fees and service charges, so those who produce more waste pay more for the disposal. The county intends to continue assuring stakeholders that their waste will be managed through cost-effective programs and facilities consistent with this plan.

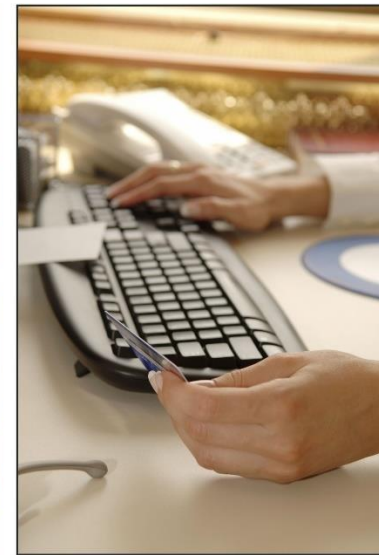
## Economic Strategies



### Maintain cash balance

The Environmental Resources Department is an enterprise fund providing solid waste management services and education programs to residents and businesses. The department will continue to measure the overall fund's ability to meet financial obligations by maintaining a minimum year-

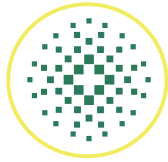
end cash balance of 25% to 50% of annual operating expenses plus one year of annual debt service using no tax levy to fund programs.



### Analyze and prioritize large capital requests

Olmsted County will continue to measure large capital requests (planned and unplanned) that have been analyzed for their need and return on investment before being collaboratively approved to fit within the annual budget projections.



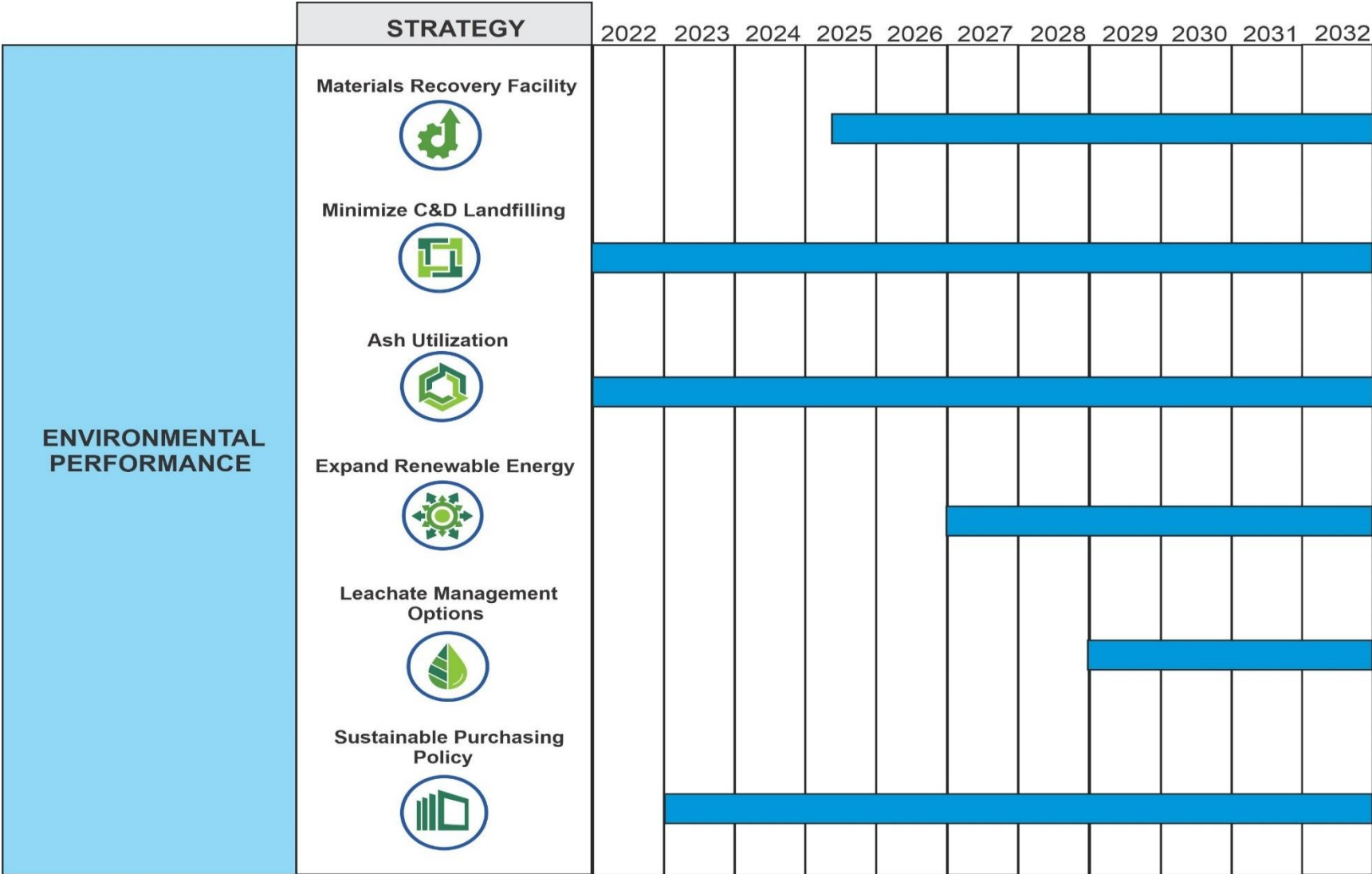






## Data supported decisions






The county's Environmental Resources Department will use data-supported decision-making based on business principles within an enterprise fund. Revenues, expenses, capital costs and waste projections will be used to make informed decisions for operations and future capital projects.






# Strategy Implementation Timeline



		STRATEGY										
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ENVIRONMENTAL PERFORMANCE	Advanced Metal Recovery 											
	Fair Regulations and Rules 											
	Optimize Operations through Advanced Technology 											
	Diversify and Expand Organics Management 											

	STRATEGY	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
	<b>SOCIAL PERFORMANCE</b>	Community Education and Engagement 											
Regional Collaboration 													
Operational Excellence 													
New Residential Self-Haul Facility 													
Waste Designation 													

		STRATEGY										
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
ECONOMIC PERFORMANCE	Maintain Cash Balance 	[Green bar]										
	Analyze Large Capital Projects 	[Green bar]										
	Data Supported Decisions 	[Green bar]										

# 5. Technical Plan



### Geographic Details

Olmsted County is located approximately eighty miles south of the Twin Cities and forty miles west of the Mississippi River. The County has a land area of 660 square miles, or 422,400 acres.

Arterial access to the region is provided by several major highways: U.S. 52 with access to the Twin Cities, Interstate 90 with access to Wisconsin and South Dakota, U.S. Highway 14 with east-west access through southern Minnesota, and U.S. Highway 63 leading north towards northern Wisconsin and south to central Iowa. In addition to an excellent roadway system, the region also has a commercial aviation system. Jet gateways at the Rochester Municipal Airport provide the region with commercial, passenger, and freight service from throughout the United States.

The area included in this plan covers the entire county, including the 18 townships and 8 incorporated cities: Byron, Chatfield (partial), Dover, Eyota, Oronoco, Pine Island (partial), Rochester, and Stewartville. This location provides reasonable access to recycling end markets for, newspaper, cardboard, aluminum, steel, glass and plastic.

## Current & Projected Land Use Details

The most recent U.S. Department of Agriculture information from 2017 indicates that there were 285,944 acres of farmland comprised of 1,139 farms with an average size of 251 acres. This amounts to approximately 68% of the land area of Olmsted County. In terms of land use, agriculture is by far the most important land use in Olmsted County. Residential, commercial, public and open spaces make up the remainder. More detailed information on projected land use plans for the city of Rochester and surrounding communities is shown on the following map.)

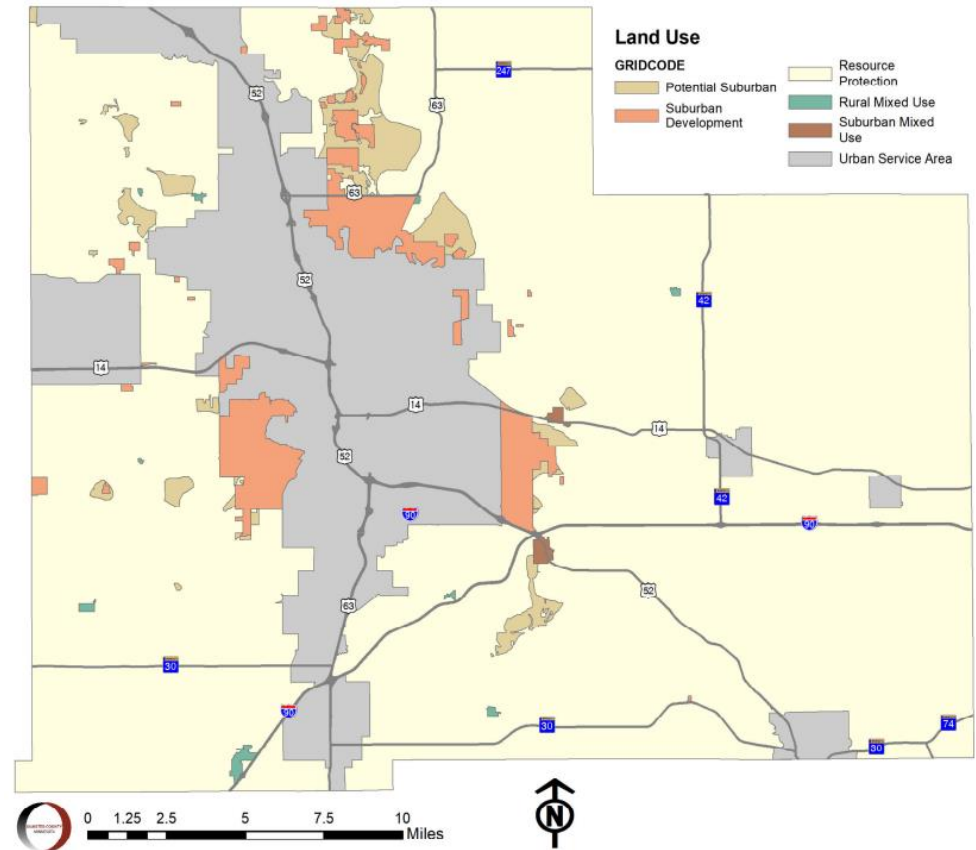
Like most of southeastern Minnesota Olmsted County lies on karst bedrock. This fractured limestone allows surface water to easily filter into the aquifers which provide drinking water. Because of this karst geology, very little land in Olmsted County is suitable for landfills.

Following extensive geological study, the Kalmar Landfill was permitted and developed on one of the few sites that is suitable for a landfill in Olmsted County making the need for waste abatement and alternatives to landfilling critical to the existing system.

Figure A-1

## Olmsted County Future Land Use

June 15, 2022



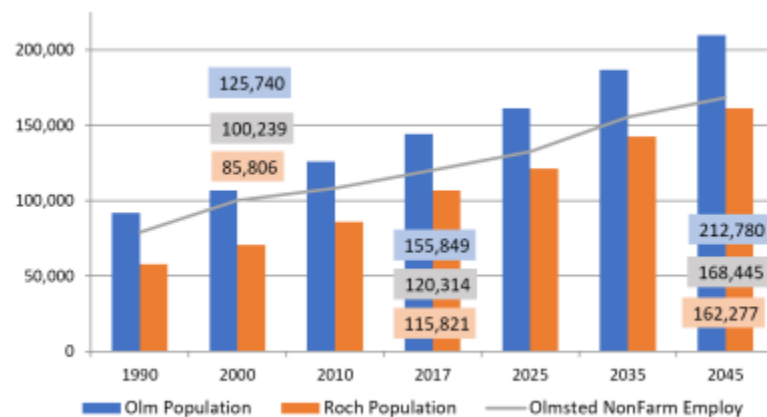


## Demographic Details

Background information used for the development of this section comes from three primary sources: The Olmsted County Planning Department, Minnesota State Demographers office, and the U.S. Census Bureau. An updated Long Range Transportation Plan 2045 (LRTP 2045) was developed by the Rochester Olmsted Council of Governments (ROCOG) and adopted in 2020. The LRTP 2045 includes a comprehensive [Planning Area Profile](#) and includes estimates of regional growth, population, and employment. These factors are important to develop strategies to manage the waste effectively and reduce its generation. A thorough evaluation of local population distribution, population projections, employment and wages, and economic conditions is included in the [Planning Area Profile](#).

During the 2010s (2010 through 2018), the population increased across all jurisdictional groups (see Figure A-2). However, over the projected growth through 2045 exurban and rural township populations are expected to decline, primarily due to the aging population.

Figure A-2: Population and Employment Forecast Summary

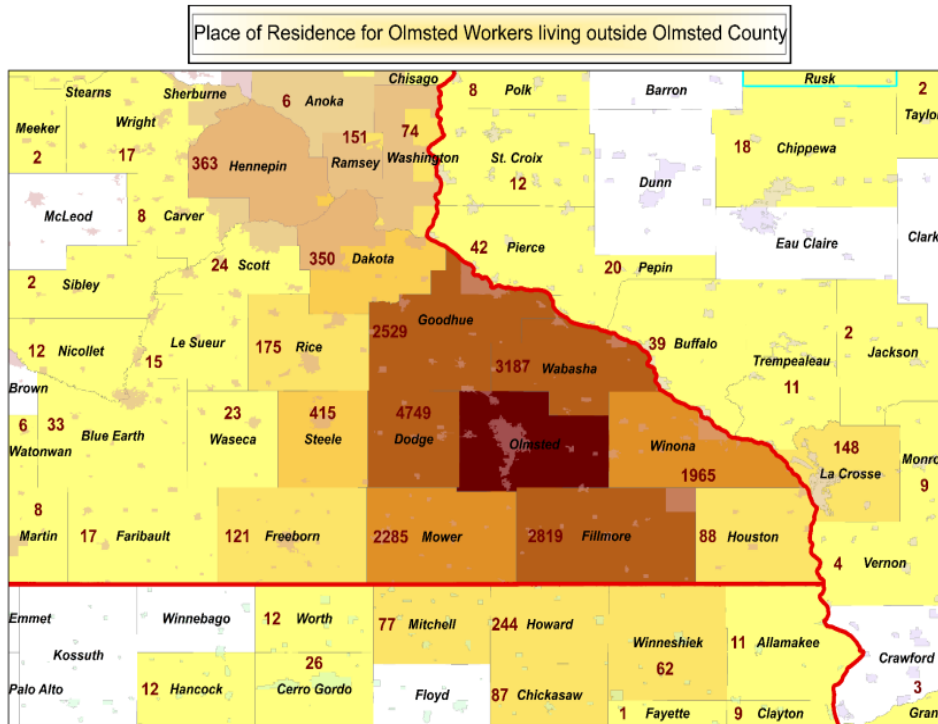


Rochester share of population goes from 74% (2010) to 76% (2045)  
 Source: Historic data: US Census, Bureau Economic Analysis;  
 Forecasts – ROCOG

Notably, all cities and suburban jurisdictions are expected to see a population increase over this same period. While the rural population is declining, backyard or on-site disposal is still a concern. The County currently has little control over the disposition of solid waste collected by self-haulers. The Solid Waste Division will continue to address this concern through educational outreach and by providing access to services.

A significant portion of the labor force is filled by commuters from throughout the region. It is estimated that approximately 25% to 35% of local jobs are filled by workers from the surrounding area. As shown in figure A-3.

Figure A-3



Source: U.S. Census 2012-2016 5 Year ACS Commuting Flows

The economy in Olmsted County is primarily centered around health care, high technology, and education, with the major employers including the Mayo Medical Center, IBM-Rochester, and the Rochester School District. Rochester and Olmsted County continue to grow and remain economically viable even with the difficulties in the U.S. economy. According to the U.S. Census Bureau, the median household income (in 2019) was \$73,106.

Visitors to the Rochester area exceed 3 million per year, primarily seeking medical care at the Mayo Clinic, according to Experience Rochester MN (formerly Rochester Convention & Visitors Bureau). This creates the need for a large service industry.

Over the past 10 years, Olmsted County has experienced challenges with waste management, that include nearing capacity at the OWEF, changes in recycling, and changes in rules. The evolving economic and demographic landscape will add to these challenges over the next 10 to 20 years. As the economy sees a shift to increased telecommuting and online services, the waste management needs and solutions will need to be flexible enough to keep up with these changes. However, it can be anticipated that a need for increased capacity both for waste disposal and waste diversion will be required to meet the challenges.

## County Demographic Profile

Figure A-4

**COUNTY PROFILE** **Olmsted Co.**

Olmsted Co.'s population was becoming more racially diverse over time. Since 2000, the county's white population increased and the number of people of other races increased (see Table 4).

**Figure 3. Population by Race, 2019**

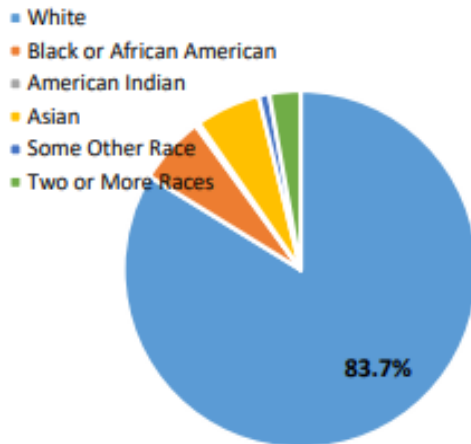


Table 4. Race and Hispanic Origin, 2019	Olmsted Co.			Minnesota	
	Number	Percent	Change from 2000-2019	Percent	Change from 2000-2019
<b>Total</b>	<b>154,809</b>	<b>100.0%</b>	<b>24.6%</b>	<b>100.0%</b>	<b>13.1%</b>
White	129,616	83.7%	15.5%	82.8%	4.7%
Black or African American	9,566	6.2%	187.3%	6.4%	107.6%
American Indian or Alaska Native	554	0.4%	74.8%	1.0%	5.5%
Asian or Other Pac. Islanders	9,156	5.9%	71.3%	4.9%	87.8%
Some Other Race	1,513	1.0%	31.8%	1.9%	58.1%
Two or More Races	4,404	2.8%	134.1%	3.0%	99.9%
Hispanic or Latino origin	7,626	4.9%	157.7%	5.4%	108.9%

Source: U.S. Census Bureau, 2015-2019 American Community Survey

The MPCA Environmental Justice Policy states that the MPCA expects fair treatment and meaningful involvement of communities of color, indigenous communities, and low-income communities in agency actions and decisions that affect them. It is the policy of the MPCA that an outcome of its work, in addition to protecting and improving the environment and public health, must address environmental justice concerns.

A [map of environmental justice areas in Olmsted County](#) as listed by the MPCA, are located within and around the City of Rochester.

## Details of Local Economic Conditions

### Median Household Income

Figure A-5

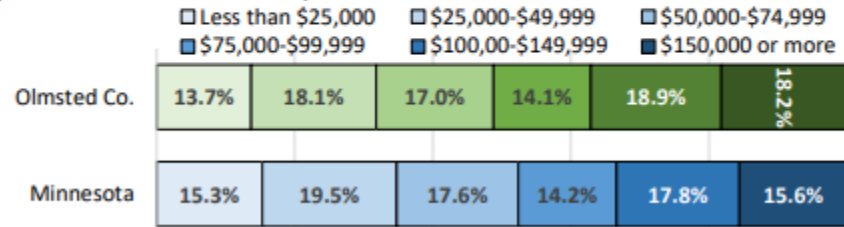
#### INCOMES, COST OF LIVING, & HOUSING

Olmsted Co. had a higher median household income than the state, and a lower percentage of households with incomes below \$50,000. Overall, Olmsted Co. had the 9th highest median household income of the 87 counties in the state.

<b>Median Household Income</b>	<b>\$76,951</b>
state	\$71,306
<b>Median Family Income</b>	<b>\$97,171</b>
state	\$89,842
<b>Per Capita Income</b>	<b>\$41,066</b>
state	\$37,625

*Source: 2015-2019 American Community Survey*

Figure 11. Household Incomes, 2019



*Source: 2015-2019 American Community Survey 5-Year Estimates*

## Employment and Wage Details

Due to the pandemic recession, after losing jobs over the past year, Olmsted Co. had the 5th largest economy of the 87 counties in the state. Olmsted Co. was the 25th fastest growing in the past year and the 9th fastest growing since 2015. From 2015 to 2020, employers in Olmsted Co. added jobs, outpacing the state.

**3,823** business establishments  
**96,492** jobs  
 Job change, 2015-2020: 2,606 jobs, 2.8% increase

**\$68,280** annual average wage  
**\$6,588,499,756** total industry payroll

Figure 16. Industry Employment Statistics, 2005-2020

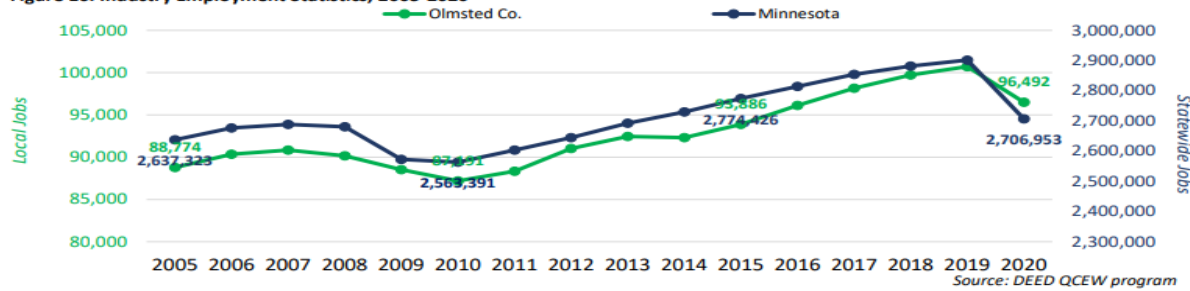


Table 15. Olmsted Co. Industry Employment Statistics, 2020	Number of Jobs	Percent of Total Jobs	Average Annual Wage
<b>Total, All Industries</b>	<b>96,492</b>	<b>100.0%</b>	<b>\$68,280</b>
Agriculture, Forestry, Fish & Hunt	263	0.3%	\$36,737
Mining	37	0.0%	\$42,675
Construction	4,125	4.3%	\$66,349
Manufacturing	6,511	6.7%	\$93,506
Utilities	152	0.2%	\$90,918
Wholesale Trade	1,350	1.4%	\$67,343
Retail Trade	9,626	10.0%	\$32,090
Transportation & Warehousing	1,788	1.9%	\$44,889
Information	1,192	1.2%	\$74,240
Finance & Insurance	1,326	1.4%	\$83,279
Real Estate & Rental & Leasing	660	0.7%	\$47,244
Professional & Technical Services	1,360	1.4%	\$74,275
Management of Companies	483	0.5%	\$80,070
Admin. Support & Waste Mgmt. Svcs.	3,156	3.3%	\$53,655
Educational Services	5,031	5.2%	\$47,338
Health Care & Social Assistance	46,245	47.9%	\$85,077
Arts, Entertainment, & Recreation	942	1.0%	\$17,389
Accommodation & Food Services	6,751	7.0%	\$22,204
Other Services	2,254	2.3%	\$34,911
Public Administration	3,237	3.4%	\$75,445

Figure 2. Change in Jobs, 2019-2020

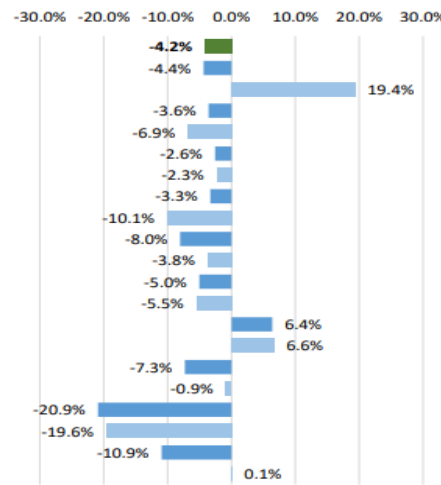


Figure A-6

## Detail of Major Employers

The major employers in Olmsted County and the surrounding area with 400 or more employees or more are listed below.

**Figure A-7: Major Employers in Olmsted County**

Est.	Firm	Employees	Type of Business
1914	Mayo Clinic	40,950	Medical/Hospital
1858	Rochester Public Schools	2,854	Education Services
1911	IBM	2,791	Electronica/Computer
1949	Olmsted Medical Center	1,319	Medical/Hospital Services
1855	Olmsted County	1,268	County Government
1868	City of Rochester	1,118	Local Government
1970	*McNeilus Truck & Manufacturing	791	Mobile concrete mixers, garbage trucks
1993	Charter Communications	672	Cable Television/High Speed Internet
1994	Benchmark Electronics	495	Contract Mfg/Design/Engineering
1984	Federal Medical Center	451	Corrections/Medical
1990	Geotek	450	Pultruded fiberglass products
1995	Cardinal of Minnesota	425	Res. Services/Dev. Disability
1915	RCTC	425	Post-Secondary Education
1961	Crenlo	425	Fabricated Metal
1978	Halcon	400	Furniture Manufacturer

*\*Located in Dodge County*

*Source: Rochester Area Economic Development Inc. Information on IBM is from a 2018 inquiry after the property sale. Charter Communications and Benchmark are from 2021 – they have not responded for 2022. The rest are data provided in 2022.*

### Detail of Major Employers (continued)

The Mayo Foundation has established a fully integrated and self-sustaining solid waste management system for the collection, processing and disposal of its Solid Waste which supports the objectives of the Olmsted County Solid Waste Management Plan. Nothing in this plan is designed to restrict the Mayo Foundation from taking their mixed municipal solid waste and infectious waste to the Mayo Medical Waste Incinerator as long as this facility operates in accordance with Minnesota State, Olmsted County, and municipal or township laws, rules and regulations. Olmsted County staff and Mayo staff meet regularly to stay up to date with changes within the respective systems, changes in legislation and other solid waste issues.

Rochester Public Schools, Olmsted County, the City of Rochester and RCTC all have established internal recycling and other waste abatement programs. Staff works regularly offers assistance to businesses on recycling and solid waste management.

It is estimated that approximately 50% of the municipal solid waste is generated by the Commercial/industrial sector and 50% by the residential sector.

Olmsted County has an Industrial Waste Management Plan that addresses the management of non-municipal solid waste materials that are received at the County's solid waste facilities. This document can be reviewed by contacting the Olmsted County Environmental Resources Department.

Specific volumes and types of waste generated from each business is unavailable. Any information obtained from

haulers on incoming waste is considered to be data private in accordance with Minnesota Statutes 13.03; 115A.93 Subd. 5; and 115A.882.

### Collection and Disposal Rate Structure Detail

In the early 1980's, when the Olmsted Waste-to-Energy Facility project was being developed, the Olmsted County Commissioners set a policy that the solid waste management system be based on economic sustainability, fiscal responsibility and fairness. They wanted a system that:

- limits the liability to the citizens of Olmsted County by providing facilities located in the county for waste generated in the county;
- requires those who generate waste pay the price for proper management
- uses no local property tax dollars to fund it, and
- is based on environmental considerations and the Minnesota Solid Waste hierarchy

A system of volume or weight-based fees was set up, so those who throw more away, pay more. This system results in higher waste disposal fees than landfills but significantly minimizes waste that needs to be landfilled, generates renewable energy and includes incentivizes waste abatement activities that together form an integrated solid waste management system. Since the recycling, composting, and hazardous waste program costs are included in the tipping fee, and are provided free or at a reduced cost, generators can directly affect the amount they pay by utilizing these programs and reducing their waste.

Licensed garbage haulers operate in an open market without restrictions on how much they are allowed to bill their customers. Competition and market forces should prevent haulers from price gouging generators. In addition, a self-haul option is available for generators who choose not to use a licensed garbage hauler. Because of these factors, hauler collection rates vary by generator and collection area. On average, generators located in a city that has contracted with only one licensed hauler pay less than generators in an open market. Eyota and Chatfield are examples of two cities that contract with a single licensed garbage hauler for their residents.

The facility tipping fee is \$83/ton. The other component is the service charge, either billed and collected by licensed garbage haulers on all pretax charges or a per ton rate for self-haulers tipping at Kalmar Landfill or OWEF the current rate is \$92/ton.

These two components represent the total tipping fee generated. These fees help support the operations of the integrated solid waste management system. The total tipping fee rate is currently \$175/ton for self-haulers. Due to increased charges licensed garbage haulers bill their customers, the net total 2021 tipping fees from licensed haulers were approximately \$191/ton.

Waste generated in Olmsted County and hauled by self-haulers from commercial sites, which have been approved to pay by ton pay \$175/ton, this equates to the combination of the \$83 per ton tip fee plus the \$92/ton service fee. Waste generated outside of Olmsted County and that has



been approved to be received at Olmsted County Facilities only pay the \$83/ton tipping fee. Rates are by volume at Recycling Center Plus which equals approximately \$253/ton after deducting the transportation costs to the disposal sites and deducting the MN Solid Waste Management Tax.

It is estimated that the average household in Olmsted County generates approximately 30 pounds of garbage per week. The average cost to the household is approximately \$35 per month for collection and disposal.

Haulers Currently Licensed to Haul Solid Waste in Olmsted County are:

Ace Solid Waste, Inc
Hometown Haulers, LLC
LRS of Minnesota, LLC
Sunshine Sanitation
Veit Disposal
Waste Management
Watson Roll-off, LLC
Wm Hanson Waste Removal & Recycling

### Waste Generation Detail

A total of 168,944 tons of solid waste was generated in 2020. This includes 3,596 tons of problem materials including antifreeze, electronics, tires, major appliances, vehicle batteries and used oil.

All city and rural residents have the option to use a licensed commercial garbage hauler to deliver garbage to Olmsted

waste facilities or self-haul their own garbage to a permitted disposal facility. Collection options in some rural areas may be limited and costly. It is estimated that approximately 95 percent of the population utilizes collection services. Based on the activity at the Olmsted County Recycling Center (OCRC), it is estimated that approximately 4 percent of the total population self-hauls their waste to that facility.

Approximately 84% of the County's population lives in a city, and 16% lives in a township (rural). It is difficult to distinguish how much garbage from rural sites is disposed on-site versus how much is self-hauled to Olmsted facilities or to another county, however for the purposes of this Plan, it is estimated 3.4% of the population disposes of waste on-site, resulting in approximately 1,362 tons of Municipal Solid Waste (MSW) disposed of on-site as shown in the Goal Volume Table.

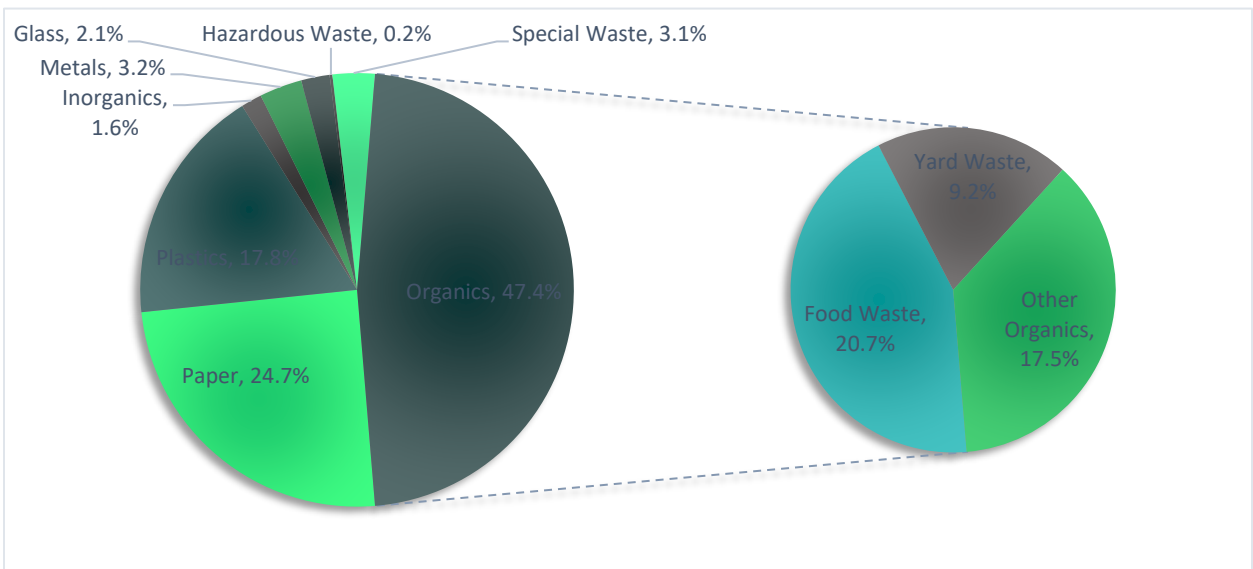
### Waste Composition Details

A waste sort at the OWEF was conducted in May 2019. The OWEF air quality permit requires a waste composition be completed every 5 years. This waste sort can also provide useful information in assessing waste diversion opportunities. The largest portion of the waste stream is comprised of organics, with over 20% coming from food waste. The amount of food waste present in the waste stream provides an opportunity to improve food waste diversion. If half of this can be diverted, the County can avoid disposal through waste combustion or landfilling of over 10,000 tons per year. As a portion of the County's waste stream, this has steadily been increasing since the

2009 waste sort. Additionally, yard waste in the waste stream has steadily grown to over 9% in 2019.

The waste stream also contains other recyclable materials such as corrugated cardboard at 2.3%, HDPE bottles at 0.5%, PET bottles at 1.4%, and aluminum cans at 0.6%. This represents a total of approximately 5,000 tons of recyclable materials entering our waste stream. In comparison of past waste sorts, all these materials have been declining as a percent of the waste stream. This is likely attributed to two primary factors: improved recycling rates from residents and the light-weighting of the products.

Figure A-8: 2019 Olmsted County Waste Composition



## Constraints & Opportunities

Because Olmsted County operates its waste management program in a zero-tax subsidy environment, tip fees and services charges have been the primary source of financial support for the Environmental Resources Department. Waste flow assurance continues to be a driving force to the success and viability of Olmsted County's integrated solid waste management system due to the proximity to less expensive landfills in other counties. Olmsted County maintains waste flow assurance through two mechanisms. The first is voluntary contracts with licensed haulers to deliver waste to the Olmsted County facilities. The second is the implementation of the County's Designation Plan, dated January 2011.

## Technical Plan

Other ongoing challenges facing the Environmental Resources Department include maintaining customer and employee satisfaction, economic sustainability, risk reduction, environmental protection, regulatory compliance, waste abatement education and community outreach and new technology integration.

As Olmsted County's demographic becomes more diverse, services need to adapt. As the rate of technological change increases, Olmsted County needs to respond diligently. As regulations evolve, the county must maintain compliance and flexibility. As new environmental goals are needed for Olmsted County, staff must be effective and responsive in providing these new waste management services.

# Olmsted County Ordinances

## Solid Waste Management Ordinance

Chapter 3500 of the Olmsted County Ordinances & Codes – the [Solid Waste Management Ordinance](#) was established to benefit, protect and ensure the public health, safety and welfare of its residents through sound management of solid waste generated in and existing within the county.

Minnesota Statutes and Rules grant the county the authority to provide for, establish, conduct and regulate solid waste management programs and services that protect the water, air, and land resources of the county.

The solid waste ordinance prohibits yard waste and recyclable materials from the Mixed Municipal Solid Waste (MMSW) stream and require volume/weight-based pricing for MMSW to advance recycling and waste reduction.

Materials that are required to be recycled are set by county board resolution. Residential generators are required to ensure the segregation and delivery of recyclable materials to a recycling center either by self-hauling or by contract with a licensed hauler. Commercial site owners/or managers must provide a central collection location for recyclable materials generated on their premises and assure delivery to a recycling center.

This ordinance prohibits on-site disposal except as described in Minnesota statute 17.135. Reporting and corrective actions of disposal at non-permitted solid waste sites are also outlined in the solid waste management ordinance. Section 3507 lists the procedures for permit non-

compliance. Penalties are listed in the administrative penalty schedule attached to the solid waste management ordinance.

Through this ordinance, haulers are required to offer volume or weight-based fees for MSW collection as an incentive to reduce waste. Commercial haulers may not charge residents or businesses that recycle more than residents or businesses that do not recycle. Same-day curbside collection of recyclable materials is also required.

Solid waste haulers are required to obtain licenses from the county to haul MSW. The licensing sections of the ordinance were updated in January of 2022 to provide two classes of solid waste commercial hauler licenses:

1. Class A licenses are required for commercial haulers to provide hauler services for mixed municipal solid waste, industrial waste, recyclable materials, source-separated organic materials, construction debris, demolition debris, and/or infectious waste. Licenses issued after December 1, 2006, were given preference to existing licensees. The maximum number of licenses available was twelve. If a licensed hauler was acquired by another licensed hauler the number of licenses available is reduced by one. The county currently limits the number of Class A licenses to eight.
2. Class B licenses are required in Olmsted County for commercial haulers to provide collection and transportation of source-separated organic materials

only. The county does not limit the number of Class B licenses.

Olmsted County is considering changes to the solid waste management ordinance to provide a separate Class C license for bulky waste haulers to provide equity and compel compliance with the designation ordinance.

Recent changes to Chapter 3500, the solid waste ordinance, include language on organics facility siting, collection, transportation, and processing of source-separated organic materials including food waste. Permitting parameters were added for three sizes of compost sites: a backyard site, a commercial small facility, and a state of Minnesota permitted facility. These changes were prepared in tandem with related Olmsted County Zoning Ordinance changes and coincide with other local jurisdiction zoning ordinances.

### Solid Waste Designation Ordinance

The county relies on tipping fees collected at the disposal

facilities to fund the operation, development, and improvement of the integrated solid waste management programs. Waste assurance guarantees the revenue source and is an important priority for Olmsted County.

The [Olmsted County Solid Waste Designation Ordinance](#), Chapter 3550 of the Olmsted County Ordinances and Codes requires all acceptable waste generated in Olmsted

County be disposed of at Olmsted County-owned facilities. It has been in effect since 2016.

### Administrative Enforcement and Appeals Procedure

Chapter 4000 of the Olmsted County Ordinances and Codes - [Administrative Enforcement and Appeals Procedure](#) establishes enforcement procedures to gain compliance with certain provisions of the code prior to any formal criminal or civil court action. It also establishes procedures for administering Minnesota laws covered by delegation agreements where separate procedures are not established by such agreements and where these procedures are consistent with state law.

### Regional Planning Details

Olmsted County is a member of the Southeastern Minnesota Recyclers Exchange (SEMREX) Joint Powers Board. SEMREX applied for grant funding from the MPCA. SEMREX started working on a regional planning timeline, and scoping documents in 2017 pending grant funding. No funding was available. In 2020, six of the nine members agreed to participate in development of a regional plan and approved \$10,000 towards the preparation of a regional plan pending matching grant funding. Grant funding was not awarded. The members could not fund the project on their own, so each county will prepare a separate plan.

While no formal regional planning efforts are underway, Olmsted County works regularly with neighboring counties. The Dodge/Olmsted Joint Powers Board was formed in 1986 to manage mixed municipal solid waste through a solid waste management agreement for processing and disposal. Olmsted County and Dodge County each operate integrated solid waste management systems that provide solid waste services as directed by Minnesota statutes: Chapters 115A, 400, and 145. In 2004, the Dodge/Olmsted solid waste management agreement was updated and extended to June 30, 2028.

A four-county regional group works together on hazardous waste programs including waste pesticide, household and Very Small Quantity Generator programs.

Since the late 1980s, Olmsted County has been partnering with surrounding counties on mutually beneficial programs and projects.

Olmsted County views regionalization as an opportunity for growth and is currently exploring options to work with Winona, Fillmore and other southeastern Minnesota counties on projects such as a regional MRF and organics processing.

Opportunities exist to work with the City of Rochester on sustainability efforts. The overlap on recycling and waste disposal issues provides benefit to both parties to maximize education efforts and knowledge. Constraints to regional planning have mostly centered around technical and financial feasibility.

### Source Reduction and Communications/Education Details

Olmsted County seeks to ensure services to residents that are equitable, and that barriers are reduced and are provided in an environment that promotes inclusiveness.

Since good decisions are based on knowledge, Olmsted County's waste education program teaches residents how to make the most of available resources through an understanding of how and why Olmsted County's Integrated Solid Waste Management System provides a proper place for waste. A primary function of the education program is to teach residents about their role in solid waste management and to promote best waste management practices that align with the Solid Waste Hierarchy. The education program provides information on how to reduce waste, recycle, and properly manage the waste they produce. Providing this information where, when and how citizens and businesses need it is a primary goal of the communications program.

The county intends to continue to be a positive example to local municipalities, businesses and residents by reducing waste generated from County sources. The main focus areas will be to:

- Continue to educate staff and promote sustainable practices through the on-boarding process, the ambassador program and sustainability task force.
- Develop and implement a sustainable purchasing policy

- One source reduction project that is being implemented is to require demolition contractors to submit a Waste Diversion Plan (WDP) and report donations and recycling records for County building projects. The WDP will outline provisions to salvage, recycle, and otherwise divert waste from construction and demolition landfill destinations.

While there are challenges with measuring waste reduction in the public sector, ongoing education and technical assistance will be provided to motivate businesses and citizens to reduce the amount of waste they produce. The main focus areas over the next 10 years are:

- Recycle-right initiatives through the school districts, multi-family housing groups, service clubs, community groups, and public events,
- Toxicity reduction through the Hazardous Waste program,
- Deconstruction through county policy and by partnering with organizations in the construction and demolition industry to recover materials from building projects for reuse, and
- Diversify and expand organic programs through food to people, food to animals, anaerobic digestion, and food waste composting.

### Key Elements of Communication Plan | Future Opportunities

#### Establish Strategic Partnerships

- Strengthen Relationships with School Districts – Establishing a relationship with all local public and private elementary schools would allow Olmsted County to introduce thousands of students, staff, and faculty to Olmsted County’s Integrated Solid Waste Management System. Specific emphasis would be placed on what can and cannot be recycled.

Multi-Family Recycling – Multi-unit living facilities present unique challenges for solid waste educators. Resident turnover, limited infrastructure, and a lack of managerial oversight are just some the barriers to recycling.

#### Senior Livings Facilities

- Establish relationship with a facility or activities manager within each facility.
- Provide in-person presentations, Q & A sessions, recycling demonstrations.
- Provide educational materials to a site manager for distribution among residents
- Provide instructions/artwork with large font and pictures

#### General Population Multifamily Facilities

- Establish relationship with a facility manager or representative within each facility to champion recycling.
  - Ensure facility has adequate recycling containers.
  - Provide educational materials in multiple languages as needed.
- Intercultural Mutual Assistance Association (IMAA) – Establishing an ongoing relationship with IMAA will be helpful in commuting our message to a diverse audience.
    - o **Listening Sessions** – Olmsted County will host listening sessions to evaluate various community groups’ understanding of solid waste management services.
    - o **Landlord Association** - Strengthen Relationships with City Governments – Work with the cities of Rochester, Byron, Stewartville, Eyota, Oronoco, & Dover to establish uniform/standardized educational garbage/recycling messaging between the cities and the county.

### Key Elements of Communication - Ongoing

#### Proactive and Responsive Communication/Education

- **Internal** – Maintain communication with solid waste facilities’ staff, PAC, and Facilities, HR – new



employee orientation, and other departments as needed.

- **External**

- o **Residents** – Olmsted County receives a steady stream of emails, phone calls, and Waste Wizard inquiries from residents with solid waste disposal questions. It is important that accurate responses are provided in a timely manner.
- o **Community Partners**
  - RPU
  - City Governments
    - Rochester
      - o City Ordinances
      - o RNeighbors members from various neighborhoods
    - Byron
    - Stewartville
    - Eyota
    - Oronoco
    - Dover
  - University of Minnesota Extension Master Gardeners
  - All Public and Private Schools
  - Service Groups
  - Licensed Waste Haulers
  - Earthfest
  - Environmental Commission
  - Southeastern Minnesota Recyclers Exchange (SEMREX)

- Recycling Education Committee (REC)
- Recycling Association of Minnesota (RAM)

### Digital Communication

- **Department Website** - Olmsted County's website, [olmstedcounty.gov/residents/garbage-recycling](https://olmstedcounty.gov/residents/garbage-recycling), was upgraded in December 2020. It provides a comprehensive overview of the facilities and services that comprise its Integrated Solid Waste Management System. The website is mobile-friendly and complies with Section 508 accessibility guidelines and can be viewed in over 80 languages.
  - o The last full year of typical web traffic was in 2019. In 2019, Olmsted County's solid waste pages received a combined (excluding internal web traffic):
    - 44,862 unique visitors
    - 61,336 visits
    - 116,433 page views
- **Waste Wizard** - The Waste Wizard is a web-based information hub that provides disposal instructions for over 500 items. This tool is embedded into multiple pages on Olmsted County's website.
- **Social Media** - Olmsted County utilizes social media to keep the community informed on current solid waste projects as well as weekly topical disposal tips.

- o The Olmsted County Environmental Resources Department's Facebook page is currently followed by over 800 people.
- o Olmsted County also utilizes YouTube; its "Recycling Know What To Throw" video has been viewed over 11,700 times while the Olmsted Waste-to-Energy Facility video has been viewed over 16,500 times.
- **Quarterly Department Newsletter** – With a current distribution of over 2,400 people, Olmsted County's electronic newsletter informs subscribers of current county projects and current issues and instructional content pertaining to solid waste.

### In-Person Communication

- **Solid Waste Speaking Events** - Olmsted County provides guest speakers for schools, community organizations, service groups, etc. throughout the year. Residents can submit an online speaker request form or directly contact the Environmental Resources Department via phone/email.
- **Solid Waste Tours** - Olmsted County has a long-standing tradition of providing facility tours to community groups and school children since the OWEF opened. Through a partnership with staff from Quarry Hill Nature Center (QHNC) 5<sup>th</sup>/6<sup>th</sup> grade students in the Rochester School District have been touring the solid waste facilities for over 20 years. These opportunities will continue and expand to other school districts and private and home-school

children through tours or presentations. In 2019, over 1,800 people toured the Olmsted County solid waste facilities. Staff will offer additional opportunities to citizens to see and understand the facilities through annual open house events and additional advertising for group tours.

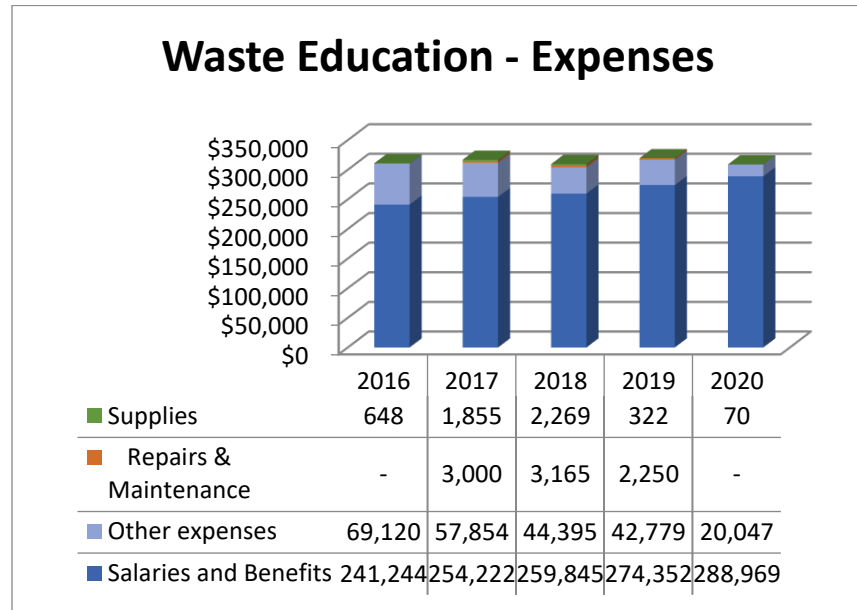
**Annual Community Events** - Olmsted County maintains a public presence at a variety of public events each year.

- **EarthFest** – typically held in April, this week-long celebration features a lineup of environmentally themed public events. Olmsted County hosts a booth at Earthfest's most popular event, the Earthfest Expo.
- **Litter Bit Better** – Rochester's annual community cleanup event, *Litter Bit Better* typically runs from late April into early May. This event is hosted by the neighborhood association, "RNeighbors." Staff from the City of Rochester's Public Works Department are instrumental in administering online registration, promoting the event, and coordinating site pick-ups. An Olmsted County representative is part of the event's steering committee and assists in event promotion.
- **Arbor Day In The Park** – Hosted by Rochester Public Utilities, this event is open to area students and to the public. While intended to emphasize the importance of trees, Olmsted County uses this opportunity to host a booth that raises awareness about Recycling.

- **RochesterFest** – Olmsted County has hosted a solid waste educational booth at Rochester’s annual community celebration. Olmsted County has also provided recycling containers for this event.
- **Olmsted County Fair** – Located in the conservation building, Olmsted County hosts an educational booth to answer the public’s solid waste questions.
- **Household Hazardous Waste Mobile Collections** – Olmsted County hosts five annual household hazardous waste mobile collections in the following communities:
  - Oronoco
  - Stewartville
  - Eyota
  - Byron
  - Chatfield

Expenses related to waste education and outreach are shown in Figure A-9 in the chart below.

Figure A-9

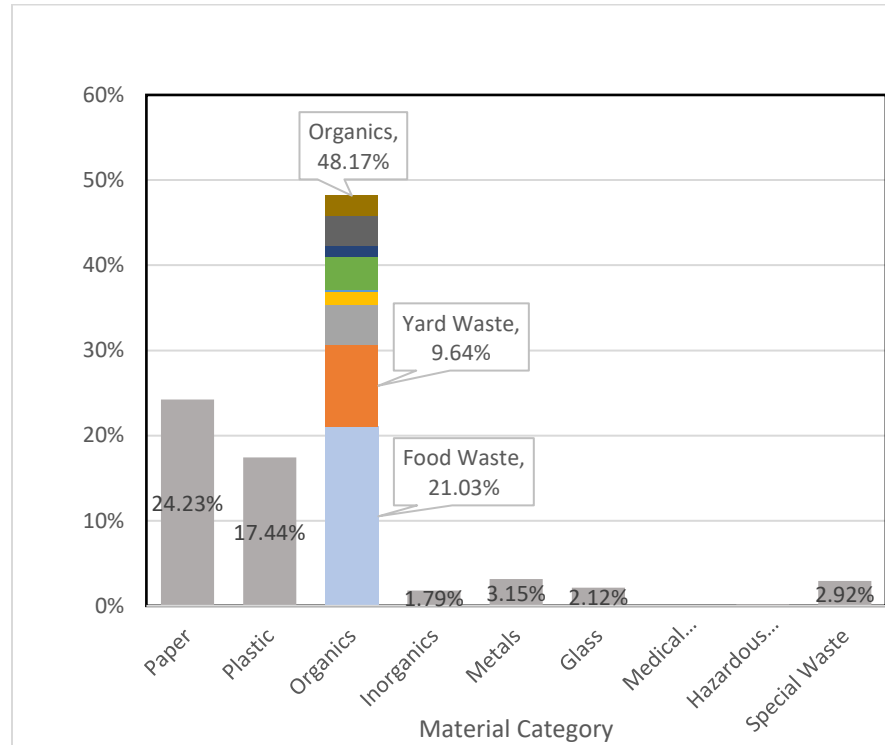


## Organics and Yard Waste Detail

Organic waste (yard, wood, and food waste) represents the most significant potential recyclable commodity deposited each year through the County’s integrated solid waste management system. In 2019, organic waste comprised almost 50 percent of what was being disposed of in the municipal solid stream. While the ultimate goal is to prevent organic waste, to begin with, Olmsted County still needs a system that safely and conveniently sustainably manages organics. Over the next ten years, Olmsted County will review opportunities to improve the methods for recovering wood waste, food scraps, and yard debris to make them resilient to changing markets and evolving community needs. Olmsted County will seek avenues for building additional capacity to process yard debris, wood waste, and food scraps locally.

Onsite management by property owners is the least expensive and most environmentally sound option for handling yard debris and food scraps. Organic composting is conducted primarily in residential settings using backyard bins and through the Olmsted County yard waste composting facility. Backyard composting is the preferred method of managing yard debris and food scraps.

Figure A-10



Olmsted County currently owns and operates a 14-acre combined yard waste drop-off and composting site on the County's Solid Waste Campus. Presently, no commercial facility in Olmsted County is permitted to accept and manage food waste. The Olmsted County Yard Waste Compost site is a Permit-by-Rule (PBR) facility that accepts grass clippings and leaves (and some garden wastes). Tree debris and other types of wood waste are not accepted at the site (Christmas trees are accepted on a limited basis from January-April). The site operates at capacity under its

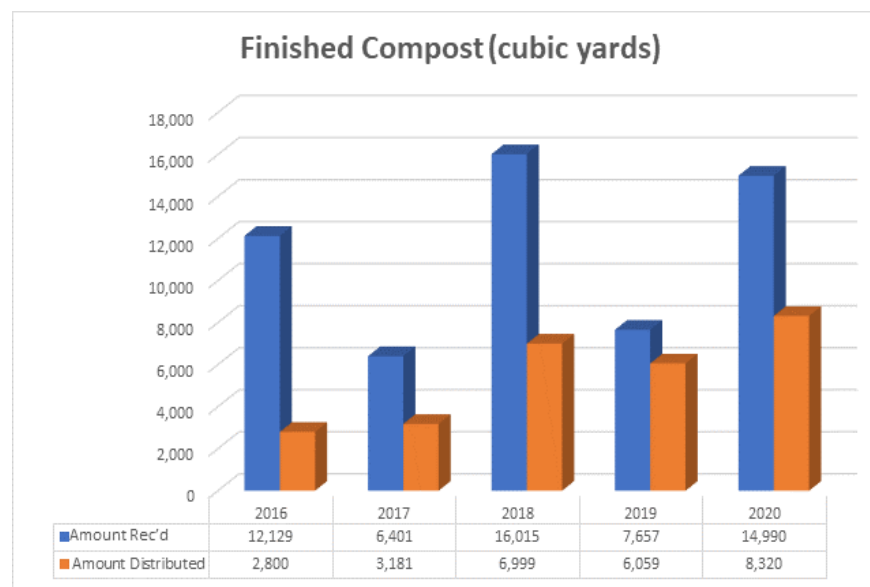
## Technical Plan

current PBR (PBR00109) and is open for business 24 hours a day, 365 days a year. Grass clippings and leaves collected at Olmsted County's public drop-off area are managed to produce a soil amendment product used by customers to improve soil health. The quality of the finished compost is high and is in demand from both County residents and businesses. The city of Rochester owns and operates a compost site near the Rochester International Airport. However, the site only accepts organic waste and sediment from their urban street sweeping activities and is not open to the general public. The compost material from this site is used on city street projects.

None of the licensed haulers collects yard waste as a service. Residents and lawncare services are the primary customers. The amount of finished compost distributed has been slowly increasing over the last few years; this may be due to the department's education and promotion of the organic material, leading to a general public awareness of the benefits of compost for improving soil health. From 2011 to 2020, the estimated quantity of finished compost distributed to customers has ranged from a high of about 8,300 cubic yards in 2020 to a low of approximately 2,500 cubic yards in 2013. During the same period, the amount of feedstock brought to the facility ranged from a high of about 23,300 cubic yards in 2012 to a low of approximately 6,400 cubic yards in 2017. The amount of feedstock being brought to the site has fluctuated over the last ten years. This variability in feedstock received at the site from year to year

is likely due to seasonal precipitation, length of the growing season, snow cover in the fall, and general residential lawn care practices. All of the compost produced at the facility is sold or donated each year to residents, businesses, and nonprofits. Actual yard waste deliveries are not weighed when they enter the facility. However, a volume estimate is documented when yard waste is put into a windrow. The volume of material composted is based on the number of payload buckets of yard waste used to create the windrows.

Figure A-11



Olmsted County accepts brush and small tree debris (no stumps or trunks) at the OCRC at the municipal solid waste

household rate. This material from the OCRC is processed at the OWEF as fuel. The City of Stewartville also provides a public drop-off site for brush for their residents. Hathaway Tree Service, Logans Tree Service, and Pro-Cut Firewood are private companies that handle brush and tree debris. Before 2019, these private companies disposed large quantities of their wood waste at Ever-Green Energy's Cogeneration Plant (a biomass-fired combined heat and power facility) in downtown St. Paul. However, the facility is currently at capacity due to the volume of emerald ash borer (EAB) infested wood being managed in the Twin Cities metro area. The cogeneration plant is not accepting tree waste from outside the metro area. Recently, Hathaway Tree Service purchased an air curtain to handle the local volume of wood waste. Olmsted County and the city of Rochester have developed a Task Force to review more sustainable options such as biochar, portable milling, and local biomass processing of the wood waste.

### Facility Description

The Olmsted County Compost Site is located on about 14 acres on the Solid Waste Campus at 310 Energy Parkway NE in Rochester. It is owned and operated by Olmsted County and is the only compost facility providing public access. The site is very long (approximately ½ mile) and narrow. The area is located on the same campus as the recycling, hazardous waste, and waste-to-energy facilities at the far north end of the property. It abuts railroad tracks and easement property owned by the Canadian Pacific Railway to the north. Further north of the site is Quarry Hill

Nature Center. The site's east side abuts the former Minnesota Department of Natural Resources (DNR) Regional Office property. South of the site is the County's Energy Park, a future industrial park slated for green development projects. A hiking/biking trail bisects the site along Energy Parkway NE.

Several stormwater holding areas were constructed onsite for precipitation control purposes. The active composting and screening area is unpaved. Runoff from the compost site drains into several ponding areas, where stormwater infiltrates into the underlying soils. Runoff is prevented from leaving the facility due to the site's proximity to a nearby stream. Odors were a concern in the past with Quarry Hill Nature Center; however, compost staff continues to actively manage the site to minimize odors through proper windrow management and avoiding pile turning on days when the wind is out of the south.

The drop-off area adjacent to the composting area is open to residents and businesses. The receiving area is unpaved and has unrestricted access. Yard waste is delivered to the site by residents, registered haulers, commercial lawn care companies, and other businesses. The facility is advertised to be open to the public during daylight hours, seven days a week from April 1st through November 31st. In reality, it is open all the time because the site is not secure.

Brush and tree waste are not accepted at the compost site. Three private companies currently handle brush and tree debris. Compostable material is required to be removed from trash bags and receptacles. Disposal containers for

the trash bags are available onsite. The County also accepts Christmas trees at the drop-off area (Christmas trees are accepted January-April). The trees are processed at the waste-to-energy facility as fuel.

### Throughput and Markets

The current market demand (by government agencies, landscapers, farmers, homeowners, and others) for compost is lower than the supply of the material produced. Over the next couple of years, the County will develop an Organics Market Development Plan emphasizing the following: 1. Identify opportunities to enhance and expand the local market for compost – target recommendations to increase the purchase of compost in the region; 2. Reduce contamination and materials in the finished product; and 3. Expand organic material processing – identify opportunities that could lead to additional regional organics processing.

Finished compost is available for pickup on the north side of the Compost Site near Energy Parkway. Donation boxes are available on-site for residents and businesses to support the Compost Site's daily operations. Suggested donations of finished compost are \$0.50 per 5-gallon bucket, \$5 a carload, or \$20.00 per pickup truck or trailer load. Olmsted County will load vehicles with a gross vehicle weight rating (GVWR) of 10,000 pounds (or greater) for \$15 per ton or \$12 per cubic yard. Financial shortfalls of the program are covered by the Olmsted County environmental service charge that is collected on your solid waste bill. In 2020, revenues at the Yard Waste Compost Site totaled

\$33,037, with an operating expense of \$119,439. Over the last five years (2016-2020), the total operating expenses were \$700,616. Financial shortfalls of the program are covered by the Olmsted County environmental service charge that is collected on your solid waste bill.

### Site Management

- Site Capacity – Capacity is impacted or limited by the windrow spacing required for the windrow and the turning frequency of the windrows. The frequency of pile turning is affected by feedstock contamination (i.e., brush, trash, etc.), odor concerns and water control (see below). There is no adjacent property available for composting operation expansion.
- Site Control – Access to the site is another concern raised by management. Since the site is not attended all of the time, people can deposit unacceptable items or yard waste with a high amount of contamination. Securing the site and appropriately charging for the service would reduce the amount contamination.
- Windrow Turning Frequency - The windrows are turned based on operator knowledge. There are no documented standard operating procedures. It is possible that a more standardized and regular procedure could reduce processing time. Process time is a key metric for addressing capacity issues.

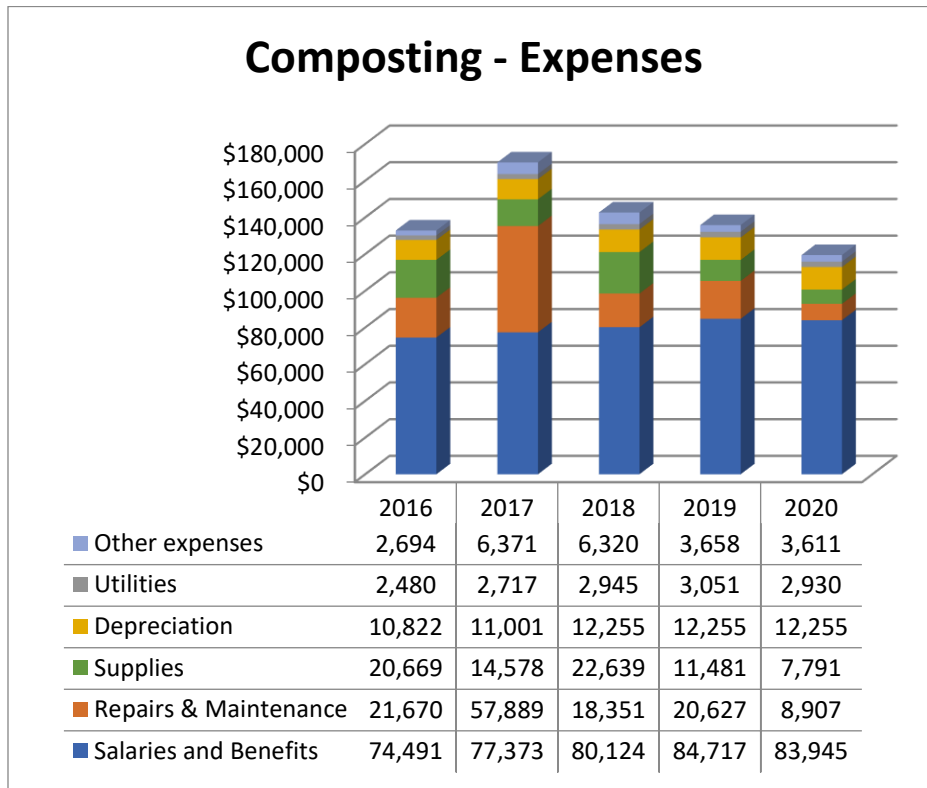
## Technical Plan

- Water Control - The compost site has been graded to facilitate water collection and prevent stormwater runoff. The stormwater holding areas become inundated during the spring and wet periods reducing accessibility and restricting the amount of space that can be utilized for windrow placement. This ponded water is used for watering the windrows during the dry season.
- Feedstock Contamination Control - The site operator spends approximately 20 percent of each day removing brush, bags of garbage, and other materials inappropriately discarded by the users of the site. The operator is also periodically asked to work at other County solid waste facilities. These factors reduce the amount of time the operator can designate towards effectively managing the composting operation.
- Odor Concerns - Odor can periodically be a problem at the facility due to the high ratio of grass (high nitrogen content) in the feedstock in the summer, the frequency of turning the windrows, and if materials are located in low-lying areas where they become wet or saturated. Wind direction is also a concern because of its impact on neighbors to the north.
- Operating Costs – SCORE revenues do not completely cover annual operating costs. If site access is controlled, the remaining amount could be collected as a tipping fee from yard waste generators. The cost would

be in the range of \$5.00 to \$10.00 per cubic yard of material delivered. In addition, the equipment at the facility is capable of handling greater material quantities, as is likely with the projected growth in population. Managing these additional materials will lower the unit cost required to make the program self-financing.



Figure A-12



### Source-Separated Organics Composting System Detail

In 2019, food waste comprised more than 21 percent of the municipal solid waste stream in Olmsted County. For the County to reach its sustainability and climate goals, food waste will need to be diverted from disposal facilities, requiring the development of more infrastructure in the region. To address some of these concerns, Olmsted County updated the Solid Waste Ordinance and Zoning Ordinance to allow for the separation, storage, collection, and transport of source-separated organic material (SSOM) and establish siting requirements for commercial composting facilities and anaerobic digestion (AD) plants. Currently, no commercial-scale composting operation or AD plant operating in the region to process SSOM.

In 2020, Olmsted County began working with a nonprofit organization interested in developing commercial composting sites using Johnson Su bioreactors to process food waste and other organic materials. That same year Olmsted County began working with a Danish AD company interested in developing a co-digestion plant in the western part of the County that would accept SSOM as part of their feedstock. The company is currently looking at property in Winona County for a regional co-digestion plant with the potential of accepting SSOM from Olmsted County. In addition, County staff is working with a company developing a Feasibility Study for developing an AD plant for SSOM as part of the County's integrated solid waste management system. Olmsted County supports the use of AD to process

SSOM and through mixed waste processing and for the MPCA to quickly develop clear regulatory pathways for its implementation. AD implementation in the region is critical for ensuring sufficient capacity exists for organics processing. In addition, the County will seek opportunities to develop commercial composting capacity in the area for SSOM.

As organics management capacity develops in the region, Olmsted County is focused on a two-track approach to organic waste management. The first track involves the County continuing to work with local food producers, grocers, restaurants, institutions, and schools to prevent food waste and increase food recovery by donating surplus meals and staple food items to local food banks and food-to-animals. The second track focuses on implementing a collection and processing system to recycle organic waste that cannot be diverted to higher end uses. Olmsted County will first focus on the institutions and businesses that are high-volume generators of food waste where the material can easily be recycled. The second area of focus will examine practical ways to collect organics at the curbside. Olmsted County will consider residential collection methods, such as using durable bags co-collected with MMSW and public drop-off collection sites.

Olmsted County has also made efforts to work with local businesses and institutions targeting edible food for donation to local agencies and nonprofit organizations. Historic organics management programs have included redistribution to people, food-to-animals, and diverting the

material to commercial composting facilities outside of the region. For example, Olmsted County has worked with Community Food Response (CFR) to link the nonprofit with local restaurants, cafeterias, businesses, and grocery stores to redistribute edible food to people. In addition, two operations provide services in Olmsted County for using food waste from companies for food-to-animal consumption. They include Second Harvest Farms North in Isanti, Minnesota, and ReConserve (formerly Endres Processing) of Rosemount, Minnesota. Second Harvest Farms North collects and transports SSOM from Rochester businesses to their farm in Isanti. ReConserve collects food waste from a couple of local bakeries and processes the material into food pellets for animal feed. Olmsted County is currently issuing two Commercial Class B Hauling Licenses for collecting and transporting SSOM – Green R U, LLC, located in Blairsburg, Iowa, and Front Door to Farm, located in Hayfield, Minnesota. Green R U transports the SSOM from commercial sites to their commercial composting facility in Iowa. Front Door to Farm uses the material collected from residential customers for food-to-animals and an onsite farm composting operation. Outdated produce and meat from local grocery stores and other businesses are donated annually to Olmsted County Oxbow Park/Zollman Zoo. For example, in 2021, approximately 8,000 pounds of meat, and 3,200 pounds of fruit were donated to the zoo for animal consumption. 2021 MPCA SCORE Report data showed approximately 350 tons of food waste was diverted from the disposal facilities by commercial partners. Olmsted County will continue to build

on these relationship and seek out new partners to divert food waste from disposal facilities.

### Hazardous Waste Management Details

Toxicity reduction in the waste is critical to achieving the strategy of protecting public and environmental health. Toxic materials such as mercury from thermometers and lead from cathode ray tubes, can pose a serious health threat if not managed properly. Wastes with toxic or hazardous components that are burned for energy recovery can create problems with air emissions and/or the management of the resulting ash. Toxic or hazardous components of waste that are landfilled can create additional costs associated with the management of collected leachate or pose threats to ground water if not properly disposed.

The Hazardous Waste (HW) Program was set up with the primary responsibility of preventing hazardous material from entering the solid waste stream. A secondary responsibility was to help protect the environment (land, air and water). Olmsted County's Hazardous Waste Facility provides County residents with an outlet for unusable, unwanted, or hard to get rid of hazardous wastes and materials. In addition, the Hazardous Waste program has been designed to provide safety protection for the solid waste facilities and their employees in a cost-effective manner.

The separation and collection of hazardous waste is intended to reduce the volume of a number of problem heavy metals (including lead, cadmium and mercury) and

hazardous organic compounds entering the waste stream. These hazardous wastes contribute to toxic air emissions from the OWEF or higher metals levels in the ash, leachate or air contamination from solid waste bypassed to the Kalmar Landfill.

In 1989, Olmsted County started a partnership with the Minnesota Pollution Control Agency (MPCA) to collect household hazardous waste (HHW). The County now acts as the sponsoring County in a four-county regional HHW program. The regional facility is located in Rochester. The HHW program includes education, a product exchange, a regional collection and processing facility, and a mobile collection unit. The mobile collection unit is used to service multiple locations within the region. The four counties in the HHW region are Olmsted, Dodge, Goodhue and Wabasha. The partnership with the MPCA started as a 50-50 split in costs. Today, the counties in outstate Minnesota realize about 80% of the costs in addition to a reduction in MPCA support services. Over 15 percent of all Olmsted County households used the household hazardous waste facility in 2020.

The Hazardous Waste program has expanded over the years beyond HHW management to handle special wastes, hazardous waste generated by businesses defined as Very Small Quantity Generators (VSQGs), agricultural pesticides, abandoned wastes and wastes generated from spills.

These services are provided to 12 counties in southeastern Minnesota (while HHW is only four regional counties).

From 1999 to 2020, the HW permanent facility managed between 170 – 220 tons of hazardous materials/year. HHW wastes make up the largest fraction at about 67%, Special Wastes at about 17%, VSQG wastes at about 14%, with the remainder (about 2%) being agricultural waste pesticides, abandoned and spilled wastes.

The Regional HHW Mobile Collection system collects an additional 30-50 tons/year of waste from small communities in the four-county area with periodic one-day collections. This waste is transferred to the permanent Hazardous Waste facility for proper management.

Several wastes are targeted through education specifically for collection through the HW facility. They include: Household hazardous waste, problem materials, VSQG's, waste pesticides, mercury bearing wastes, batteries and sharps. The existing programs are expected to be continued and reviewed periodically for improvement throughout the next 10 years.

### Facility Description

The HW permanent facility is located in northeast Rochester at 305 Energy Parkway NE, adjacent to the recycling center and compost facility and near the County's waste-to-energy

facility. The HW management program also owns and operates a mobile collection unit. A tractor trailer is located in Red Wing and is used to collect and transport HW materials gathered during the one-day mobile collection events within the region.

The HW permanent facility is currently a 6,280 square foot concrete building. The facility contains an enclosed drop-off area, two loadout docks, office, bathroom with shower, laboratory with fume hood, product exchange area, bulking room, and a non-flammable drum storage area with five chemical storage bays. The storage capacity of the facility is one hundred twenty 55-gallon drums. Construction details include sloped epoxied floors with below grade containment, a fire suppression system, hard piped eyewashes, blowout panels, and a high-volume ventilation system.

Adjacent to the HW facility is a stand-alone, 312 square foot safety storage unit. This unit is used to store flammable materials. This unit has the capacity to hold forty-four 55-gallon drums per MCPA regulations.

The following is a partial list of wastes accepted at the facility:

- Aerosol cans which contain product
- Automotive fluids (except used motor oil)
- Cleaners (acids, bases, degreasers, heavy metals)
- Paints and stains (oil and latex)
- Pesticides (insecticides and herbicides)
- Wood preservatives

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- Solvent-based products (chlorinated and nonchlorinated)
- Mercury products
- Rechargeable, button and lead acid batteries
- Strippers
- Lab chemicals
- Resins/epoxies/roofing tars
- Photographic/plating wastes
- Residential generated sharps

Items that the facility does not accept are:

- Explosives
- Medical wastes (other than household sharps)
- Unknown products
- Large gas cylinders
- Radioactive waste
- Alkaline batteries
- Used motor oil

The main facility is open year-round from 8:00 a.m. to 4:30 p.m., Tuesday through Saturday.

## Equipment

Available equipment at the facility includes a forklift, lab, 1-ton box truck, paint shaker, can crusher/oil filter crusher and aerosol 66uncture (for paint spray cans).

## Personnel

There are 4 full time equivalent (FTE) employees that work the facility. The facility employees include a full-time specialist, and three technicians (2.5 FTE's). Supervision is provided by the specialist and Waste Abatement Manager. The Waste Abatement Manager is split with one-half of his time designated to the operation of the Hazardous Waste Management program, and the other half dedicated to the Recycling program. The employees all receive 24-hour Hazardous Waste Operation (HAZWOPER) and Occupational Safety and Health Administrator (OSHA) training with yearly refresher updates.

## Institutional

The Waste Abatement Manager works directly with the HHW PM's, MDA, the MPCA, disposal vendors and regional counties on programming. There is also coordination with health & safety at the facility with our Human Resources Department.

A Microsoft Access based software program was developed in 2004 to handle the program's data management requirements. The Access based software is still in use and is acceptable, although a new standardized data management program is needed.

## Operations

The HW management program operates under a contract between the MPCA and Olmsted County. The agreement describes the terms under which Olmsted County has

established and continues to operate the HW program as authorized by MN statutes.

A summary of the contract is as follows:

- The service area includes Olmsted, Dodge, Goodhue, and Wabasha Counties.
- The program is operated in accordance with the Olmsted County Operations Manual.
- The County may enter into Reciprocal Use Agreements with other MN counties or governmental units.
- The County shall notify the MPCA of program changes, prepare an annual report, and maintain records as necessary.
- The County will operate an education and waste reduction program in relation to the HW management program.
- The County will provide for the operation of the facilities to accept and manage wastes in accordance to all applicable requirements.
- The County can accept HW, VSQG wastes, abandoned wastes, special wastes including but not limited to: fluorescent or high density discharge lamps, mercury containing devices, cathode ray tubes, PCB ballasts/capacitors and batteries. The County can also collect non-household waste pesticides. Bulking of paints, solvents, fuels, adhesives, used or waste oil, and antifreeze is allowed.
- An MPCA-generated U.S. Environmental Protection Agency Identification (EPA ID) Number is used for transportation and disposal of wastes collected through the HW program.

- The MPCA shall accept generator status of wastes from the time they come into possession of the hauler under contract to the State.

The permanent facility accepts hazardous waste from the mobile collection unit, self-haulers and small businesses that participate in the VSQG program. When materials are received they are counted and weighed on a scale in the receiving area. Self-haul residents are identified by County and the number of participants are recorded.

VSQG participants must fill out an application form. This form is used to verify that the participants qualify to utilize the program. VSQG participants must include their EPA ID number on the application. If they do not have an EPA ID number, they must complete a “Notification of Regulated Waste Activity” form and obtain an EPA ID number. Upon approval of the wastes, Olmsted County provides instructions on how to safely package, store and transport the wastes to the facility. Free transportation of Olmsted County generated materials to the facility is also offered.

In 2019, the HHW mobile unit is scheduled to be present at 23 single day collections to be held in the four-county area. Waste volumes are expected between 40 to 50 tons for these collections. Five of the single-day mobile collections will be in Olmsted County. A range of 7 to 11 tons per year of HHW is managed at the four Olmsted County mobile collections.

Participating counties manage the collection process within their respective borders. They are obligated to follow safety and other operating requirements as contained in their

agreements with Olmsted County. The collected wastes are transported to the permanent facility where they are stored until the hazardous waste transporter removes the wastes.

The waste is delivered to appropriate recycling or disposal facilities. In 2019, 16 semi-load shipments were made from the permanent facility, including 6 of HW and 11 Special Waste.

### Contract and Regulatory Compliance

The HW management program operates under a number of agreements and contracts, including:

- Waste Pesticide Management with the MN Department of Agriculture (MDA)
- Special Waste/Problem Material Management with MPCA
- Spills Waste Management with local MPCA
- Hazardous Waste Management Disposal with the MPCA
- Household Hazardous Waste Management Program with the MPCA
- VSQG Waste Management with the MPCA
- Household Hazardous Waste Management Program with Dodge, Goodhue, and Wabasha Counties

The HW program with the MPCA was originally designed to address HHW. The HHW program is partially funded by the MPCA through the MPCA/Olmsted County HHW contract. The MPCA/Olmsted County HHW contract requires Olmsted County to maintain the following plans:

- Operations Plan – This manual describes the standard operating procedures for operation of the HW program.
- Safety and Emergency Contingency Plan – This plan provides safety and emergency procedures to be implemented in response to emergency situations.

A summary of policies and procedures found in Operations Plan and the Safety and Emergency Contingency Plan are provided below.

### Operations Plan

The following is a brief summary of information provided in the Operations Plan. For more detailed information, please refer to a full text document of the plan.

The plan addresses the following items:

- Collection procedures including preparedness of the site and site personnel, and receiving and inventorying the waste
- Categorizing and packaging collected waste including hazard class sorting and packaging the waste for storage and transportation
- Proper waste storage practices and product reuse



### Safety and Emergency Contingency Plan

The following is a brief summary of information provided in the Safety and Emergency Contingency Plan:

- Safety objectives, applicability and site layout and the location of safety equipment
- Responsibilities of the facility operators, hazardous waste/recycling supervisor, safety officer, employees and subcontractors
- Accident investigation policy and procedures
- Occupational injury management
- Personnel protective equipment
- Identification, analysis and control of workplace hazards
- Communication of safety and health programs to employees
- Hazard monitoring and decontamination
- Emergency Contingency Plan and Fire Prevention Plan
- Safety training and a workplace accident and injury reduction program

The contingency plan insures safe and efficient operation, and impacts every aspect of the program. The HW program is a permitted large quantity hazardous waste generator and is operating in accordance with applicable rules and regulations pertaining to the handling of hazardous waste and hazardous materials. Due to the type of materials handled, the HW program operates under mandatory procedures and is required to keep detailed records.

### Throughput

The HW management program handled 259.0 tons of hazardous materials at the County's permanent facility in 2019. An additional 33.7 tons of HW was delivered to the facility from the mobile unit, which also operates in other participating counties in the region. The following table provides a brief summary of the amount (in tons) of waste managed by the HW program and the major categories of waste handled.

Figure A-13  
HW Managed by Olmsted County (tons/year) Annually

Year	Permanent Facility	Mobile Unit	Pesticides/Poisons	Latex products	Oil-based paints	Auto Batteries	Flammable products	Fuels
2010	242.6	39.7	6.8	132.6	32.6	6	0.3	32.8
2011	250	37.1	7.5	133.9	32.6	7.5	0.4	33.3
2022	272.2	47.7	8.1	135.2	28.7	7	0.4	29.5
2013	240	25.1	8.5	129	26.4	5.4	0.6	27.7
2014	272.3	31	10.5	147	27.3	7.9	0.6	31
2015	269.3	28.9	12.9	133.9	28.7	8.8	0.6	30.3
2016	274.8	29.5	15.6	142.6	31.2	9.8	0.5	25.3
2017	294.1	35.9	14.4	156.5	35.3	7	0.8	28.5
2018	296.6	42.4	16.9	150.5	35.2	12.1	0.7	27.9
2019	291.3	32.3	17	145	29.6	12.1	0.7	30.3
<b>2020</b>	<b>C</b>	<b>O</b>	<b>V</b>	<b>I</b>	<b>D</b>		<b>1</b>	<b>9</b>

In 2019, there were 18,773 program participants representing all program sectors serviced at the permanent facility. About 45% of the materials collected are reused through the Reuse Center. There were 58 VSQG transactions, which generated 16.3 tons, or 6.3% of all materials by weight. Annual reports indicate that HHW, and VSQG participation have leveled off over the past few years. Facility closures, operations and hours were dramatically affected in 2020 by COVID-19.

### Financial Analysis

The HHW program does not charge its customers to drop off HHW generated wastes. As indicated earlier, the HHW program generates 2/3rds of the waste at the Hazardous Waste Facility. The VSQG and Special Wastes program has a published price list for these transactions which, in contrast to the HHW program, is designed to offset costs by

using fee-for-service. Fee-for-service is also used for spilled and abandoned wastes. Disposal costs for agricultural wastes, as well as HHW generated pesticides are paid for by the MDA. The processing and disposal of architectural paints (oil and latex) are paid for through a contract with PaintCare.

### Observations

- The current HW facility is adequately handling the current volume of materials encountered. However, if volumes continue to increase due to population growth, and/or if new programs are implemented, certain operating procedures can be changed to increase capacity, such as increasing the frequency of disposal (reducing the time material is stored on-site), safety is affected by the amount of open operating and storage space available.
- The data management system needs to be upgraded so that it is compatible with other Environmental Resources Department programs.

Olmsted County expects to continue to operate the Hazardous Waste Facility throughout the next 10 years.

### Recycling Detail

The Olmsted County recycling program is an integral part of its waste management system. The voluntary recycling program began in 1983. The recycling program became mandatory in 1990 and remains so today. Over the years, Olmsted County has adopted the state recycling goals and currently meets and exceeds those goals. The County intends to continue to meet and exceed state recycling goals in the future (see Goal Volume Table).

The cities of Chatfield, and Eyota contract for garbage and recycling collection. Residents can also self-haul their solid waste, special wastes, and recyclable materials to the Olmsted County Recycling Center Plus (OCRC) which is owned and operated by Olmsted County. The current operating hours at OCRC are 8:00 a.m. to 4:30 p.m. Tuesday through Saturday.

Olmsted County is looking at options to improve recycling by exploring opportunities with the Mayo Foundation, improvements to multi-family and construction of a MRF. A somewhat transient population means that many residents may not be familiar with the recycling program and the role it serves in the integrated management system.

The MRF will provide many benefits to the County's integrated waste management system such as recovering recyclable materials in the MSW, providing an opportunity to

divert organics, and process single-stream recyclables, among other things. A MRF could provide a business synergy by utilizing steam produced at the OWEF to operate and improve greenhouse gas emissions by not having to transport the material to the Twin Cities for processing. It could potentially improve the amount of material recycled by providing smaller haulers with a one-bin option.

Olmsted County is looking to develop of a facility at the energy park on the County-owned land between the OWEF and the Rochester Community and Technical College. Other changes under consideration for implementation over the next 5-10 years include enhanced community outreach and expanding the existing problem materials and material exchange programs.

### Recycling Facilities

Recycling collection and processing, like solid waste, is primarily handled by the private sector. Most areas in the County can be and are serviced by the Commercial Haulers.

Rochester is the only city in the county with a population over 20,000, but all of the municipalities, including Rochester have curbside collection of at least four types of materials available at least once per month. As an option to private collection, residents can also self-haul their solid waste and recyclables to the Olmsted County Recycling

## Technical Plan

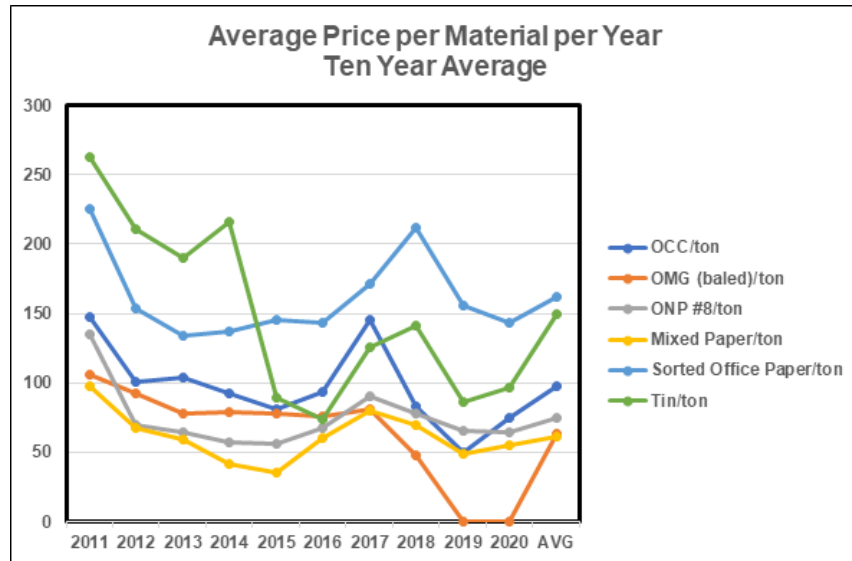
Center Plus (OCRC) which is owned and operated by Olmsted County. The OCRC accepts the following recyclable materials: newspaper, corrugated cardboard, magazines, office paper, phone books, food glass bottles and jars, aluminum beverage cans, steel food (tin) cans, empty paint and aerosol cans, and plastic bottles with a neck (#1 & #2) and dairy containers (#5). The facility also accepts self-hauled garbage, and special wastes (tires, electronics, mattresses and appliances). The current operating hours at OCRC are 8:00 a.m. to 4:30 p.m. Tuesday through Saturday.

There are several other recyclable material processing facilities in Olmsted County in addition to the OCRC. One is owned and operated by the Mayo Foundation. One is privately owned and operated and processes only commercial corrugated cardboard. There are 8 licensed haulers in Olmsted County that provide weekly or bi-weekly curbside collection service to their customers. Most provide single-stream recycling services and utilize the Republic Services, WM Recycle America, and DemCon materials recovery facilities in the Twin Cities to sort the recyclables collected. Large metal processing facilities in Olmsted County are Jennings Scrap and Watson Recycling. Operations – Government Buildings Recyclables Collection Recyclables collection service to public buildings, including the City of Rochester and other Olmsted County buildings is Recycling collection in Olmsted County and City of Rochester owned buildings is provided by OCRC staff. Approximately 14 locations are served in which about 300

tons/year of recyclable materials are collected and processed. Materials collected include: Office paper, mixed paper, aluminum cans, plastic and glass bottles, cardboard boxes, phone books and tin/steel cans. A complete list of the materials collected is included in Attachment G (Recycling Guide for Olmsted County & City of Rochester Offices). The recyclable materials from the various government buildings on the “government route” are delivered to the Olmsted County Recycling Center Plus where they are processed and marketed. This offsets the costs of the program. This program is expected to be ongoing.

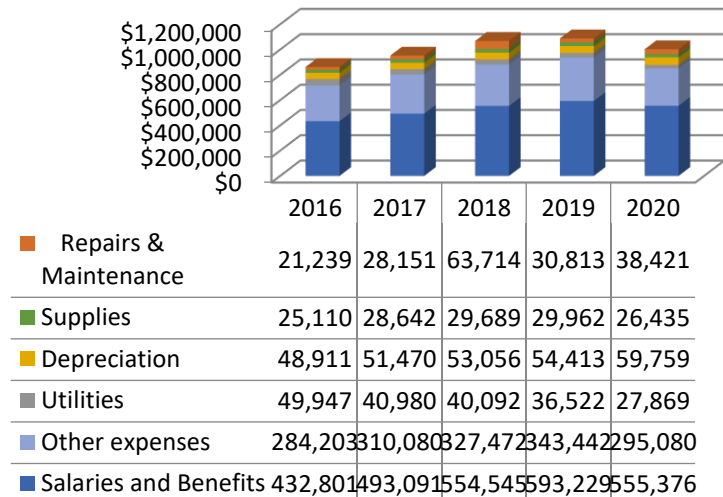
The majority of materials are marketed through the Southeastern Minnesota Recyclers Exchange (SEMREX) and shipped to end markets in Minnesota, Wisconsin and Iowa. Because of the quality of the source-separated materials from the OCRC and SEMREX’s strong relationships with its end markets, there have been no problems marketing materials from the facility.

**Figure A-14**  
**PRICE PER TON AVERAGE**



**Figure A-15**

## Recycling Services - Expenses



### Special Waste Management

Olmsted County includes problem materials as part of the overall recycling program. The policy and goals for managing the materials in this section are to assure any hazardous waste is managed properly and recyclable materials are recycled if possible. Olmsted County has adopted the state recycling goals and currently meets and exceeds those goals.

#### Waste Tires

In 2021, approximately 2,472 tons tires were recycled in Olmsted County.

A storage permit is not required for an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises. There are various private companies that collect no more than 500 waste tires on the premises. Since these companies are not required to obtain a permit, the exact number is unknown.

Enforcement and clean-up of illegal storage or disposal sites are handled by the Olmsted County Environmental Resources Department, Planning Department, the County Attorney's office, local authorities and the Minnesota Pollution Control Agency as needed. There are currently 3 properties conducting clean-up activities in accordance with county ordinance, Minnesota Rules and state law. One of those sites is under enforcement action with MPCA.

The Olmsted County Waste-to-Energy facility is permitted and has always received small "incidental" quantities of tires.

In 2021 the County changed its policy on acceptance of waste tires. Acceptance of waste tires at the Landfill was contingent on shredding the tires. However, the maintenance costs for the shredder have become burdensome and given the limited shredding needs for other waste types at the Landfill, replacing the shredder has been delayed indefinitely. Therefore, accepting large loads of tires at the Landfill is no longer an option. Customers may still deliver small household quantities of tires (i.e., less than 8 passenger tires) to the OCRC. Any customers that desire to deliver large loads to the Landfill or to a private recycler.

The Olmsted County Waste-to-Energy facility is permitted and has always received small "incidental" quantities of tires since it began operation in 1987. Before the addition of the 3rd Unit, the OWEF was at capacity, so the tires delivered to the OCRC were directed to a vendor in the Twin Cities that "recycled" them, burning 80% of them for energy in facilities with fewer emissions controls than the OWEF and charging a fee. Once capacity was available at the OWEF, it made sense environmentally and economically to process these tires for their energy here where they are generated. This program is ongoing, and no changes are expected in the next 10 years.

Olmsted County ordinance addresses the issues of storage and disposal and prohibits the burning or burying of waste

tires on site. Tires from unpermitted types of sites are handled by recycling through private vendors or processing those delivered to Olmsted County facilities.

### Electronic Products

Consumer electronic products are accepted at the OCRC for a charge and at private businesses in Olmsted County. The OCRC collects about 325,560 pounds annually. Electronics management is based on a fee-for-service model so that overall costs vs. revenue are calculated as neutral. The County does no processing on-site, and currently uses a licensed state contractor to manage the waste. Electronics management information is available on the Olmsted County Solid Waste web site, and various other educational venues. Educational materials and outreach efforts on recycling include information on what to do with electronics.

A total of 418,720 pounds of commercial electronics recycled was reported in 2021 by various vendors.

The E-waste collection program is the responsibility of the Waste Reduction Manager, and OCRC staff. Management of e-waste takes approximately 1.0 full time equivalent (FTE) employee and is included in the OCRC budget. Olmsted County will continue to accept electronic products in compliance with state or federal mandates throughout the next 10 years.

The approximate staff time required to manage tires brought to the facilities is about .1 FTE staff time. Other associated costs are included in the OCRC or Kalmar Landfill budget.

### Major Appliance Management

Olmsted County accepts major appliances for a fee. Individuals and companies wishing to dispose of their white goods are directed to the public drop at the OCRC where a special area has been designated for their collection. Appliances collected are then turned over to a licensed appliance recycler for disposal. In 2021, over 800 tons of appliances were recycled in Olmsted County — half of which was recycled through private businesses and the other half through the OCRC. The appliances are repaired and reused if possible, but most are disassembled for material recovery. Estimated staff time to handle appliances at the OCRC is approximately 5 minutes per unit and is included in the OCRC budget. Olmsted County intends to continue handling appliances in this manner. The cost of managing this program is included in the OCRC budget.

Components containing hazardous substances are disposed of at permitted hazardous waste sites. Residents can also take their stoves, washers and dryers to local appliance recyclers. Appliance dealers also take back used appliances for recycling with purchase.

### Motor Vehicle Fluids & Filter

The County endorses state policies and strives to keep waste oil out of the waste stream and encourage proper



handling resulting in the reduction of surface and groundwater contamination. Olmsted County supports the current laws by including information in solid waste presentations, on the web site, in newsletters and other publications. In 2021, Olmsted County licensed haulers and businesses reported 483 tons of used oil and 21 tons of antifreeze properly managed in Olmsted County.

Olmsted County accepts used oil filters at the Hazardous Waste Facility. In 2021, Olmsted County businesses and licensed haulers reported that 52 tons of used oil filters were recycled in Olmsted County. Funding for handling these products is included in the Hazardous Waste Facility budget. Responsibility for this as with the other hazardous waste programs is with the Waste Abatement Manager and the Hazardous Waste Facility staff. Estimated staff time required for this program is approximately one hour per week.

This program is expected to be ongoing.

### Lead-Acid and Dry Cell Battery Management

In 2021, businesses and licensed haulers reported 409 tons of vehicle batteries recycled in Olmsted County. The HHW Facility accepts lead acid, Nickel-Cadmium, lithium ion, and all button batteries. Management of batteries is included in the Hazardous Waste Facility budget. Public education related to proper battery management has been targeted through the education outreach programs. Handling of Lead-Acid and Dry Cell batteries will continue on an

ongoing basis. Responsibility for this and the other hazardous waste programs is with the Waste Abatement Manager and the Hazardous Waste Facility staff. Estimated staff time required for this program is estimated at four hours per week. This program is expected to be ongoing.

### Mercury Bearing Product Management (includes fluorescent tubes)

Discarded mercury bearing products including mercury switches have been targeted through the County's Technical assistance and educational outreach programs included in Section 4.2. Collection boxes are strategically located at key businesses around the county to collect mercury bearing products. In addition, mercury bearing products are also collected free of charge at the Hazardous Waste Facility. Olmsted County handles mercury switches as referenced in the Olmsted County Mercury Control Plan available through the Olmsted County Environmental Resources Office or by calling 507-328-7070.

Used fluorescent bulbs are prohibited by Minnesota Statute (Section 115A.932) from being disposed at a solid waste facility. Fluorescent bulbs are collected at the Hazardous Waste Facility. Rochester Public Utilities currently pays for the recycling of compact fluorescent bulbs from residents to encourage switching to the more energy efficient bulbs. In 2021, the Olmsted County Hazardous Waste Facility collected:

- 59,553 Fluorescent Bulbs = 3.65 lbs.

## Technical Plan

- Metallic Mercury = 21.6 lbs.
- Mercury Thermometers (191) = 0.217 lbs.
- Mercury Thermostats (323) = 2.202 lbs.
- Mercury Switches (17) = 0.135 lbs.
- Total Mercury = 27.8 lbs.

Staff will continue to educate residents and businesses that use or produce these products and collect devices that contain mercury for proper management. Funding for handling these products is included in the Hazardous Waste Facility budget. Mercury collected through the Olmsted County program is recycled through licensed vendors. Responsibility for this as with the other hazardous waste programs is with the Waste Abatement Manager and the Hazardous Waste Facility staff. Estimated staff time required for this program is approximately four hours per week. This program is expected to be ongoing.

### Resource Recovery Detail

#### Introduction

The primary waste processing technology in Olmsted County is the Olmsted Waste-to-Energy Facility (OWEF). The OWEF is a mass MSW combustion facility consisting of three different boiler units that run 24 hours per day, 7 days per week processing up to 400 tons per day. The incoming waste is converted to energy in the form of steam for heating, cooling, and electricity generation. The OWEF is owned and operated by Olmsted County. Olmsted County has made a significant investment in the waste-to-energy component of its integrated system to comply with the Minnesota Solid Waste Hierarchy as established in the Waste Management Act of 1980. There are no current plans in place to expand this facility in the next 10 years; however, the continued utilization of this technology will be used over the next 10 years and beyond.

#### Operations

Over the course of a year with planned and unplanned outages, the OWEF can process an average 330 tons per day. MSW is typically delivered to the facility Monday thru Saturday. An automated scale system was installed in 2020 that allows licensed haulers to deliver waste 24 hours per day, 7 days per week. During maintenance outages, waste may be diverted to the County owned and operated Kalmar Landfill. Figure 1-5 shows the general flow of waste materials through the current Olmsted County integrated solid waste system.

Routine and planned maintenance is scheduled multiple times a year for all three units. The planned operating schedule of each boiler allows normal planned maintenance to be accomplished without interrupting the supply of steam or electricity. Units 1 and 2 typically have three outages per year, with each outage averaging two weeks. Unit 3 has two planned outages per year, with each outage lasting approximately three weeks. Since 2011, the OWEF units have had a combined effective average uptime availability of 72%. Figure A-16 provides the uptime availability of the combined units from 2011 through 2020. The OWEF rarely goes into a complete shutdown, where all 3 units are simultaneously offline. Typically, there are at least 2 units running. If there is a need for supplemental steam or electricity, the OWEF utilizes the natural gas boiler (steam) and the diesel generator (electricity).

Removing glass and metals from the waste stream would play a role in alleviating issues that arise when non-combustible materials (e.g., aluminum, other metals, etc....) are placed into the combustion units. These materials add excess wear on the components of the furnaces and can cause the ash discharges to become plugged. As a result, the operation's efficiency decreases because it causes downtime and costly repairs. A Materials Recovery Facility will improve the efficiency of this operation by removing non-combustible materials before they enter the combustion units.

**Figure A-16**  
**Annual Combustion Unit Availability**

Year	Combustion Unit Availability (%)
2011	58.8%
2012	63.2%
2013	69.7%
2014	61.6%
2015	70.6%
2016	74.8%
2017	78.4%
2018	81.1%
2019	82.0%
2020	78.0%
<b>Average</b>	<b>71.8%</b>

In 2020 the OWEF scale was upgraded to incorporate more automation. Haulers can deliver waste 24-hours a day with the automated scale by entering the required information. The vehicles are also tracked on camera with each vehicle transaction tagged with an incoming weigh-in picture and an outgoing weight picture.

The majority of waste delivered to the OWEF is from Olmsted County, via their transfer station, and the city of Red Wing. Within Olmsted County, licensed commercial waste are required through a designation ordinance to assure waste generated in Olmsted County comes to one of the designated facilities. Figure A-17 shows the portion of waste generated from various counties and cities since 2011. Waste generated from sources outside of Olmsted County and Dodge County may change from time to time, with more changes expected to occur with the commissioning of the MRF.

Figure A-17: Waste County of Origin

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Olmsted County	85,594	87,180	91,054	87,231	97,499	94,000	93,629	93,915	99,285	96,160	96,545
Dodge County	7,505	6,966	5,095	7,638	8,431	8,490	8,461	8,404	9,243	9,857	10,145
City of Red Wing	324	254	105	396	3,015	2,695	7,575	8,042	5,412	7,448	6,899
Anoka County								670			
Blue Earth County						17	52	64			
Dakota County				396	375	367	419	819	720	672	702

Figure A-17: Waste County of Origin

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fillmore County						89	272	374	394	287	333
Freeborn County							0	1			0
Hennepin County							120	277	182	251	252
Iowa County				350	375	472	987	978	120	191	187
Mower County	169	251	210	193	187	9	146	11	8	20	31
Nicollet County					94			1			
Ramsey County							16	29			

Figure A-17: Waste County of Origin

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Rice County				175	34	39	122				
Steele County											5
Waseca County							49				5
Wabasha County	81	254		350	375	272	221	209	133	92	195
Winona			97	161		323	2	57	62	97	55
Wisconsin						0		4,503	3,220		
Mayo Clinic											

## OWEF Revenues and Costs

### Agreements

The OWEF provides energy in the form of steam and electricity to various facilities in Rochester. As of December 2021, the current list of customers is presented in Table A-18. The district energy steam line from OWEF to downtown Rochester is planned to be decommissioned in October 2023. The pipeline has reached the end of its design life and an economic analysis was performed to estimate the cost of replacement. The analysis demonstrated a cost of over \$30 million to replace the line and it was determined this investment would be put into upgrading the electric turbines and other resource recovery investments, such as the MRF and other steam use development opportunities. After the decommission, the customer list will be reduced. The use of steam and/or electricity is continuously evaluated against future opportunities. In the near-term, the steam will be used for electricity generation. The County is working on developing a County-owned property near the OWEF, known as Energy Park, for the purpose of supporting industries that can utilize the OWEF energy as steam or electricity.

Figure A-18: OWEF Energy Customers

Steam	Olmsted County Campus
	Rochester Community and Technical College
	University Center Rochester
	Federal Medical Center
	Government Center
	City Hall
	Olmsted County Work Release Center
	Mayo Civic Center
	Rochester Public Library
Retail Electricity	
	Olmsted Community Service Campus
	SMPA
Domestic Water	Olmsted County Campus
	Federal Medical Center
Chilled Water for Air Conditioning	Olmsted County Campus
	Federal Medical Center



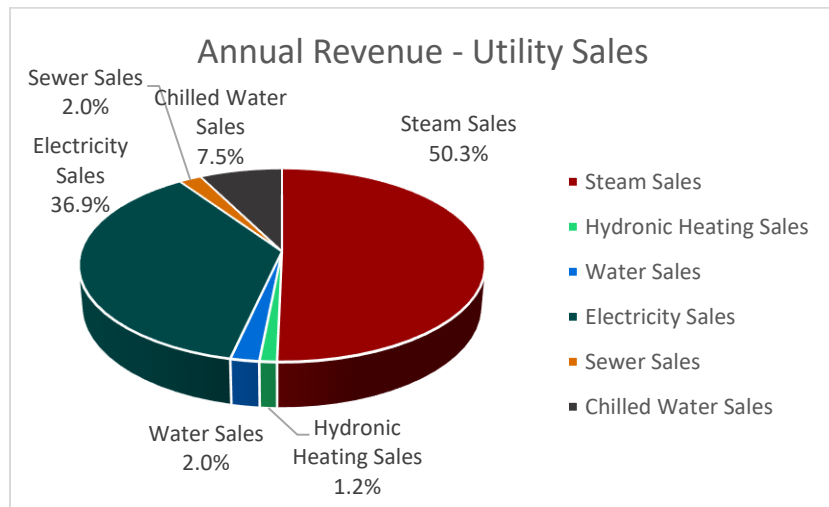
## 2020 OWEF Utility Sales

In 2020, Olmsted County received \$3,892,062 from the sale of utilities produced at the OWEF. As shown below, most of this annual revenue is due to steam and electricity sales.

The OWEF also sells chilled water, hydronic heating, soft water and manages a sewer utility for additional revenue.

**Figure A-19**

**OWEF 2020 Annual Revenue (\$3,892,062)**



## Capital Costs

Table 4X provides the OWEF construction and major upgrade capital costs since 1986

**Figure A-20: OWEF Capital Costs**

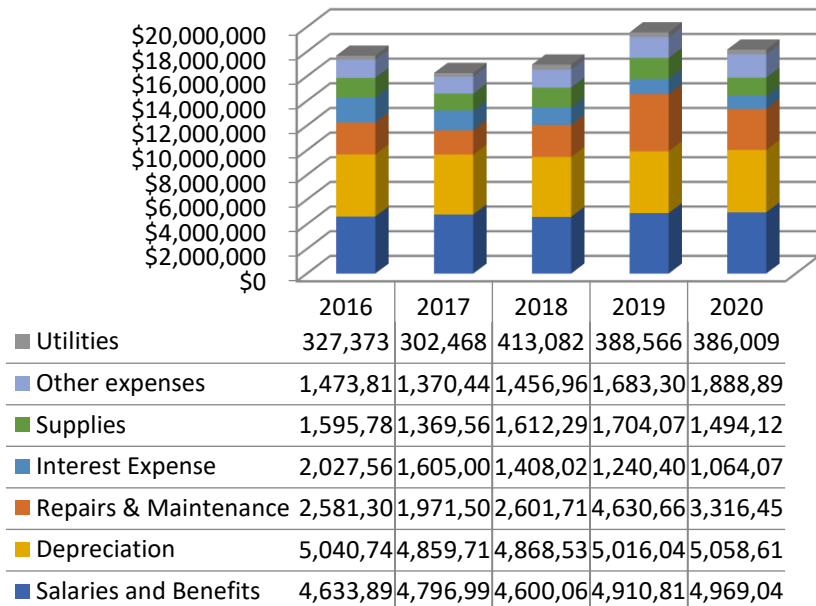
Project	Year	Cost
OWEF Units 1 and 2	1986	\$22 million
APC Upgrade	2003	\$10 million
Unit 3 Expansion	2009	\$96.5 million

## Expenses

Figure A-21 presents the OWEF unit's expenses from 2016 through 2020. Capital purchases are excluded from expenses as these are capitalized on the balance sheet of the Solid Waste Fund and depreciated over the estimated useful lives of the assets. The depreciation expense is shown to reflect the estimated annual cost of the assets being used for operations.

Figure A-21

## Resource Recovery Plant - Expenses



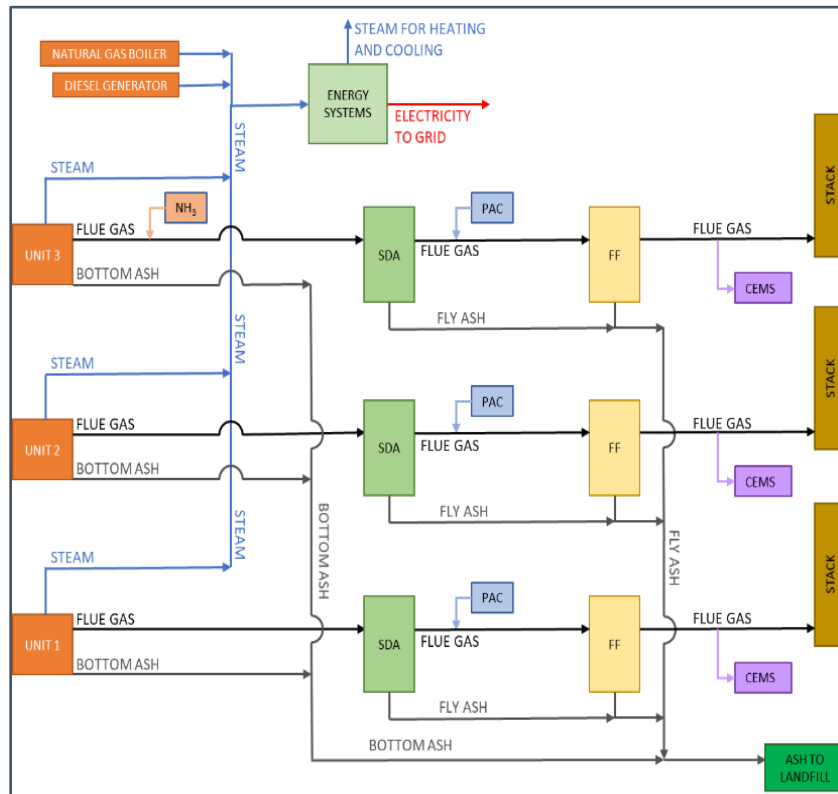
Revenues are presented on a system wide basis since they contribute to the entire integrated solid waste management system. Debt from the construction of Unit 3 is set to be fully paid by the end of 2027.

### Regulatory Compliance

The OWEF has an air emission permit from the MPCA that imposes strict air emission limits, outlines monitoring and testing requirements. Air emissions from the OWEF have consistently been well below the MPCA permitted limits.

The OWEF is a state-of-the-art facility that is designed and operated to minimize air emissions. The flue gases from waste combustion pass through a series of air emission control devices (see Figure A-22).

Figure A-22 – Diagram of the OWEF



ACRONYM – AIR POLLUTION CONTROL SYSTEM	
CEMS	CONTINUOUS EMISSIONS MONITORING SYSTEM CEMS CONTINUOUSLY MEASURES CARBON MONOXIDE, SULFUR DIOXIDE, OXYGEN, AND NITROGEN OXIDE (NOX)
FF	FABRIC FILTER BAGHOUSE THE FABRIC FILTER BAGHOUSE COLLECTS MICROSCOPIC PARTICULATES AND FILTERS THEM OUT WITH THE FLY ASH
NH <sub>3</sub>	AMMONIA (UNIT 3) AQUEOUS AMMONIA IS ADDED TO THE FLUE GAS OF UNIT 3 TO CONTROL NOX EMISSIONS.
PAC	POWDER ACTIVATED CARBON POWDER ACTIVATED CARBON IS INTRODUCED TO THE FLUE GAS TO CONTROL METALS (MERCURY) AND DIOXINS AND FURANS. THE PARTICLES ARE CAPTURED WITHIN THE FABRIC FILTERS
SDA	SPRAY DRYER ABSORBER THE SPRAY DRYER ABSORBER UTILIZES A LIME SOLUTION TO CONTROL ACID GASES (HYDROGEN CHLORIDE) AND DIOXINS AND FURANS.

## Major Compliance Components

Each facility has specific compliance components that need to be monitored and managed. The major permits or **Figure A-23 Facility Compliance**

compliance items for each facility are found below in **Figure A-23**. Olmsted County’s solid waste facilities are meeting the terms of their permits.

Facility	Compliance Items	Regulatory Authority	Status
<b>Yard Waste</b>	Surface water	MPCA–Compost Rules	No discharges, as required
	Odors	None	Infrequent complaints
	Dust	MPCA–Air Quality Rules	On-site watering, as needed
	Inert contents	MPCA–Compost Rules	Meets criteria
	Nutrient content	None	Annual evaluation
<b>Recycling Facility</b>	Solid waste transfer permit	MPCA	Permit by Rule – Meets criteria
	Appliance recycling	MPCA	Meets criteria
	Electronics	MPCA	Meets criteria
<b>Hazardous Waste</b>	Operations Contracts	MPCA & co-sponsoring	Current; renewal in 2023
	Contractor Disposal	MNDOT and MPCA	Meets criteria
	VSQGs	MPCA and MNDOT	Meets criteria
	Special Wastes	MPCA	Meets criteria
	Ag Waste Pesticides	MPCA - MDA	Meets criteria – renewed contract in 2022
	Household Sharps	MPCA/contract with Mayo	Current - automatic renewal unless terminated
	Sewer discharge permit	None	Meets criteria
<b>OWEF</b>	Air Quality Title V permit	MPCA	Current; Renewal 2012 (amendment pending)
	Ash management	MPCA	Meets criteria
	Sewage discharge permit	RWRP	Meets criteria
	Infectious waste mgmt.	MPCA	Meets criteria
	Industrial waste mgmt.	MPCA	Meets criteria
	Mercury Control Plan	MPCA	Meets criteria
	NPDES (Stormwater)	MPCA	Meets criteria
<b>Landfill</b>	Solid Waste Mgmt Facility Permit	MPCA renewal application submitted 8/16, modification 5/19, approval 2020	Expires February 2030
	NPDES	MPCA	Meets criteria
	Leachate disposal	MPCA	Meets criteria
	Leachate Management Plan	RWRP/Met Council	Meets criteria
	Industrial waste mgmt	MPCA	Meets criteria

## Landfilling Details

### Introduction

The Kalmar Landfill began operation in 1990 and provides the land disposal component of the County’s integrated solid waste management system. The location of the landfill was selected due its favorable geologic conditions. The site contains depths of low permeable soils in excess of 50 feet, which acts as a natural liner below the engineered liners. Any materials that cannot be diverted, reused, recycled, composted, or processed at the OWEF is landfilled. The Kalmar Landfill is comprised three distinct disposal areas: the waste combustor ash disposal area, the C&D disposal area, and the MSW disposal area. Each disposal area is operated independently; however, resources and staff are shared between the areas.

The Kalmar Landfill permit was most recently renewed in 2020 with a major modification to the ash disposal area. The modification included a significant increase in overall ash disposal capacity (1,043,700 cubic yards to 1,884,900 cubic yards). The permit was modified in February 2022 to extend the operating life of the current C&D disposal area, by reorienting the future expansion area.

Disposal rates for the three disposal areas since 2016 are presented in Figure A-24 below.

**Figure A-24 – Annual Waste Quantities**

Waste Type	2016 Tonnage	2017 Tonnage	2018 Tonnage	2019 Tonnage	2020 Tonnage
Demolition	4,691	6,973	21,427	14,717	26,426
Ash	29,631	31,636	28,400	30,178	28,733
MSW <sup>1</sup>	-2,145	-1,279	1,041	2,455	1,656

<sup>1</sup> The tonnages provided in the MSW include the net of all MSW, ISW, and asbestos accepted less all waste hauled back to the OWEF and recycled in the given year. The number is the net amount of waste remaining in the Bypass Disposal Area at the end of the year. It also includes any recycled materials from the working face.

Figure A-25 provides an overview of the permitted capacities and remaining life for the three disposal areas.

**Figure A-25 - Current Design Capacities**

Waste Type	Currently Permitted(1)(CY)	Remaining Permitted (2) Volume (CY)	Current Permitted Life(3) Capacity (yrs)	Ultimate Operational Capacity (CY)	Total Life (years)	Average Annual Disposal Volume
Demolition	498,300	48,367	<5	498,300	<5	15,000
MSW	1,583,100	479,942	>50	1,583,100	>50	3,100
Ash	1,884,900	1,179,437	57	1,884,900	57	20,8005

- (1) Volumes granted for the current 10-year permit term: 2020-2030
- (2) As of the end of 2020.
- (3) Current life without any changes to permitted capacity or operation

## MSW Disposal Area

The MSW disposal area consists of seven permitted disposal cells. Cell 6B was the most recently developed cell, constructed in 2007. The development of the MSW disposal area is presented in Figure A-26 below. The

estimated development of Cell 7B is also included based on the current waste projections. No capacity is currently planned or permitted beyond Cell 7B.

**Figure A-26: OPENING AND CLOSURE YEARS OF THE MSW DISPOSAL AREA**

	Cell 1B	Cell 2B	Cell 3B	Cell 4B	Cell 5B	Cell 6B	Cell 7B
<b>Open</b>	1991	1997	2000	2003	2005	2007	2071
<b>Closed</b>	2003	2009	2021	2058	2060	2062	2244
<b>Design capacity (cubic yard)</b>	185,000	208,200	208,100	219,900	219,900	237,700	304,300

Estimated dates based on historic waste

## Ash Disposal Area

The ash disposal area at the Kalmar Landfill manages the MSW waste combustor ash from the OWEF and the Mayo waste incinerator. The area currently consists of 6 constructed disposal cells (Cells 1A through 6A). It is

permitted through Cell 10A. The most recent cell (Cell 6A) was constructed in 2021, and the most recent cell with final cover placement was Cell 4A. Figure A-27 below shows the historic development of the ash disposal area and the projected development based on historic waste.

**Figure A-27: OPENING AND CLOSURE YEARS OF THE ASH DISPOSAL AREA**

	Cell 1A	Cell 2A	Cell 3A	Cell 4A	Cell 5A	Cell 6A	Cell 7A	Cell 8A	Cell 9A	Cell 10A
<b>Open</b>	1992	1994	2000	2008	2014	2021	2027	2035	2043	2050
<b>Closed</b>	2003	2014	2021	2021	2029	2036	2044	2051	2060	2060
<b>DESIGN CAPACITY (CY)</b>	144,100	172,300	156,500	153,200	146,300	164,100	232,300	231,200	227,900	257,000

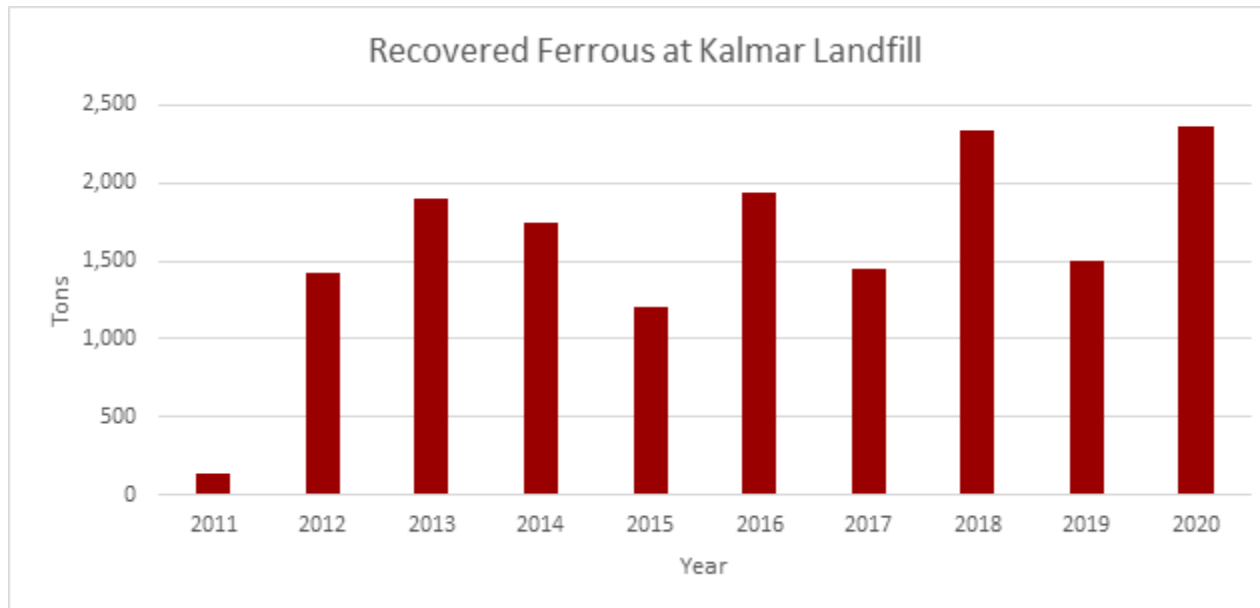
The ash generated from the OWEF since 2016 is approximately 30,000 tons per year, with approximately 500 to 700 tons from Mayo. Historically, coal combustion ash from the Rochester Public Utilities (RPU) Silver Lake Power Plant was deposited at Kalmar. However, the RPU plant was converted to natural gas and ceased coal combustion in 2013. Ash tonnages are generally proportional to the

OWEF throughput. With the OWEF throughput near capacity, overall ash tonnage will be more consistent making waste disposal projections easier to manage.

To extend the life of the ash disposal area, the County began recovery of ferrous metals within the combustion ash in 2011. Figure A-28 shows the annual ferrous recovered, at nearly 2,000 tons per year, on average. In addition to

conserving disposal capacity, this effort has generated over \$3M in revenue since it began.

**Figure A-28 – Ferrous recovered**



In October 2021, the County received approval to beneficially reuse the OWEF ash for road construction. Beneficially using the ash as a supplement for ash-amended aggregate will further increase waste diversion, conserve disposal capacity, and extend the life of the ash disposal area. A test road is scheduled to be constructed in September 2022.

### Construction & Demolition Debris Detail

The amount of demolition debris generated annually is estimated to be between 15,000 in 2022 to 23,2670 in 2031 as shown in the Goal Volume Table.

The C & D disposal area at the Kalmar Landfill is an unlined, Class I demolition landfill that currently consists of two disposal cells, Cells 1C and 2C. It is allowed to accept



only wastes listed on the MPCA Acceptable C & D Waste List. Cell 2C is divided into three phases. Each phase of Cell 2C represents an incremental development of Cell 2C. Cell 1C and a portion of Cell 2C, Phase 1 are capped. Cell 2C, Phase 3 was approved by the MPCA for expansion in February 2022 and is planned for development in 2022.

The C & D wastes generated within Olmsted County are not subject to waste designation requirements. This allows C & D wastes to be managed by private companies, recycled, and hauled to waste disposal facilities outside of Olmsted or landfilled at Kalmar. On average, Since 2013, Kalmar Landfill receives an average of less than 50% of total C & D wastes generated in Olmsted County.

In general, overall generation rates have remained flat, but the portion disposed at Kalmar is trending up. The increased disposal at Kalmar is stressing the capacity of the C&D disposal area. By the end of 2021, the current disposal area is nearly at capacity; however, in early 2022 Kalmar received approval for volume increase that will provide approximately five years of additional capacity. The MPCA began a C&D landfill rule change process in 2020. The rule change is not currently in effect, but the County anticipates draft rules available in near the end of 2022. The proposed C&D landfill rules will be evaluated, which may result in changes to C&D landfill operations at Kalmar. Future C&D landfill development beyond Cell 2C, Phase 3 will be determined based on the rule changes.

The County has taken steps to mitigate disposal of C&D. In 2021, a County owned building was partially deconstructed to reduce the amount of C&D waste disposed at the landfill. This project helped promote waste diversion, conserve disposal capacity, extend the life of the C&D disposal area and yield a foundational template for future county owned projects to be deconstructed.

Olmsted County will continue to operate and monitor the need for additional disposal capacity for C&D waste and evaluate its role in the management of this type of waste over the next 10 years. New rules from the MPCA requiring liner systems be installed in new C&D cells will impact this decision. Potential alternatives include:

1. Dispose of demolition material in the permitted MSW cell or
2. Not accept construction and demolition material and let private C & D processing facilities handle the material.

### Landfill Operations

Landfill staff are responsible for the successful operation of the Landfill. The critical work for the staff includes: screening incoming wastes, directing customers to the

proper disposal location, processing ash for metals recovery, and proper working face management, among a variety of other tasks. All industrial waste received during a specific period is buried together and its location surveyed. The location is then documented so that materials could be located if found to cause problems at a future time.

### Hours of Operation

The current hours of operation are 8:30 a.m. to 3:30 p.m., Monday through Friday. The landfill is not open Saturday, but the OWEF facility and the OCRC are open.

### Waste Placement

Density of the relative waste types is a measure of equipment and labor efficiency. This is an important tool as increased compaction can increase site life at no capital expense. The analysis of compaction rates for the three disposal areas can be found below in Figure A-29.

Figure A-29 – Compaction Figures

Waste Type	2018 Density (lb/cy)	2019 Density (lb/cy)	2020 Density (lb/cy)	Industry Average (lb/cy)
MSW	N/A <sup>1</sup>	1,233	1,090	1,200-1,400
Ash	2,353	2,989	2,807	1,890-2,160
C&D	2,773	2,749	4,312	1,000-1,200

<sup>1</sup> Due to changes in the volume calculations for 2018, the calculated density value would be unrealistically low, at approximately 160 lb/cy..

The MSW densities are variable due to the way it is managed between the Kalmar Landfill and the OWEF. The ash density has consistently been on the high side of the industry averages. Bypass and non-processible wastes may be stored at Kalmar and later hauled to the OWEF to supplement waste fuel needs throughout the year. The timing of this activity can influence how the waste volumes and densities are calculated. Generally, the compaction rates for MSW are in-line with industry standards. Densities for the C&D waste are significantly higher than industry average. This is likely due to the disposal fee being by

volume; therefore, a lot of heavier and more dense C & D waste was being deposited at Kalmar.

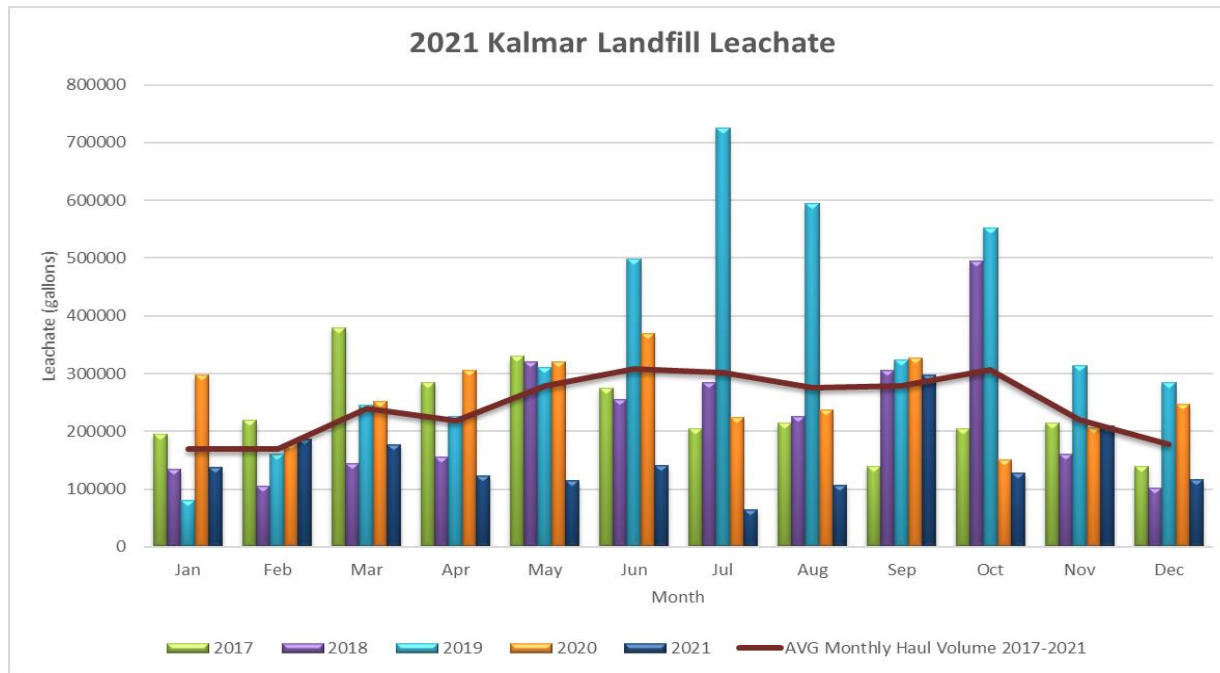
### Leachate Handling

The Landfill is also responsible for managing leachate generation. Leachate is generated from moisture contained within waste as it is disposed and any precipitation that percolates through the waste mass. Leachate is collected from both the MSW and ash disposal areas separately and are combined in an underground storage tank where it is hauled to the Rochester Water Reclamation Plant.

Historically, leachate was also collected from the C&D disposal area; however, no leachate was collected in 2021.

Figure A-30 below presents the average monthly leachate generation volumes from 2017 through 2021.

**Figure A-30 Leachate Collection 2017 – 2021**



Olmsted County is currently (2021) contracted with Agland Excavating, Inc., for leachate hauling. The current contract price is \$0.0294 per gallon. Superior Jetting currently performs leachate pipe cleaning on an annual basis. The ash and MSW leachate are tested three times per year as required through the Kalmar Landfill MPCA Permit. Leachate from the demolition disposal area and from the leachate tank (combined ash and MSW leachate) are tested

two times per year as required by the City of Rochester Water Reclamation Facility industrial wastewater permit.

The volume of leachate handled varies from about 1.8M gallons to 4.3M gallons per year, depending upon the amount of open area in each cell and annual precipitation rates. Over the next 10 years, the County may explore alternative leachate management methods. This may include a direct connection to the City of Rochester's

sanitary sewer system or leachate recirculation to eliminate the need to haul leachate and subsequently reduce greenhouse gas emissions.

There is no onsite treatment of leachate. All leachate is hauled by a contracted hauler to the Rochester Water Reclamation Plant (RWRP) for treatment. As of this date, there have been no problems or exceedances of any influent limits at the RWRP. The County also has a contingency permit with the Metropolitan Council Environmental Services Department for discharge of leachate that has never been utilized.

### Traffic Control

The site is well managed through the scale operations, which directs the waste vehicles to the proper disposal site. In addition, the site has adequate signage, which assists the truck drivers. The paved roads help keep the site neat and clean; therefore, wet weather dumping is not a significant problem.

### Scale Operation

All MSW trucks coming to the site weigh-in and weigh-out on a certified scale. There does not seem to be a queuing problem, even during the highest traffic days (bypass from OWEF). Truck drivers only need to enter the building when they leave.

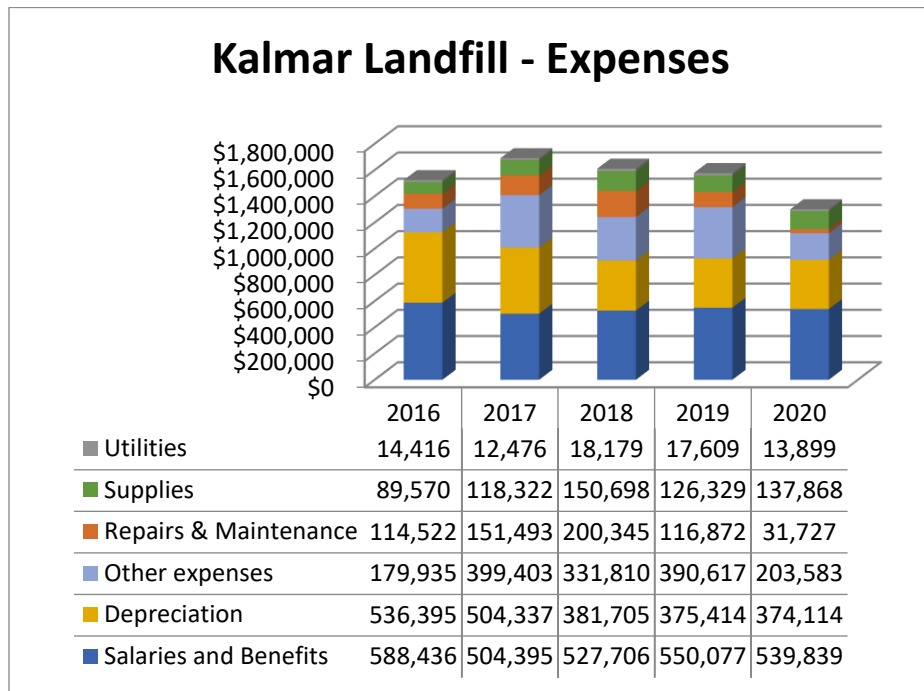
The biggest challenge is when the scale goes down. Olmsted County then calls Fairbanks Scale for repairs. When this happens, the trucks must first weigh in at the OWEF before coming to the landfill and then return to the OWEF scale to weigh out. The state weights and measures the scale twice per year to check for accuracy.

The scale operators handle the money and receipts. Payment is usually by check or on account, so very little cash is handled. All transactions are recorded electronically, and all customers are provided with a receipt.

### Landfill Expenses

Figure A-31 below represents the Kalmar Landfill unit's expenses under the accrual basis of accounting as reported for the annual financial report. Capital purchases are excluded from expenses as these are capitalized on the balance sheet of the Solid Waste Fund and depreciated over the estimated useful lives of the assets.

Figure A-31



## Compliance and Permitting

Kalmar operates the three disposal areas through the Solid Waste Permit SW-355 issued by the MPCA. The requirements of the permit are presented in Figure A-23. The Landfill and Regulatory Compliance staff have developed several plans and protocols that aid in maintaining compliance with the permit. Within these plans, the Landfill and Regulatory Compliance staff are

responsible for the monitoring of groundwater, surface water, leachate, and methane gas migration.

The permit also requires financial assurance for the closure and long-term closure care of the landfill. Olmsted County has established a Dedicated Long-Term Care Trust Fund for the financial assurance of closure, post-closure care, and corrective action of the Kalmar Landfill. The fund balance as of December 31, 2021 was \$5,009,811.

## Phase Development – Certificate of Need

The 2020 permit renewal included an Environmental Assessment Worksheet (EAW) because of the proposed ash disposal area expansion. Minnesota rules require an EAW any time there is an expansion or major modification to a waste combustor ash mono-fill. The 2020 renewal did not include any other changes to the MSW or C&D disposal areas.

Over the period of this 10-year plan, county and regional waste generation rates are expected to increase overall. The OWEF will continue to be the primary method of management with any non-burnable wastes being directed to Kalmar for disposal. As the generations rates increase in Olmsted and Dodge Counties, the OWEF capacity will be evaluated. If the capacity is exceeded, the OWEF would reduce the incoming out-of-county wastes to minimize any residual landfill disposal of combustible MSW.

The ash disposal rate has been relatively consistent over the last 5 years. Ash generation is primarily a function of the quantity of waste put through the OWEF, and with the OWEF operating at or near capacity. The ash generation rate is anticipated to change with the operation of the MRF. Additionally, the ash disposal rate is expected to decrease with the beneficial reuse of the ash for road construction.

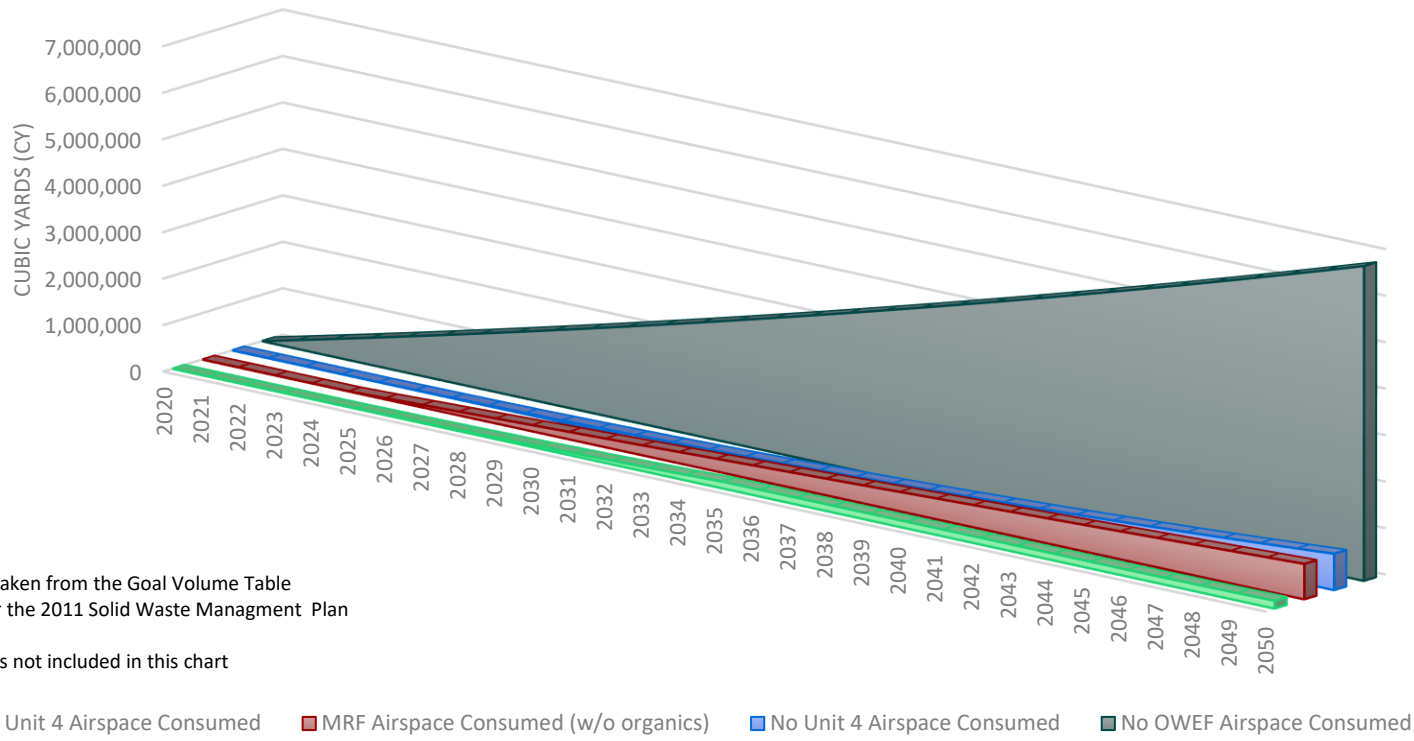
The net amount of MSW deposited in the MSW disposal area and OWEF ash generation will depend on the total throughput entering the MRF/OWEF facilities. The anticipated development of the ash disposal area and the MSW disposal area are influenced by the beneficial ash utilization rate, MRF operation, and organics diversion, among other factors. Due to these variables, the development timing is more difficult to project. For a

conservative development scenario, current operations were used to present cell development in Figure A-32.

Olmsted County continues to invest in assets that will further achieve the department goals of sustainability and waste diversion. The largest proposed investment within the period of this plan is the MRF. Planned to begin operation in 2025, the MRF has the potential to divert up to 8% of the waste stream from disposal or combustion. The MRF will generate a stream of residual fines (inerts and organic waste) from the incoming MSW stream. This residual waste stream may be further processed to remove organics or may be deposited in the MSW disposal area at Landfill. Figure A-32 shows the Kalmar impact if 75% of the organics were diverted from disposal. Figure A-32 also presents landfill space consumption if the OWEF did not exist, and if the status quo operation remains.

12/31/21

Figure A-32 Cumulative MSW Landfill Space Required



**Notes:**

- Projections taken from the Goal Volume Table produced for the 2011 Solid Waste Management Plan Update
- Yard Waste is not included in this chart

**Notes:** -Projections taken from the waste projections for Olmsted County and surrounding region



### Operations Review

The Kalmar Landfill is currently managed by the Landfill Supervisor. The staff consists of four equipment operators, one scale operator, and miscellaneous part-time or seasonal help who fill in for staff due to vacations or peak work periods.

### Program Development and Updates

Extending the life of the Kalmar Landfill and increasing resource recovery are two primary goals for this plan. Over the past ten years (2011 through 2020), there have been two successful projects that have helped the County work towards meeting the goals of this plan: 1) mining waste from the MSW bypass area, and; 2) metal recovery from the OWEF ash. Since 2011, Kalmar has increased its total bypass landfill waste landfilled by approximately 887 tons, and since 2011, Kalmar has recovered approximately 18,000 tons of ferrous metals from the OWEF ash.

Over the next 10 years, the County is planning to further extend the life of the Kalmar Landfill by implementing additional waste diversion programs that include:

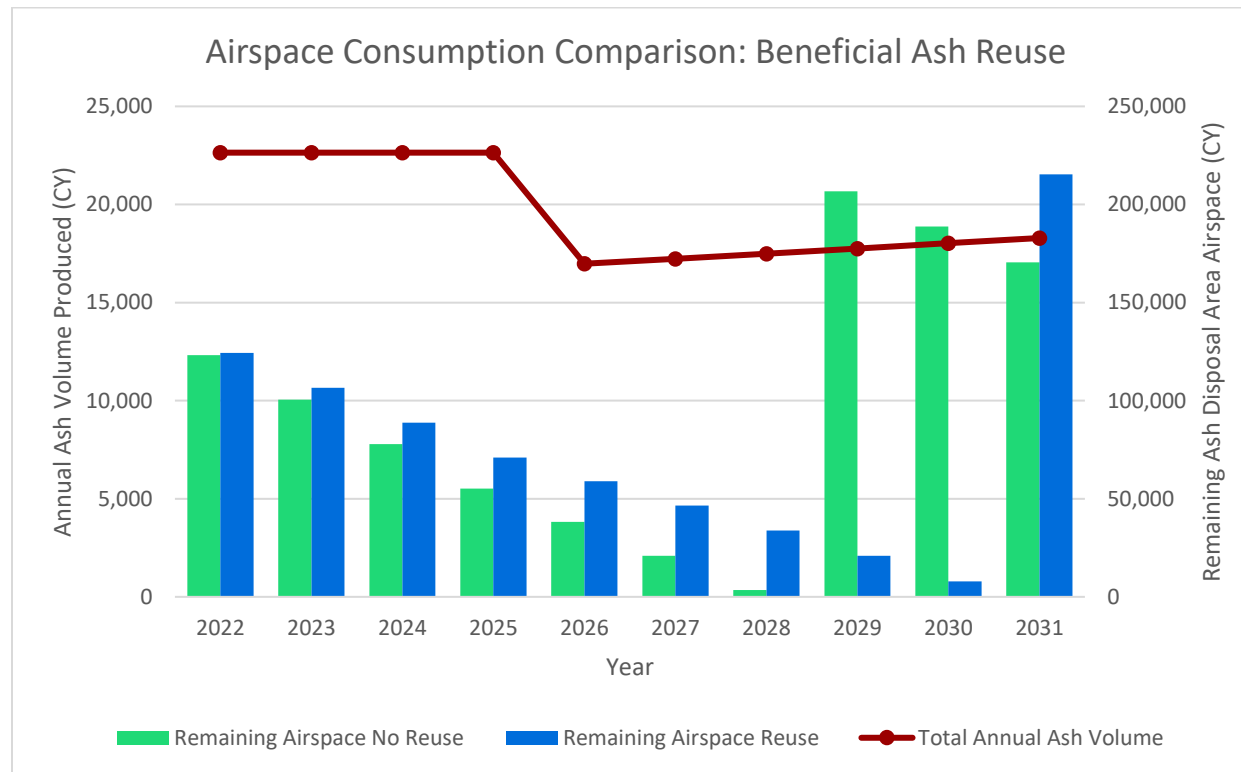
- Beneficial Reuse of OWEF waste combustor ash
- Non-ferrous metal recovery from the Ash disposal area

- Construction and Demolition waste diversion
- Materials Recovery Facility

### Beneficial Ash Reuse

In 2021 the County received MPCA Case-Specific Beneficial Use Determination (CSBUD) approval to beneficially reuse the OWF waste combustor ash as a supplement to road base aggregate. This project will include screening the ash and mixing with a combination of crushed concrete and virgin aggregate material to create a Minnesota Department of Transportation (MNDOT) class 5 aggregate product. This ash-amended class 5 may be used as a base course below asphalt pavement. The CSBUD limits the supplement ash to 20% by weight to the finished class 5 product. While there are some technical aspects that are to be worked out regarding production of the material, this project has the potential to reduce annual disposal volumes by over 20%. In combination with the MRF, the life of the ash disposal can be greatly extended with this project. Figure A-33 presents a comparison of the consumption of the Ash disposal area life expectancy with and without the beneficial ash reuse. Over the course of the next 10 years, Cell 7A life expectancy could be extended by 2 years.

Figure A-33: Airspace Consumption Comparison: Beneficial Ash Reuse



**Notes:**

1. Ash use is 20% of the ash-amended class 5 blend
2. Assumes thickness of the base course is 12-inches
3. Assumes 4-miles of 2-lane roadway beginning in year 2023 (approximately 4,900 total cy)
4. Assumes MRF is constructed and operational in 2025/2026
5. Cell 7A adds 221,020 cy to remaining capacity for in year 2029 (no reuse) and 2031 (beneficial reuse).

### Non-Ferrous Metal Recovery

As previously presented, the County has recovered over 18,000 tons of ferrous metal from disposal within the waste combustor ash. The waste combustor ash also contains various non-ferrous metals, including copper, stainless steel and various precious metals (e.g., gold, silver, etc.). Recovering these metals requires specialized equipment. The County has engaged various companies about recovery of these precious metals. It is believed that Olmsted County presents a feasible opportunity to mine portions of the ash disposal area to recover these metals. Specific details are not available at this time, but it is believed that doing so will add revenue to the County and recapture available ash disposal area airspace, thus extended the life of the landfill.

### Construction & Demolition (C&D) Waste Diversion

In 2021, Olmsted County Environmental Resources teamed with the Olmsted County Building Department for a demolition waste diversion project. The project resulted in diversion of 7.6 tons of material that may have otherwise been deposited in a landfill. The remaining capacity of the C&D landfill is very limited and conserving this space is paramount. In combination with potential C&D landfill rule changes, Olmsted County has taken initiative to begin incorporating waste diversion plans with future County owned demolition, construction, or remodeling projects. These efforts will keep materials out of the landfill, give a second life to many deconstructed materials, and create a

foundational template for future deconstruction. Olmsted County Environmental Resources will continue to support efforts by the County's Facilities, Operations, and Buildings Department to improve and enhance their efforts on waste diversion for their projects.

### Olmsted County Materials Recovery Facility

The MRF has the potential to substantially affect landfill life expectancies for both the ash disposal area and the MSW disposal area. Figure A-32 above represents the impact to the MSW disposal area with the MRF operational. Initially, the MSW disposal area may see an increase in disposal due to the inert and organic fine residuals from the MRF. The inert material would typically end up in the ash disposal area. However, the MRF can segregate organic wastes opening the opportunity for organics diversion. With organics diversion, long-term, the MRF would extend the life of the MSW disposal area.

The MRF will also result in reduced ash disposal rates. As presented in Figure A-32 above, the MRF will reduce ash disposal volumes by at least 25%. This will extend the life of the ash disposal area considerable. The MRF will also extract ferrous and non-ferrous metals prior to reaching the OWEF, reducing overall costs and wear and tear on the equipment at the Kalmar Landfill.

The MRF cost is estimated at \$25 million. Constructing and operating the MRF will ultimately extend the life of the

## Technical Plan

Kalmar Landfill and provide additional time to enhance other waste diversion programs that will further improve overall waste management within Olmsted County. Without the MRF, the planning process to expand the OWEF will need to begin within the 10-year period of this Plan. The permitting process to add another combustion unit to the OWEF can take up to 5 years and at current disposal rates, an expansion could be necessary by 2035. Increased air regulations, equipment costs, operation costs, and capital costs will far exceed the investment made for the MRF.

### MRF PERMITTING Requirements:

The impacts of the MRF development and operation are not limited to financial considerations or system-wide operational considerations, but also impact the regulatory requirements that exist for the OWEF and will be required for the MRF. The existing permits for the OWEF (listed below) will be reviewed and updated as necessary with the addition of the MRF. Additionally, the MRF will consider the need for a Recycling Facility Permit-by-Rule (MN Administrative Rules 7001.3050 and 7035.2845) and necessary building and construction-related permits.

- OWEF Air Permit (10900005-004)
- OWEF Solid Waste Permit (integral with air permit: SW-636)
- Industrial Stormwater Discharge Permit (MNR053B5Q)
- Industrial Wastewater Permit (3N-26)
- Hazardous Waste (MND980901805)

### Staffing Details

Olmsted County seeks to ensure an inclusive workforce environment to retain staff, support staff learning and development through awareness and educational opportunities. Five department staff report directly to the Director of Environmental Resources. Each Manager/Supervisor has the responsibility for their facilities and/or programs. The department organization chart is shown on the following page.

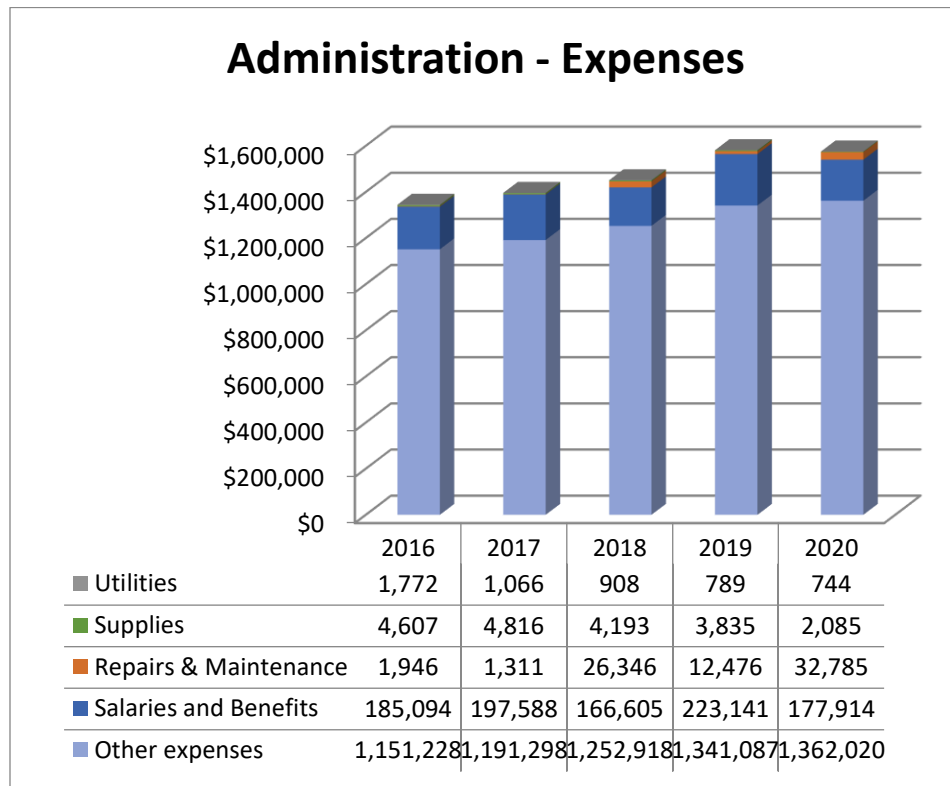
Support is provided to the department by the Olmsted County Finance Department, the Information Technology Solutions Department, the support services staff, risk management group and Policy Analysis and Communications (PAC) team.

Staffing expenses are identified in each Facility/Program section of this document. Figure A-34 represents the Administration unit's expenses under the accrual basis of accounting as reported for the annual financial report. Revenues are presented on a system-wide basis as they contribute to the entire integrated solid waste management system. Other expenses include consultants and professional charges and charges from other funds such as services from finance, county attorney, purchasing, information technology, administration, etc.

The Finance Department staff oversee and enforce the hauler license and registration requirements.

The county allocates staff time each year (about 1,040 hours) to enforcement. The Olmsted County Planning Department coordinates enforcement activity and works with the City of Rochester and other jurisdictions as needed for solid waste violations located within residential properties.

Figure A-34

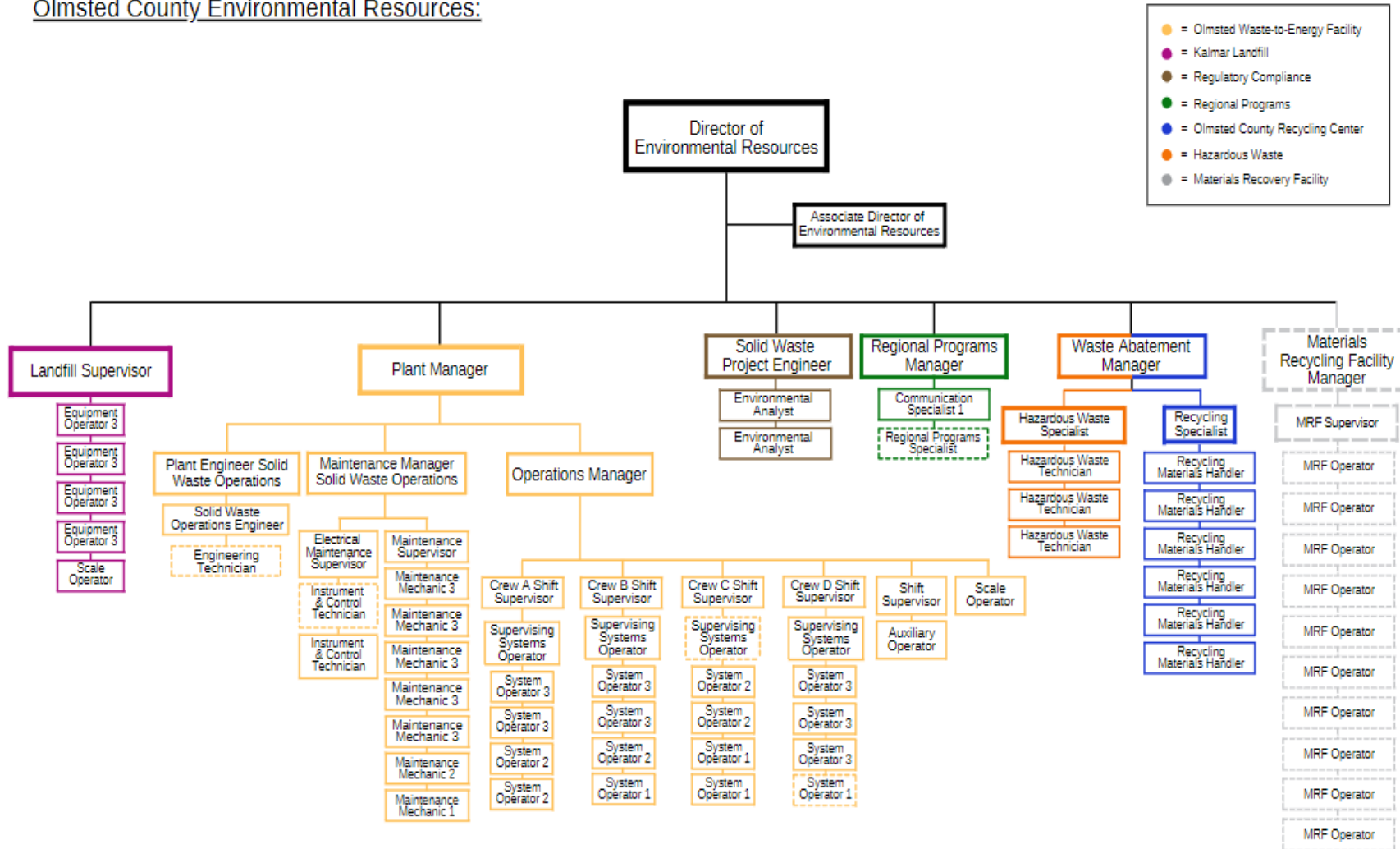


Staffing is expected to stay relatively stable over the next ten years. As the Materials Recovery Facility comes on-line, additional staff will be added as needed. It is expected that the MRF will require an additional 12 FTE employees when it is fully operational.

# Technical Plan

Figure A-35

Olmsted County Environmental Resources:



### Plan Development Details

This Plan was developed with input from the Olmsted County Board, Environmental Commission and various community stakeholders.

### Participation

A Recycling Task Force met to get input on educational outreach from December 2020 through August 2021. The Task Force had representation from various locations, groups and businesses including:

- licensed haulers
- City of Rochester staff
- Transition Rochester staff
- Township residents
- City of Rochester residents
- Mayo Clinic recycling program staff
- Local businesses
- Sierra Club
- Rochester for Justice
- SE MN Youth Enrichment League

Meetings were held with various groups regarding interest and options related to development of a Materials Recovery Facility (MRF) including:

- SEMREX Counties and Fillmore County staff

On July 28, 2022 at 7:00 p.m. County staff presented information on the Solid Waste Management Plan to the Township Officers Association at their regular meeting. Comments from the group focused on the following subjects:

- Concern was expressed about illegal ditch dumping, and



- Congestion at the OCRC and need for a larger facility

An open house was hosted at the OWEF on July 30, 2022 from 10:00 a.m. to 2:00 p.m. This open house allowed the general public to tour the OWEF and learn about the solid waste management programs and plans for the future. One hundred and twenty-one people attended.

On August 17, 2022 at 5:30 p.m. County staff presented information to the RNeighbors Executive Board, to provide information and receive comments on the Solid Waste Management Plan and discuss opportunities to work together toward mutually beneficial goals.

On August 17, 2022 at 7:15 p.m. County staff presented the Solid Waste Management Plan to the Environmental Commission and received comments.

### Public Surveys:

- An online public survey of 601 residents was conducted to get feedback on customer service and service options
- An-person survey of 898 facility customers was conducted to get feedback on customer service and service options

### Continued Public Involvement

Olmsted County has an Environmental Commission appointed by the Olmsted County Board of Commissioners. The commission is responsible for formulating and recommending environmental policies and monitoring program implementation to assure coordination and integration of County functions that impact the environment. Functions of the Environmental Commission include developing and recommending environmental policies and priorities to the County Board as well as reviewing, updating, and recommending final approval of environmental plans. The Commission has various representatives from the community including the Olmsted County Board, city and township residents, and students. They review ordinances, monitor the implementation of plans, policies, programs, and grants, and conduct public hearings/meetings as needed to solicit citizen input on environmental issues, programs, and projects. This Board meets the third Wednesday of every month at 7:15 PM.

## Technical Plan

Documentation regarding public participation in the development of this Plan is available at the Environmental Resources Department at 2122 Campus Drive SE, in Rochester, Minnesota.

### Alternatives to Proposed System

Various scenarios were analyzed to determine the development of the current integrated system to meet the mission of Olmsted County Environmental Resources, and the rules of the State Minnesota. Olmsted County has made a considerable investment in the current system to be able to process more waste and reduce the amount of waste going to a landfill. If Olmsted County is unable to implement the strategies laid out in this plan, it would operate the current system as is until the resources are available to make the improvements.

If the current facilities for some unforeseen reason become inoperable and the County is unable to receive acceptable waste at either the OWEF or Kalmar Landfill, the waste would go to either Timberline Trail Recycling and Disposal Facility in Rusk County, Wisconsin, or Seven Mile Creek Landfill in Eau Claire County, Wisconsin or other permitted solid waste management facility agreed upon between the County and the private landfill operator.

# APPENDIX A - Goal Volume Table



520 Lafayette Road North  
St. Paul, MN 55155-4194

## County goal volume table template for solid waste planning

**Instructions: Please read "Overview and Instructions" tab prior to completing this form.** Only fill out the **yellow-highlighted fields**. Please email this completed form to your MPCA Solid Waste Planner.

If you have any questions please see the Contact information tab below for contact information.

### Solid Waste

Year

Mangement Method	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Recycling	64,394	64,969	65,536	66,094	66,644	67,184	67,714	68,230	68,737	69,229
Organics	4,562	4,602	4,643	4,682	4,721	4,759	4,797	4,833	4,869	4,904
Combined Recycling Rate	41%	41%	41%	41%	41%	41%	41%	41%	41%	41%
Waste-to-Energy (minus recyclables and nonprocessibles)	96,255	97,115	97,962	98,796	99,617	100,425	101,217	101,989	102,746	103,482
Olmsted Waste-to-Energy Facility	96,255	97,115	97,962	98,796	99,617	100,425	101,217	101,989	102,746	103,482
Landfill	1,687	1,701	1,717	1,731	1,746	1,760	1,773	1,788	1,801	1,813
Olmsted County Kalmar Landfill - SW-355	1,687	1,701	1,717	1,731	1,746	1,760	1,773	1,788	1,801	1,813
Capacity Used	1,776	1,791	1,807	1,822	1,838	1,852	1,867	1,882	1,895	1,908
On-site Disposal	1,362	1,374	1,386	1,397	1,409	1,421	1,432	1,443	1,453	1,464
<b>Total MSW Generated</b>	<b>168,259</b>	<b>169,762</b>	<b>171,243</b>	<b>172,701</b>	<b>174,137</b>	<b>175,549</b>	<b>176,932</b>	<b>178,283</b>	<b>179,606</b>	<b>180,891</b>





## County goal volume table template for solid waste planning

**Waste-to-Energy**

 Select facility and enter **amount in tons** of material sent to the facility for each year

		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Olmsted Waste-to-Energy Facility	Tons of MMSW Managed at Facility	96,255	97,115	97,962	98,796	99,617	100,425	101,217	101,989	102,746	103,482
	Tons of Recycling removed										
	Tons of Non-processibles										
	Tons of MMSW Managed at Facility										
	Tons of Recycling removed										
	Tons of Non-processibles										
	Tons of MMSW Managed at Facility										
	Tons of Recycling removed										
	Tons of Non-processibles										

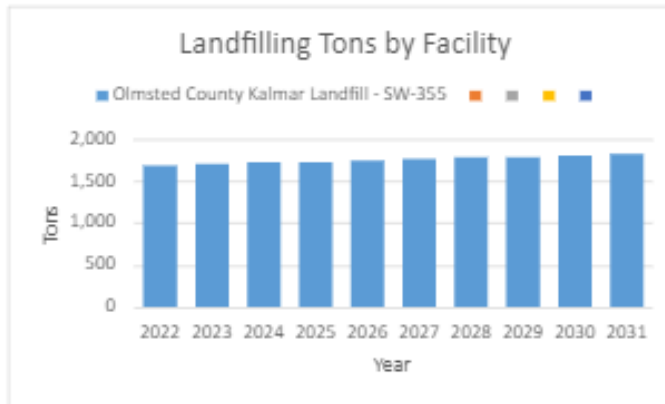
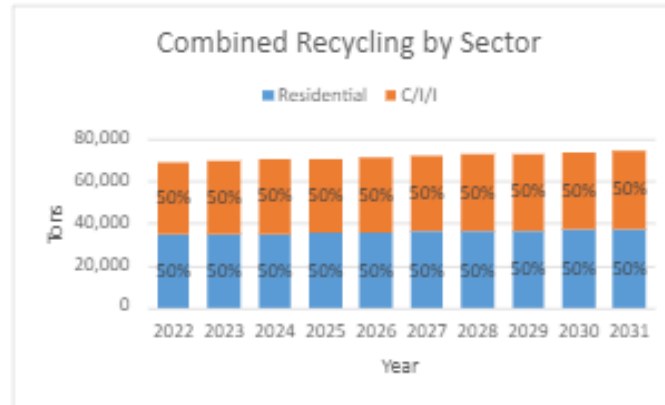
NOTE: Bulky, "Non-processible" items removed at the OWEF, are shredded at the Kalmar Landfill then back-hauled to the OWEF for processing. Anything else that was non-processible is buried at the Kalmar Landfill. The Kalmar Landfill numbers show the total buried. The material back-hauled to the OWEF for processing is included in the OWEF total. What is pulled out, processed and back-hauled to the OWEF is not tracked. Any recyclable materials that are pulled out (appliances, large metal pieces) are not tracked separately, but would be included in recycling numbers elsewhere.



# County goal volume table template for solid waste planning

## Summary of Goal Volume Table for Olmsted County

Solid Waste Planner: Ben Crowell



**Total land disposal capacity needed for waste generated in county**

Waste Type	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
MSW	1,776	1,791	1,807	1,822	1,838	1,852	1,867	1,882	1,895	1,908	18,437
Industrial	2,915	3,060	3,213	3,374	3,542	3,719	3,905	4,101	4,306	4,522	36,657
Construction & Demolition	20,000	21,000	22,050	23,153	24,310	25,526	26,802	28,142	29,549	31,027	251,558
<b>Total Capacity</b>	<b>24,690</b>	<b>25,851</b>	<b>27,070</b>	<b>28,348</b>	<b>29,690</b>	<b>31,097</b>	<b>32,574</b>	<b>34,125</b>	<b>35,751</b>	<b>37,457</b>	<b>306,652</b>

The total land disposal capacity needed from the period of 2022 to 2031 is 306,652 cubic yards

# APPENDIX B - Budget

## Financial Assumptions:

- No changes to current tipping rates
- Material Recovery Facility (MRF) is approved, constructed, and operational by 2025. \$10M State Grant, \$22.5M debt funded at 4.5%
- A significant portion of Olmsted/Dodge single-stream recycling is secured for MRF operations
- New Residential Self-Haul Disposal Facility (transfer station) built in 2028 (\$10M) debt funded
- No changes due to Districting/Organized collection
- Capital outlay and funding based on 2023 draft 5-year Capital Improvement Plan plan with estimates the last 5 years.
- Projection doesn't include new full time equivalent employees other than for MRF operations, although some requests for new FTEs will be considered within the next 5 years
- 1% annual Olmsted/Dodge MSW waste increase
- Additional out-of-County waste needed once MRF is operational
- 2% increase in user-based revenues per year
- Current high rates natural gas prices will be 25% less in 2023 compared to 2022.
- 5% annual wages and benefit increase based on historical trends
- 4% annual inflationary increases to expenses per year
- No other significant changes to current operations
- Projections based on 2022 Budgeted operating expenses inflated (2023 budget #s not yet available)
- 4% increase in hauler-based receipt income and service charge tipping fee revenue
- Capital related expenses were estimated based on project needs.
- MRF construction and operating costs were based on information provided by consultants and internal estimates and calculated at a 1.5% inflation rate; estimated commodity rates were based on a 1% increase per year;

# APPENDIX B - Budget

## Additional Funding Sources for Specific Programs:

- Annual Minnesota Pollution Control Agency (MPCA) Household Hazardous Waste Agreement (not inflated for revenue projections)
- Paint Care for advertising and disposal – based on current receipts (not inflated for revenue projections)
- Waste Pesticide from the Minnesota Department of Agriculture for disposal costs (not inflated for revenue projections)
- SCORE annual money, SCORE funding was based on current receipts (not inflated for revenue projections)
- Capital Assistance Program (CAP) money was received previously for the Unit 3 expansion and air pollution control equipment upgrades.
- CAP money was requested in 2022 for MRF funding -and will be requested in the future as projects qualify.

The Environmental Resources Department operates as an enterprise fund providing solid waste management services and education programs to residents and businesses. No tax levy is used to fund these programs. Revenue primarily comes from tipping fees (and other user fees), energy sales, and recyclable material sales. Based on 2021 Annual Comprehensive Financial Report numbers, expenses equal \$146/person or approximately \$363/household annually.

# Budget Appendix: 10 Year Waste Management Projection

## WASTE MANAGEMENT FUND

10 YEAR PROJECTION

REVENUES	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Tipping Fees	\$ 22,024,615	\$ 22,467,938	\$ 23,509,029	\$ 24,543,205	\$ 25,602,393	\$ 26,469,659	\$ 27,362,130	\$ 28,160,187	\$ 28,980,864	\$ 29,699,144
Utility Fees	4,058,260	3,939,425	4,018,214	4,098,578	4,180,550	4,264,161	4,349,444	4,436,433	4,525,161	4,615,664
Landfill Fees	204,000	208,080	212,242	100,000	102,000	104,040	106,121	108,243	110,408	112,616
Recycling	1,071,000	1,092,420	3,032,286	3,388,657	3,764,270	3,871,393	3,976,376	4,075,311	4,176,023	4,237,982
Other	294,974	298,335	301,764	305,262	308,829	312,468	316,180	319,965	323,827	327,766
Bond Proceeds	7,050,000	16,250,000	-	-	1,620,000	10,000,000	-	-	-	-
Intergovernmental Grants	513,000	513,000	513,000	513,000	513,000	513,000	513,000	513,000	513,000	513,000
Gifts and contributions	22,950	23,409	23,877	24,355	24,842	25,339	25,845	26,362	26,890	27,427
Investment Income	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Intergovernmental Grants-Capital	10,000,000	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ 45,438,799</b>	<b>\$ 44,992,608</b>	<b>\$ 31,810,411</b>	<b>\$ 33,173,056</b>	<b>\$ 36,315,884</b>	<b>\$ 45,760,059</b>	<b>\$ 36,849,095</b>	<b>\$ 37,839,502</b>	<b>\$ 38,856,173</b>	<b>\$ 39,733,601</b>

EXPENSES	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Personal Services	\$ 8,513,604	\$ 8,939,284	\$ 10,536,248	\$ 11,063,060	\$ 11,616,214	\$ 12,197,024	\$ 12,806,875	\$ 13,447,219	\$ 14,119,580	\$ 14,825,559
Consultants and professional services	251,274	261,325	293,778	305,530	317,751	330,461	343,679	357,426	371,723	386,592
Repairs and Maintenance	3,060,322	3,357,833	3,430,207	3,035,615	2,836,519	3,427,060	3,272,883	3,515,638	3,948,483	4,064,583
Other Services and Charges	3,603,377	3,744,916	4,992,906	5,436,015	5,887,323	6,083,305	6,308,374	6,536,823	6,767,106	7,019,336
Supplies	2,186,884	2,274,359	2,469,569	2,560,482	2,662,901	2,769,417	2,880,194	2,995,402	3,115,218	3,239,827
Utilities	586,792	610,264	945,674	983,501	1,022,841	1,063,755	1,106,305	1,150,557	1,196,579	1,244,443
Capital Items	22,285,955	18,932,325	2,213,325	4,400,325	2,220,325	12,389,211	2,678,949	2,626,480	1,937,296	3,341,605
Debt Principal Payments	6,996,357	6,974,425	7,203,599	7,334,311	7,523,270	3,048,353	3,165,879	2,165,994	2,238,813	2,069,460
Interest Expense	1,053,073	1,601,978	1,461,458	1,352,560	1,301,156	1,647,011	1,551,035	1,460,958	1,382,920	1,301,749
<b>TOTAL EXPENSES</b>	<b>\$ 48,537,639</b>	<b>\$ 46,696,710</b>	<b>\$ 33,546,764</b>	<b>\$ 36,471,399</b>	<b>\$ 35,388,299</b>	<b>\$ 42,955,598</b>	<b>\$ 34,114,174</b>	<b>\$ 34,256,497</b>	<b>\$ 35,077,720</b>	<b>\$ 37,493,153</b>

<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ (3,098,840)</b>	<b>\$ (1,704,102)</b>	<b>\$ (1,736,353)</b>	<b>\$ (3,298,342)</b>	<b>\$ 927,585</b>	<b>\$ 2,804,462</b>	<b>\$ 2,734,921</b>	<b>\$ 3,583,004</b>	<b>\$ 3,778,453</b>	<b>\$ 2,240,447</b>
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### TIPPING FEE REQUIREMENT/TON CALCULATION

TOTAL EXPENSES	\$ 48,537,639	\$ 46,696,710	\$ 33,546,764	\$ 36,471,399	\$ 35,388,299	\$ 42,955,598	\$ 34,114,174	\$ 34,256,497	\$ 35,077,720	\$ 37,493,153
Less amounts funded by Bond proceeds/capital grants	(17,050,000)	(16,250,000)	-	-	(1,620,000)	(10,000,000)	-	-	-	-
Less Funded Revenue (excluding tipping fees)	(6,364,184)	(6,274,670)	(8,301,382)	(8,629,852)	(9,093,491)	(9,290,400)	(9,486,965)	(9,679,315)	(9,875,308)	(10,034,456)
Less MRF tipping fee revenue	-	-	(580,500)	(883,811)	(1,196,091)	(1,214,033)	(1,244,566)	(1,275,866)	(1,307,954)	(1,340,849)
Less Tip fee revenue from Dodge and Out of System	(2,052,011)	(1,974,757)	(1,896,731)	(2,070,244)	(2,240,347)	(2,492,660)	(2,736,602)	(2,863,568)	(2,989,728)	(2,989,171)
<b>NET OLMSTED TIPPING FEE REQUIREMENT</b>	<b>\$ 23,071,444</b>	<b>\$ 22,197,283</b>	<b>\$ 22,768,151</b>	<b>\$ 24,887,491</b>	<b>\$ 21,238,370</b>	<b>\$ 19,958,505</b>	<b>\$ 20,646,041</b>	<b>\$ 20,437,749</b>	<b>\$ 20,904,728</b>	<b>\$ 23,128,676</b>
NET OLMSTED TIPPING FEE REQUIREMENT/OLMSTED TON	\$ 232	\$ 221	\$ 225	\$ 243	\$ 206	\$ 191	\$ 196	\$ 192	\$ 194	\$ 213
PROJECTIONED OLMSTED TIPPING FEE/OLMSTED TON	\$ 201	\$ 204	\$ 208	\$ 211	\$ 215	\$ 218	\$ 222	\$ 226	\$ 230	\$ 234
EXCESS (DEFICIT) \$/ OLMSTED TON	\$ (31)	\$ (17)	\$ (17)	\$ (32)	\$ 9	\$ 27	\$ 26	\$ 34	\$ 35	\$ 21

<b>MRF SINGLE STEAM RECYCLING TONS PROJECTION</b>	-	-	6,000	9,000	12,000	12,000	12,120	12,241	12,364	12,487
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### MMSW/ISW UNITS OF SERVICE

OLMSTED	99,283	100,276	101,279	102,291	103,314	104,347	105,391	106,445	107,509	108,584
DODGE	10,100	10,201	10,303	10,406	10,510	10,615	10,721	10,829	10,937	11,046
OTHER OUT OF SYSTEM-CURRENT SYSTEM	8,417	7,323	6,218	5,103	3,976	2,837	1,688	527	-	-
OTHER OUT OF SYSTEM-DUE TO MRF ADDITION	-	-	-	2,200	5,200	9,200	12,200	14,700	16,554	15,369
<b>TOTAL TONS PROJECTION</b>	<b>117,800</b>	<b>117,800</b>	<b>117,800</b>	<b>120,000</b>	<b>123,000</b>	<b>127,000</b>	<b>130,000</b>	<b>132,500</b>	<b>135,000</b>	<b>135,000</b>

**RESOURCE RECOVERY PLANT**

10 YEAR PROJECTION

<b>REVENUES</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>
Tipping Fees	\$ 9,143,522	\$ 9,129,347	\$ 9,114,579	\$ 9,349,070	\$ 9,582,718	\$ 9,898,706	\$ 10,203,786	\$ 10,394,600	\$ 10,582,797	\$ 10,639,891
Utility Fees	4,058,260	3,939,425	4,018,214	4,098,578	4,180,550	4,264,161	4,349,444	4,436,433	4,525,161	4,615,664
Landfill Fees	-	-	-	-	-	-	-	-	-	-
Recycling	-	-	-	-	-	-	-	-	-	-
Other	11,852	12,089	12,331	12,578	12,829	13,086	13,348	13,615	13,887	14,165
Bond Proceeds	800,000	-	-	-	1,620,000	-	-	-	-	-
Intergovernmental Grants	-	-	-	-	-	-	-	-	-	-
Gifts and contributions	-	-	-	-	-	-	-	-	-	-
Investment Income	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants-Capital	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ 14,013,635</b>	<b>\$ 13,080,861</b>	<b>\$ 13,145,124</b>	<b>\$ 13,460,226</b>	<b>\$ 15,396,097</b>	<b>\$ 14,175,953</b>	<b>\$ 14,566,578</b>	<b>\$ 14,844,648</b>	<b>\$ 15,121,845</b>	<b>\$ 15,269,720</b>
<b>EXPENSES</b>										
Personal Services	\$ 5,829,865	\$ 6,121,358	\$ 6,427,426	\$ 6,748,797	\$ 7,086,237	\$ 7,440,549	\$ 7,812,576	\$ 8,203,205	\$ 8,613,365	\$ 9,044,033
Consultants and professional services	81,470	84,729	88,118	91,643	95,309	99,121	103,086	107,210	111,498	115,958
Repairs and Maintenance	2,846,463	3,135,420	2,900,896	2,485,132	2,264,017	2,831,658	2,653,664	2,871,651	3,278,737	3,368,047
Other Services and Charges	1,782,957	1,854,276	1,793,447	1,865,184	1,939,792	2,017,384	2,098,079	2,182,002	2,269,282	2,360,053
Supplies	1,933,228	2,010,557	2,032,214	2,105,633	2,189,859	2,277,453	2,368,551	2,463,293	2,561,825	2,664,298
Utilities	414,984	431,583	448,847	466,800	485,472	504,891	525,087	546,091	567,934	590,652
Capital Items	4,925,955	1,790,325	1,160,325	960,325	2,220,325	1,500,000	1,560,000	1,622,400	1,687,296	1,754,788
Debt Principal Payments	6,637,750	6,241,075	6,437,248	6,533,474	6,686,395	1,855,058	1,918,885	862,885	877,065	646,433
Interest Expense	546,823	605,615	498,096	423,683	408,317	341,832	299,554	265,592	246,193	226,301
<b>TOTAL EXPENSES</b>	<b>\$ 24,999,496</b>	<b>\$ 22,274,937</b>	<b>\$ 21,786,617</b>	<b>\$ 21,680,673</b>	<b>\$ 23,375,723</b>	<b>\$ 18,867,946</b>	<b>\$ 19,339,483</b>	<b>\$ 19,124,329</b>	<b>\$ 20,213,196</b>	<b>\$ 20,770,563</b>
<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ (10,985,861)</b>	<b>\$ (9,194,076)</b>	<b>\$ (8,641,493)</b>	<b>\$ (8,220,448)</b>	<b>\$ (7,979,626)</b>	<b>\$ (4,691,993)</b>	<b>\$ (4,772,906)</b>	<b>\$ (4,279,681)</b>	<b>\$ (5,091,351)</b>	<b>\$ (5,500,843)</b>

**MATERIALS RECOVERY FACILITY**

## 10 YEAR PROJECTION

REVENUES	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Tipping Fees	\$ -	\$ -	\$ 580,500	\$ 883,811	\$ 1,196,091	\$ 1,214,033	\$ 1,244,566	\$ 1,275,866	\$ 1,307,954	\$ 1,340,849
Utility Fees	-	-	-	-	-	-	-	-	-	-
Landfill Fees	-	-	-	-	-	-	-	-	-	-
Recycling	-	-	2,348,017	2,690,704	3,052,358	3,145,242	3,235,702	3,319,823	3,405,425	3,451,973
Other	-	-	-	-	-	-	-	-	-	-
Bond Proceeds	6,250,000	16,250,000	-	-	-	-	-	-	-	-
Intergovernmental Grants	-	-	-	-	-	-	-	-	-	-
Gifts and contributions	-	-	-	-	-	-	-	-	-	-
Investment Income	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants-Capital	10,000,000	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ 16,250,000</b>	<b>\$ 16,250,000</b>	<b>\$ 2,928,517</b>	<b>\$ 3,574,515</b>	<b>\$ 4,248,449</b>	<b>\$ 4,359,274</b>	<b>\$ 4,480,267</b>	<b>\$ 4,595,690</b>	<b>\$ 4,713,380</b>	<b>\$ 4,792,822</b>
<b>EXPENSES</b>										
Personal Services	\$ -	\$ -	\$ 1,150,000	\$ 1,207,500	\$ 1,267,875	\$ 1,331,269	\$ 1,397,832	\$ 1,467,724	\$ 1,541,110	\$ 1,618,165
Consultants and professional services	-	-	22,000	22,880	23,795	24,747	25,737	26,766	27,837	28,950
Repairs and Maintenance	-	-	298,000	309,920	322,317	335,209	348,618	362,563	377,065	392,148
Other Services and Charges	-	-	1,313,561	1,607,860	1,908,638	1,953,832	2,011,115	2,070,269	2,131,362	2,194,462
Supplies	-	-	163,000	169,520	176,301	183,353	190,687	198,314	206,247	214,497
Utilities	-	-	311,000	323,440	336,378	349,833	363,826	378,379	393,514	409,255
Capital Items	16,250,000	16,250,000	-	-	-	200,000	200,000	200,000	200,000	200,000
Debt Principal Payments	358,607	733,351	766,351	800,837	836,875	874,534	913,888	955,013	997,989	1,042,898
Interest Expense	506,250	996,363	963,362	928,876	892,838	855,179	815,825	774,700	731,724	686,815
<b>TOTAL EXPENSES</b>	<b>\$ 17,114,857</b>	<b>\$ 17,979,713</b>	<b>\$ 4,987,274</b>	<b>\$ 5,370,833</b>	<b>\$ 5,765,017</b>	<b>\$ 6,107,956</b>	<b>\$ 6,267,528</b>	<b>\$ 6,433,729</b>	<b>\$ 6,606,849</b>	<b>\$ 6,787,191</b>
<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ (864,857)</b>	<b>\$ (1,729,713)</b>	<b>\$ (2,058,757)</b>	<b>\$ (1,796,319)</b>	<b>\$ (1,516,568)</b>	<b>\$ (1,748,682)</b>	<b>\$ (1,787,261)</b>	<b>\$ (1,838,039)</b>	<b>\$ (1,893,469)</b>	<b>\$ (1,994,369)</b>

**KALMAR LANDFILL****10 YEAR PROJECTION**

<b>REVENUES</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>
Tipping Fees	\$ 772,743	\$ 788,297	\$ 804,457	\$ 823,693	\$ 841,162	\$ 859,313	\$ 880,818	\$ 900,440	\$ 922,709	\$ 950,205
Utility Fees	-	-	-	-	-	-	-	-	-	-
Landfill Fees	204,000	208,080	212,242	100,000	102,000	104,040	106,121	108,243	110,408	112,616
Recycling	510,000	520,200	100,604	102,616	104,668	106,762	108,897	111,075	113,296	115,562
Other	21,591	22,023	22,464	22,913	23,371	23,839	24,315	24,802	25,298	25,804
Bond Proceeds	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants	-	-	-	-	-	-	-	-	-	-
Gifts and contributions	-	-	-	-	-	-	-	-	-	-
Investment Income	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants-Capital	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ 1,508,334</b>	<b>\$ 1,538,600</b>	<b>\$ 1,139,766</b>	<b>\$ 1,049,222</b>	<b>\$ 1,071,202</b>	<b>\$ 1,093,953</b>	<b>\$ 1,120,151</b>	<b>\$ 1,144,560</b>	<b>\$ 1,171,711</b>	<b>\$ 1,204,188</b>
<b>EXPENSES</b>										
Personal Services	\$ 576,555	\$ 605,383	\$ 635,652	\$ 667,434	\$ 700,806	\$ 735,847	\$ 772,639	\$ 811,271	\$ 851,834	\$ 894,426
Consultants and professional services	10,304	10,716	11,145	11,591	12,054	12,536	13,038	13,559	14,102	14,666
Repairs and Maintenance	97,240	101,130	105,175	109,382	113,757	118,307	123,040	127,961	133,080	138,403
Other Services and Charges	310,222	322,630	262,536	273,037	283,959	295,317	307,130	319,415	332,191	345,479
Supplies	170,872	177,707	184,815	192,208	199,896	207,892	216,208	224,856	233,850	243,204
Utilities	13,000	13,520	14,061	14,623	15,208	15,816	16,449	17,107	17,791	18,503
Capital Items	810,000	12,000	1,008,000	3,440,000	-	689,211	918,949	804,080	-	1,386,817
Debt Principal Payments	-	-	-	-	-	-	-	-	-	-
Interest Expense	-	-	-	-	-	-	-	-	-	-
<b>TOTAL EXPENSES</b>	<b>\$ 1,988,193</b>	<b>\$ 1,243,086</b>	<b>\$ 2,221,383</b>	<b>\$ 4,708,275</b>	<b>\$ 1,325,680</b>	<b>\$ 2,074,927</b>	<b>\$ 2,367,452</b>	<b>\$ 2,318,249</b>	<b>\$ 1,582,849</b>	<b>\$ 3,041,498</b>
<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ (479,858)</b>	<b>\$ 295,514</b>	<b>\$ (1,081,617)</b>	<b>\$ (3,659,053)</b>	<b>\$ (254,478)</b>	<b>\$ (980,973)</b>	<b>\$ (1,247,300)</b>	<b>\$ (1,173,689)</b>	<b>\$ (411,137)</b>	<b>\$ (1,837,310)</b>

**RECYCLING SERVICES**

## 10 YEAR PROJECTION

REVENUES	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Tipping Fees	\$ 1,227,150	\$ 1,239,422	\$ 1,251,816	\$ 1,264,334	\$ 1,276,977	\$ 1,289,747	\$ 1,302,644	\$ 1,315,671	\$ 1,328,828	\$ 1,342,116
Utility Fees	-	-	-	-	-	-	-	-	-	-
Landfill Fees	-	-	-	-	-	-	-	-	-	-
Recycling	561,000	572,220	583,664	595,338	607,244	619,389	631,777	644,413	657,301	670,447
Other	19,890	19,890	19,890	19,890	19,890	19,890	19,890	19,890	19,890	19,890
Bond Proceeds	-	-	-	-	-	10,000,000	-	-	-	-
Intergovernmental Grants	-	-	-	-	-	-	-	-	-	-
Gifts and contributions	-	-	-	-	-	-	-	-	-	-
Investment Income	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants-Capital	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ 1,808,040</b>	<b>\$ 1,831,532</b>	<b>\$ 1,855,370</b>	<b>\$ 1,879,562</b>	<b>\$ 1,904,112</b>	<b>\$ 11,929,026</b>	<b>\$ 1,954,312</b>	<b>\$ 1,979,974</b>	<b>\$ 2,006,019</b>	<b>\$ 2,032,453</b>
<b>EXPENSES</b>										
Personal Services	\$ 779,030	\$ 817,981	\$ 858,880	\$ 901,824	\$ 946,915	\$ 994,261	\$ 1,043,974	\$ 1,096,173	\$ 1,150,982	\$ 1,208,531
Consultants and professional services	2,080	2,163	2,250	2,340	2,433	2,531	2,632	2,737	2,847	2,960
Repairs and Maintenance	65,520	68,141	70,866	73,701	76,649	79,715	82,904	86,220	89,669	93,255
Other Services and Charges	494,275	514,046	534,607	555,992	578,231	601,361	625,415	650,432	676,449	703,507
Supplies	33,696	35,044	36,446	37,903	39,420	40,996	42,636	44,342	46,115	47,960
Utilities	35,568	36,991	38,470	40,009	41,610	43,274	45,005	46,805	48,677	50,624
Capital Items	50,000	80,000	45,000	-	-	10,000,000	-	-	50,000	-
Debt Principal Payments	-	-	-	-	-	318,761	333,106	348,095	363,760	380,129
Interest Expense	-	-	-	-	-	450,000	435,656	420,666	405,002	388,632
<b>TOTAL EXPENSES</b>	<b>\$ 1,460,168</b>	<b>\$ 1,554,365</b>	<b>\$ 1,586,520</b>	<b>\$ 1,611,769</b>	<b>\$ 1,685,258</b>	<b>\$ 12,530,899</b>	<b>\$ 2,611,327</b>	<b>\$ 2,695,470</b>	<b>\$ 2,833,500</b>	<b>\$ 2,875,599</b>
<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ 347,872</b>	<b>\$ 277,166</b>	<b>\$ 268,850</b>	<b>\$ 267,792</b>	<b>\$ 218,853</b>	<b>\$ (601,873)</b>	<b>\$ (657,016)</b>	<b>\$ (715,496)</b>	<b>\$ (827,481)</b>	<b>\$ (843,146)</b>



**REGIONAL PROGRAMS**

## 10 YEAR PROJECTION

<b>REVENUES</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>
Tipping Fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Fees	-	-	-	-	-	-	-	-	-	-
Landfill Fees	-	-	-	-	-	-	-	-	-	-
Recycling	-	-	-	-	-	-	-	-	-	-
Other	54,060	55,141	56,244	57,369	58,516	59,687	60,880	62,098	63,340	64,607
Bond Proceeds	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants	-	-	-	-	-	-	-	-	-	-
Gifts and contributions	-	-	-	-	-	-	-	-	-	-
Investment Income	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants-Capital	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ 54,060</b>	<b>\$ 55,141</b>	<b>\$ 56,244</b>	<b>\$ 57,369</b>	<b>\$ 58,516</b>	<b>\$ 59,687</b>	<b>\$ 60,880</b>	<b>\$ 62,098</b>	<b>\$ 63,340</b>	<b>\$ 64,607</b>
<b>EXPENSES</b>										
Personal Services	\$ 262,120	\$ 275,226	\$ 288,987	\$ 303,437	\$ 318,608	\$ 334,539	\$ 351,266	\$ 368,829	\$ 387,270	\$ 406,634
Consultants and professional services	-	-	-	-	-	-	-	-	-	-
Repairs and Maintenance	-	-	-	-	-	-	-	-	-	-
Other Services and Charges	97,147	101,033	105,075	109,278	113,649	118,195	122,923	127,839	132,953	138,271
Supplies	3,432	3,569	3,712	3,861	4,015	4,176	4,343	4,516	4,697	4,885
Utilities	-	-	-	-	-	-	-	-	-	-
Capital Items	-	-	-	-	-	-	-	-	-	-
Debt Principal Payments	-	-	-	-	-	-	-	-	-	-
Interest Expense	-	-	-	-	-	-	-	-	-	-
<b>TOTAL EXPENSES</b>	<b>\$ 362,699</b>	<b>\$ 379,829</b>	<b>\$ 397,774</b>	<b>\$ 416,575</b>	<b>\$ 436,272</b>	<b>\$ 456,909</b>	<b>\$ 478,531</b>	<b>\$ 501,185</b>	<b>\$ 524,920</b>	<b>\$ 549,790</b>
<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ (308,639)</b>	<b>\$ (324,687)</b>	<b>\$ (341,530)</b>	<b>\$ (359,206)</b>	<b>\$ (377,756)</b>	<b>\$ (397,222)</b>	<b>\$ (417,650)</b>	<b>\$ (439,087)</b>	<b>\$ (461,580)</b>	<b>\$ (485,183)</b>

**HAZARDOUS WASTE**

## 10 YEAR PROJECTION

<b>REVENUES</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>
Tipping Fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Fees	-	-	-	-	-	-	-	-	-	-
Landfill Fees	-	-	-	-	-	-	-	-	-	-
Recycling	-	-	-	-	-	-	-	-	-	-
Other	168,200	169,424	170,672	171,946	173,245	174,570	175,921	177,300	178,706	180,140
Bond Proceeds	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000	53,000
Gifts and contributions	2,550	2,601	2,653	2,706	2,760	2,815	2,872	2,929	2,988	3,047
Investment Income	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants-Capital	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ 223,750</b>	<b>\$ 225,025</b>	<b>\$ 226,326</b>	<b>\$ 227,652</b>	<b>\$ 229,005</b>	<b>\$ 230,385</b>	<b>\$ 231,793</b>	<b>\$ 233,229</b>	<b>\$ 234,693</b>	<b>\$ 236,187</b>
<b>EXPENSES</b>										
Personal Services	\$ 413,399	\$ 434,069	\$ 455,772	\$ 478,561	\$ 502,489	\$ 527,613	\$ 553,994	\$ 581,693	\$ 610,778	\$ 641,317
Consultants and professional services	4,160	4,326	4,499	4,679	4,867	5,061	5,264	5,474	5,693	5,921
Repairs and Maintenance	28,288	29,420	30,596	31,820	33,093	34,417	35,793	37,225	38,714	40,263
Other Services and Charges	61,359	63,813	66,366	69,020	71,781	74,653	77,639	80,744	83,974	87,333
Supplies	12,792	13,304	13,836	14,389	14,965	15,563	16,186	16,833	17,507	18,207
Utilities	119,600	124,384	129,359	134,534	139,915	145,512	151,332	157,385	163,681	170,228
Capital Items	-	-	-	-	-	-	-	-	-	-
Debt Principal Payments	-	-	-	-	-	-	-	-	-	-
Interest Expense	-	-	-	-	-	-	-	-	-	-
<b>TOTAL EXPENSES</b>	<b>\$ 639,598</b>	<b>\$ 669,316</b>	<b>\$ 700,429</b>	<b>\$ 733,004</b>	<b>\$ 767,109</b>	<b>\$ 802,819</b>	<b>\$ 840,208</b>	<b>\$ 879,356</b>	<b>\$ 920,347</b>	<b>\$ 963,269</b>
<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ (415,848)</b>	<b>\$ (444,291)</b>	<b>\$ (474,103)</b>	<b>\$ (505,352)</b>	<b>\$ (538,104)</b>	<b>\$ (572,434)</b>	<b>\$ (608,415)</b>	<b>\$ (646,127)</b>	<b>\$ (685,654)</b>	<b>\$ (727,081)</b>

**COMPOSTING**

## 10 YEAR PROJECTION

<b>REVENUES</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>
Tipping Fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Fees	-	-	-	-	-	-	-	-	-	-
Landfill Fees	-	-	-	-	-	-	-	-	-	-
Recycling	-	-	-	-	-	-	-	-	-	-
Other	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951	12,190
Bond Proceeds	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants	-	-	-	-	-	-	-	-	-	-
Gifts and contributions	20,400	20,808	21,224	21,649	22,082	22,523	22,974	23,433	23,902	24,380
Investment Income	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants-Capital	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ 30,600</b>	<b>\$ 31,212</b>	<b>\$ 31,836</b>	<b>\$ 32,473</b>	<b>\$ 33,122</b>	<b>\$ 33,785</b>	<b>\$ 34,461</b>	<b>\$ 35,150</b>	<b>\$ 35,853</b>	<b>\$ 36,570</b>
<b>EXPENSES</b>										
Personal Services	\$ 111,694	\$ 117,278	\$ 123,142	\$ 129,299	\$ 135,764	\$ 142,553	\$ 149,680	\$ 157,164	\$ 165,023	\$ 173,274
Consultants and professional services	1,040	1,082	1,125	1,170	1,217	1,265	1,316	1,369	1,423	1,480
Repairs and Maintenance	20,800	21,632	22,497	23,397	24,333	25,306	26,319	27,371	28,466	29,605
Other Services and Charges	9,421	9,798	10,190	10,598	11,022	11,463	11,921	12,398	12,894	13,410
Supplies	25,168	26,175	27,222	28,311	29,443	30,621	31,846	33,119	34,444	35,822
Utilities	3,640	3,786	3,937	4,095	4,258	4,429	4,606	4,790	4,982	5,181
Capital Items	250,000	800,000	-	-	-	-	-	-	-	-
Debt Principal Payments	-	-	-	-	-	-	-	-	-	-
Interest Expense	-	-	-	-	-	-	-	-	-	-
<b>TOTAL EXPENSES</b>	<b>\$ 421,763</b>	<b>\$ 979,751</b>	<b>\$ 188,113</b>	<b>\$ 196,869</b>	<b>\$ 206,037</b>	<b>\$ 215,636</b>	<b>\$ 225,687</b>	<b>\$ 236,212</b>	<b>\$ 247,232</b>	<b>\$ 258,771</b>
<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ (391,163)</b>	<b>\$ (948,539)</b>	<b>\$ (156,277)</b>	<b>\$ (164,396)</b>	<b>\$ (172,915)</b>	<b>\$ (181,851)</b>	<b>\$ (191,227)</b>	<b>\$ (201,062)</b>	<b>\$ (211,379)</b>	<b>\$ (222,201)</b>

**SOLID WASTE ADMINISTRATION**

10 YEAR PROJECTION

<b>REVENUES</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>
Tipping Fees	\$ 10,881,200	\$ 11,310,873	\$ 11,757,677	\$ 12,222,297	\$ 12,705,444	\$ 13,207,860	\$ 13,730,315	\$ 14,273,610	\$ 14,838,577	\$ 15,426,083
Utility Fees	-	-	-	-	-	-	-	-	-	-
Landfill Fees	-	-	-	-	-	-	-	-	-	-
Recycling	-	-	-	-	-	-	-	-	-	-
Other	9,180	9,364	9,551	9,742	9,937	10,135	10,338	10,545	10,756	10,971
Bond Proceeds	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants	460,000	460,000	460,000	460,000	460,000	460,000	460,000	460,000	460,000	460,000
Gifts and contributions	-	-	-	-	-	-	-	-	-	-
Investment Income	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Intergovernmental Grants-Capital	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ 11,550,380</b>	<b>\$ 11,980,236</b>	<b>\$ 12,427,228</b>	<b>\$ 12,892,038</b>	<b>\$ 13,375,381</b>	<b>\$ 13,877,996</b>	<b>\$ 14,400,653</b>	<b>\$ 14,944,155</b>	<b>\$ 15,509,333</b>	<b>\$ 16,097,054</b>
<b>EXPENSES</b>										
Personal Services	\$ 171,022	\$ 179,573	\$ 188,552	\$ 197,979	\$ 207,878	\$ 218,272	\$ 229,186	\$ 240,645	\$ 252,677	\$ 265,311
Consultants and professional services	10,000	10,400	10,816	11,249	11,699	12,167	12,653	13,159	13,686	14,233
Repairs and Maintenance	2,011	2,092	2,175	2,263	2,353	2,447	2,545	2,647	2,753	2,863
Other Services and Charges	798,015	827,339	857,837	889,554	922,541	956,846	992,524	1,029,629	1,068,218	1,108,351
Supplies	5,200	5,408	5,624	5,849	6,083	6,327	6,580	6,843	7,117	7,401
Utilities	-	-	-	-	-	-	-	-	-	-
Capital Items	-	-	-	-	-	-	-	-	-	-
Debt Principal Payments	-	-	-	-	-	-	-	-	-	-
Interest Expense	-	-	-	-	-	-	-	-	-	-
<b>TOTAL EXPENSES</b>	<b>\$ 986,248</b>	<b>\$ 1,024,812</b>	<b>\$ 1,065,004</b>	<b>\$ 1,106,894</b>	<b>\$ 1,150,554</b>	<b>\$ 1,196,059</b>	<b>\$ 1,243,488</b>	<b>\$ 1,292,923</b>	<b>\$ 1,344,450</b>	<b>\$ 1,398,159</b>
<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ 10,564,132</b>	<b>\$ 10,955,424</b>	<b>\$ 11,362,223</b>	<b>\$ 11,785,144</b>	<b>\$ 12,224,827</b>	<b>\$ 12,681,937</b>	<b>\$ 13,157,166</b>	<b>\$ 13,651,232</b>	<b>\$ 14,164,882</b>	<b>\$ 14,698,895</b>

**REGULATORY COMPLIANCE**

10 YEAR PROJECTION

<b>REVENUES</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>	<b>2031</b>	<b>2032</b>
Tipping Fees	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Fees	-	-	-	-	-	-	-	-	-	-
Landfill Fees	-	-	-	-	-	-	-	-	-	-
Recycling	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-
Bond Proceeds	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants	-	-	-	-	-	-	-	-	-	-
Gifts and contributions	-	-	-	-	-	-	-	-	-	-
Investment Income	-	-	-	-	-	-	-	-	-	-
Intergovernmental Grants-Capital	-	-	-	-	-	-	-	-	-	-
<b>TOTAL REVENUES</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>EXPENSES</b>										
Personal Services	\$ 369,920	\$ 388,416	\$ 407,837	\$ 428,229	\$ 449,640	\$ 472,122	\$ 495,729	\$ 520,515	\$ 546,541	\$ 573,868
Consultants and professional services	142,220	147,909	153,825	159,978	166,377	173,032	179,954	187,152	194,638	202,423
Repairs and Maintenance	-	-	-	-	-	-	-	-	-	-
Other Services and Charges	49,981	51,981	49,288	55,491	57,711	54,256	61,630	64,095	59,783	68,470
Supplies	2,496	2,596	2,700	2,808	2,920	3,037	3,158	3,285	3,416	3,553
Utilities	-	-	-	-	-	-	-	-	-	-
Capital Items	-	-	-	-	-	-	-	-	-	-
Debt Principal Payments	-	-	-	-	-	-	-	-	-	-
Interest Expense	-	-	-	-	-	-	-	-	-	-
<b>TOTAL EXPENSES</b>	<b>\$ 564,618</b>	<b>\$ 590,902</b>	<b>\$ 613,649</b>	<b>\$ 646,506</b>	<b>\$ 676,649</b>	<b>\$ 702,448</b>	<b>\$ 740,470</b>	<b>\$ 775,046</b>	<b>\$ 804,377</b>	<b>\$ 848,314</b>
<b>NET REVENUES OVER (UNDER) EXPENSES (CASH BASIS)</b>	<b>\$ (564,618)</b>	<b>\$ (590,902)</b>	<b>\$ (613,649)</b>	<b>\$ (646,506)</b>	<b>\$ (676,649)</b>	<b>\$ (702,448)</b>	<b>\$ (740,470)</b>	<b>\$ (775,046)</b>	<b>\$ (804,377)</b>	<b>\$ (848,314)</b>

# APPENDIX C - Ordinances

[Chapter 3500 - Solid Waste Management Ordinance](#)

[Chapter 3550 - Solid Waste Designation Ordinance](#)

[Chapter 4000 - Enforcement and Appeals Ordinance](#)