



MATERIALS MANAGEMENT INFRASTRUCTURE AND PROGRAMS PROJECT: Project Report

The “Mega Data” Project

Final – February 2023

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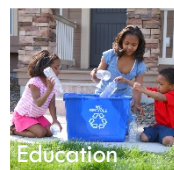
EXECUTIVE SUMMARY

Michigan Department of Environment, Great Lakes, and Energy (EGLE) initiated a data collection project to document and inventory the current state of materials management systems in all municipalities within Michigan's 83 counties. The primary objective of the Michigan Materials Management Infrastructure and Program project, also known as Mega Data, is to provide the baseline of data necessary for counties to develop future materials management plans and to provide the information necessary to create a roadmap for materials management moving forward.

EGLE contracted with Resource Recycling Systems (RRS) to support this large undertaking to gather, compile and review information from across the state. RRS endeavored to collect as much information as possible from all identified stakeholders, all while navigating the pandemic. Despite the challenges the pandemic produced, EGLE now has a solid base of program and infrastructure information, some of which has never been collected before by the state.

The data included in this report reflects what was collected, but does not include every municipality, county, facility, and hauler in the state despite multiple attempts and tactics to obtain information. Once the report is available to stakeholders, it is anticipated that more information will become available and enhance what has already been collected during the Mega Data project.

The report is organized into five categories: Access, Infrastructure, Program Data, Education, and Policy. These sections present the status of materials management infrastructure and programs in Michigan representing thousands of pieces of data obtained over several years.



Access

With over 1900 municipalities across the state and over 2200 including Census Designated Places (CDPs), RRS spent a significant amount of time collecting information identifying services provided at the local level, how those services are provided, and overall access to those services. RRS focused on single-family residential curbside and drop-off collection services for trash, recycling, and organics (primarily yard waste, but included additional organics if service was available). From the information obtained, 60% of the state's population, representing roughly 20% of communities, has access to curbside recycling.

Infrastructure

Materials management infrastructure is comprised of facilities to handle materials and the haulers that provide collection and transport of the materials. Michigan boasts 36 Sorting Facilities, 313 Transfer Station Type A, 243 Organic Facilities, and 663 Drop-off facilities. RRS focused on facilities with the least amount of documentation by EGLE, specifically drop-off facilities. These types of facilities make up a large component of the materials management infrastructure in the state, likely due to most communities in the state not offering coordinated

curbside collection through municipal or contracted haulers. Drop-off facilities identified across the state collect trash (218), traditional recycling (359), organics (223), non-traditional recyclables (262), household hazardous waste (196), and construction and demolition materials (103).

Program Data

Actual data about materials recovered in programs across the state was difficult to obtain despite the project being nicknamed “Mega Data”. The information exists in Michigan but tracking and reporting of data is not common at the municipal or county level except in certain circumstances. Information is readily available from public sector programs and facilities, compared to programs and facilities owned or operated by the private sector. The report includes detailed data where available.

Education

Education is now being recognized as an essential part of materials management systems at state and national levels, but most public recycling programs in Michigan tend to have inadequate staff time, budgets, and knowledge to provide the education needed for their customers to use their systems correctly and fully. Many are doing their best with the resources available to them but given the desire of the state to increase the diversion of materials, education, and outreach are areas that would benefit from additional resources and support. The most reported promotional materials include newsletters, flyers, pamphlets, brochures, and utility bill inserts. Social media is another common tactic to spread information about programs and services.

Policy

Policy refers to regulatory and funding frameworks such as ordinances and public acts. Most municipal ordinances are straight forward and address collection and storage of waste, illegal dumping, and payment or fee method to pay for services. More comprehensive municipal ordinances identify recycling as a required service, or a required activity for a community. County ordinances address funding, data collection, disposal fees (such as volume-based pricing) and use of designated facilities. Both tools – ordinances and funding mechanisms – can be powerful tools to establish and maintain programs and services. Most community programs are funded by a millage or utility service fee. County programs are most commonly funded by a landfill/facility surcharge or a voter approved millage.

Conclusion

The Mega Data project captures a moment in time in Michigan’s material management infrastructure and program information. The project provides a solid foundation of data for EGLE to build upon and maintain, as it can go out of date as quickly as it is obtained. The data collected will also assist EGLE’s stakeholders in the state such as designated planning agencies responsible for materials management planning and communities where state grant dollars may be able to enhance programs, services, and infrastructure. Data can and should be improved upon with increased participation and cooperation from both public and private sectors.

TABLE OF CONTENTS

Executive Summary	2
Table of Contents	4
List of Tables	4
List of Figures	4
Project Overview.....	5
Methodology.....	7
Access	9
Infrastructure	14
Program Data.....	17
Education.....	22
Policy	27
Appendix A.....	33
Appendix B.....	38

LIST OF TABLES

Table 1. Mega Data Target Audiences.....	7
Table 2. Data Sources for Mega Data Project.....	8
Table 3. Overview of Municipal and Contracted Curbside Collection.....	11
Table 4. Drop-off Facility Providers and Commonly Accepted Materials.....	12
Table 5. Drop-off Access Summary.....	13
Table 6. Facility Type by Region in Michigan.....	15
Table 7. Drop-off Facility Type Summary	16
Table 8. Data Reported by Municipalities through eMMP in 2020.....	19
Table 9. Counties with Program Data Collected by CRMP - 2020.....	21
Table 10. Reported Education/Outreach Tactics	24
Table 11. Municipal Funding Approaches for Trash.....	29
Table 12. County Initiated Funding Mechanisms	30
Table 13. Commercial Recycling Services Summary Table.....	33

LIST OF FIGURES

Figure 1. Example Map of Facility Type by Material for Region 1 - SEMCOG.....	14
Figure 2. Recycling Guidelines Example	23

PROJECT OVERVIEW

Michigan Department of Environment, Great Lakes, and Energy (EGLE) has shifted their focus from disposal as the primary effort towards a circular economy where all waste materials find their highest and best use. Michigan took its first steps towards materials management by securing funding to support an economy that reuses and recycles resources. An important component of that funding is dedicated to Solid Waste Management Planning – also referred to as Materials Management Planning. Materials management plans form the foundation of the changes the state is preparing to make.

To support this new era of materials management and future planning activities, EGLE initiated a massive data collection project to document and inventory the current state of materials management systems in all municipalities within Michigan's 83 counties. The primary objective of the Michigan Materials Management Infrastructure and Program project, also known as Mega Data, is to provide the baseline of data necessary for counties to develop future materials management plans and to provide the information necessary to create a roadmap for materials management moving forward. The data collected through the project would also be applied to the Benchmark Recycling Standard analysis developed by EGLE to help understand access to recycling services in the state, where gaps exist, and where EGLE may focus their support to improve access and infrastructure in the state.

EGLE contracted with Resource Recycling Systems (RRS) to support this large undertaking to gather, compile and review information from across the state. RRS envisioned data collection with stakeholder engagement to provide data and a report about materials management infrastructure and programs in Michigan, and a well-informed and engaged audience of municipalities, counties, haulers, and facilities. The project was initiated in Fall 2019 with an initial 18-month timeline.

IMPACTS OF COVID-19 PANDEMIC

To say that COVID-19 impacted this project would be an understatement. The Mega Data project began in the fall of 2019. As RRS was about to launch the first wave of data requests and outreach in early 2020, the pandemic struck and required closures of everything including state government, local governments, schools, and businesses. Then the project was paused for most of 2020 by EGLE.

When the project finally resumed in late 2020, momentum had been lost, and the world as we know it had changed the way it operates. Local government offices remained closed for most of 2020 (and longer) meaning that outreach to local units of government about their materials management programs was challenging. Staff were working from home while their files remained back at the local government offices, making them inaccessible. Haulers and facilities were dealing with large volumes of materials as many people opted to complete home clean-up projects leaving stacks and piles of waste curbside for collection. Public meetings were no longer being conducted in person and not encouraged as the spread of COVID-19 continued.

Despite the challenges posed by COVID-19, the project did continue in a modified manner. Because stakeholder engagement as planned was specifically impacted, data collection shifted to using more online resources, direct outreach via phone and email, and requests for information through the Freedom of Information Act.

ABOUT DATA

RRS endeavored to collect as much information as possible from all identified stakeholders through different approaches and multiple outreach attempts. The data included in this report reflects what was collected, but does not include every municipality, county, facility, and hauler in the state. The information obtained as part of the Mega Data project provides EGLE with a solid base of program and infrastructure information, some of which has never been collected before by the state.

Data collection is a snapshot in time and information changes frequently. Over the duration of this project municipalities changed haulers, new programs and services started, and acquisitions of private sector companies and facilities occurred. That said, maintenance of the data collected and initiatives to collect more data on a regular basis are recommended to build upon the foundation that Mega Data has provided. RRS imagines that once this report is available to stakeholders, more information will become available and enhance what has already been collected during the Mega Data project.

PROJECT DELIVERABLES

RRS produced the following deliverables for the Mega Data project.

- **The Final Report:** Information gathered as part of the Mega Data project has been organized and summarized these key areas – Access, Infrastructure, Program Data, Education, and Policy.
- **Benchmark Recycling Standard (BRS) Analysis:** analysis using parameters developed by EGLE to measure and evaluate access to recycling services in the state. The deliverable includes maps and corresponding data tables. The BRS Analysis is not included in this report and will be provided separately.
- **County Profiles** for all 83 counties: originally created to verify information collected part way through the project, the profiles became a project deliverable. The information summarized closely mirrors what is required in solid waste management plan documents and can be a tool for counties to use. For EGLE, the profiles provide a county-by-county summary of programs and infrastructure. The profiles will be provided to EGLE separately from this report.
- **The Data:** all data collected under the Mega Data project is provided to EGLE in spreadsheets and in files with compiled information like collected municipal contracts and ordinances.

METHODOLOGY

To understand the entire state of Michigan’s materials management programs and infrastructure requires information from multiple sources. One piece of information would be directed to another, and another, and so on. Slowly the pieces of the puzzle were assembled to understand how materials management services are provided in a community and the facilities and haulers who support those services.

Target audiences for data collection included municipalities, counties, haulers, and materials management facilities. Related target audiences were any additional organizations, groups, or companies that own and operate any of the facilities, such as a not for profit that owns and operates a recycling drop-off location. RRS began with gathering program information and data, then infrastructure. Program information focused on municipalities and counties, and infrastructure encompassed haulers and all the various facility types.

Table 1. Mega Data Target Audiences

TARGET AUDIENCES FOR DATA	
Programs	<ul style="list-style-type: none">• Municipalities• Counties
Infrastructure	<ul style="list-style-type: none">• Haulers• Facilities (including MRFs, Organics, Transfer Stations Type A and B, Drop-offs, Secondary Processors and Brokers, End Markets)

Prior to any outreach to target audiences, RRS obtained information from EGLE regarding materials management and referenced other existing data available in approved Solid Waste Management Plans (see Table 2 for additional information). Based on available information, RRS initiated data collection with the target audiences.

RRS used different approaches over multiple attempts to obtain information from each target audience. For municipalities and counties, data collection started with a systematic direct verification of online published materials management program information on community websites. Additional research and outreach included direct phone calls, interviews, and Freedom of Information Act requests. Municipalities and counties were encouraged to complete the Municipal Measurement Program and County Run Measurement Program online surveys. RRS engaged organizations such as Michigan Recycling Coalition and Michigan Municipal League’s Michigan Green Communities Network to assist in reaching these target audiences. For facilities, RRS reviewed online information in addition to doing direct outreach via phone call, email, and mail.

RRS focused on facilities that do not typically report to EGLE, such as drop-off facilities for waste and recycling. Facilities such as landfills and registered compost facilities were not pursued directly as part of this project, however RRS did attempt to gather additional information from facilities that report under Part 175¹. The

¹ Part 175, Recycling Reporting, of Act 451 requires certain recycling facilities to report the amount of materials recycling each year. This includes Material Recycling Facilities, Processors, and End Markets that meet the criteria set by the statute. More information is available at www.michigan.gov/recyclingreporting.

information reported under Part 175 is confidential; therefore, RRS did not have access to it as part of this project. This posed an issue with some facilities who did not want to participate in the Mega Data project because they already report under Part 175. Publicly owned facilities were more responsive and forthcoming with information compared to privately owned facilities. RRS appreciated those private sector representatives that did speak with us during the project.

Table 2. Data Sources for Mega Data Project

DATA SOURCES
<ul style="list-style-type: none">• Approved Solid Waste Management Plans• EGLE's Waste Data System (WDS)• EGLE's Recycle Search tool• EGLE's Recycling Specialist staff• Interviews with county program coordinators and designated planning agents (EGLE provided contact lists)• County Run Measurement Program Survey via ReTRAC• Municipal Measurement Program Survey via ReTRAC• Municipal Education & Outreach Survey• Information obtained through Freedom of Information Act requests such as copies of contracts for services, intergovernmental agreements, and ordinances.• Web research• Direct outreach through phone calls, emails, and letters to all target audiences and related groups or organizations with access to target audiences• County Profile review responses• Third-party database for recycling/waste facilities

U.S. CENSUS DATA FOR MICHIGAN

RRS used the most recent census data from 2020 for the project. The total population for the State of Michigan is 10,077,331. The total number of communities in Michigan according to the 2020 U.S. Census data is 2207 including Census Designated Places (CDP), or 1935 without CDPs. Townships make up the majority of communities with approximately 1240, with cities and villages making up the remainder with CDPs.

ACCESS

Understanding how materials management services are provided and accessed was a primary focus of the Mega Data project. With over 1900 municipalities across the state and over 2200 including Census Designated Places, RRS spent a significant amount of time collecting information about what services are provided at the local level, how those services are provided, and overall access to those services. RRS focused on single-family residential curbside and drop-off collection services for trash, recycling, and organics (primarily yard waste, but included additional organics if service is available).

PROVISION OF CURBSIDE COLLECTION SERVICES

Curbside collection of trash, recycling, and organics is usually the most convenient way to collect materials. The provision of curbside collection services by municipalities for their residents is commonly provided in one of three ways.

- **Municipal:** a municipality owns and operates the collection of trash, recycling or organics with their own equipment and labor.
- **Contracted:** a municipality contracts with a private hauler to provide collection of trash, recycling, or organics for a fee. All single-family residential units must use the contracted hauler for collection.
- **Open Market or Subscription:** a municipality is not involved in coordinating collection of trash, recycling, or organics; it is up to the individual homeowner to secure these services (or “subscribe”) a company of their choosing from the “open market”.

In some instances, curbside services are provided by more than one approach, specifically around organics collection. RRS found it common for municipalities to offer their own organics collection but have contracted collection for trash and recycling. The organics collection includes seasonal collection of yard waste, brush, or leaves. RRS verified 161 communities with municipal collection of yard waste.

There are variations to the three main provisions of services. For example, some municipalities contract with a private hauler to provide collection but not all single-family residential units are required to use the contractor and may still secure services in the open market. This is known as a “preferred hauler” system or arrangement. The municipality can often secure better rates than an individual household but leaves the decision of which service provider to choose to the individual homeowners. This is a nice option for municipalities considering a single hauler contract approach when residents are used to securing their own services and may be resistant to change. One example where this arrangement is in use is Ann Arbor Charter Township.

Another variation is working collaboratively as an authority to secure collection services. Two examples in Michigan include SOCRRA in Oakland County and the Mid-Michigan Waste Authority in Saginaw County. By bundling communities together, the cost of services can often be lower than if communities attempted to secure services themselves. Furthermore, there are efficiencies of having one bid process rather than dozens, a benefit to both the communities and the haulers as these processes can be time consuming.

Finally, another variation is the county use of funding mechanisms such as Public Act 138 or 69. In these cases, the county acts as the responsible party to contract for curbside recycling services. Allegan and Manistee counties

utilize this approach for municipalities in their counties that opt to participate. More information and discussion about funding mechanisms is included in a later section.

DETAILS ABOUT CURBSIDE COLLECTION SERVICES

Frequency of collection:

Curbside collection services for trash, recycling, and organics are typically weekly or every other week depending on the material type. For trash, weekly collection is the most common. For recycling, both weekly and every other week are common. For organics, collection is typically weekly on a seasonal basis (April- December).

Container Sizes and Types:

The most commonly used containers by material type are:

- Trash: 96- gallon carts and plastic bags
- Recycling: Carts (64 and 96 gallon) and bins
- Organics: Self-provided containers or kraft paper bags

Recycling Collection Type:

Single-stream recycling is the most common collection type for recycling, where information can be verified. Out of 350 programs with information available, 12 of those exclude glass from the curb. Dual stream recycling collection is available in about 21 programs.

ACCESS TO CURBSIDE COLLECTION

For this project, RRS categorized municipalities' service provision as either municipal or contracted. If information about municipal or contracted curbside collection services could not be confirmed, they are assumed to be serviced by the open market or subscription. Access will be addressed in greater detail through the Benchmark Recycling Standard analysis, which will be provided in a separate report. In this report, RRS provides information about access to curbside services provided by municipalities via their own service or contracted service. Drop-off access is discussed later in this section.

Table 3 shows the types of curbside services provided by municipal and contracted services. The data is shown by number of communities with that type of curbside service provided, the percent of communities in the state that service type represents, and the percent of population provided with that type of service. From the available information based on municipally provided and contracted curbside collection services, almost 60% of the state's population has access to curbside recycling services. It is roughly the same for both trash and yard waste services.

Municipal Collection

Access to curbside collection services provided by municipalities serves a small portion of the state's population and communities as shown in Table 3. As noted earlier, curbside organics collection by municipalities is by far more common than providing other curbside services. The six cities identified as providing trash, recycling, and yard waste through municipal collection are Bay City, East Lansing, Lansing, Midland, Mt. Clemens, and Warren. More municipalities provide curbside collection of either a single material or a combination of two materials.

Contracted Collection

Access to curbside collection provided by contract serves a large portion of the state's population. Over 50 percent of the state's population has access via contracts with private haulers for the curbside collection of trash

alone. From the data, it appears that more communities contract for trash service only compared to contracting for the whole suite of services including recycling and organics.

Table 3. Overview of Municipal and Contracted Curbside Collection

CURBSIDE SERVICES	MUNICIPAL COLLECTION ACCESS- CURBSIDE			CONTRACTED COLLECTED ACCESS – CURBSIDE			TOTALS		
	Count	Comm %	Pop %	Count	Comm %	Pop %	Count	Comm %	Pop %
Trash	41	1.9%	8.9%	551	25.0%	54.8%	592	26.9%	63.7%
Recycling	34	1.5%	7.5%	383	17.4%	52.2%	417	18.9%	59.7%
Organics	161	7.3%	13.4%	244	11.1%	45.0%	405	18.3%	58.4%

COMMERCIAL AND MULTI-FAMILY ACCESS

Sometimes multi-family and commercial locations are included in curbside services provided to single-family residential units in a community. About 25 percent of contracts obtained by RRS included some level of multi-family and commercial services. Overall, if both commercial and multi-family locations set out similar amounts and can use the same containers as a single-family residential unit, it is easy to incorporate them into a curbside collection program.

Multi-family locations are allowed based on the number of units. This number ranges from 2 to 8 units in the available contracts. Commercial service offerings vary. Some communities provide service to commercial locations if they set out similarly to single-family residential and utilize the same containers (City of Escanaba). Another community with a downtown filled with restaurants, bars, and retail provides centrally located trash compactors for use by commercial locations (City of Ferndale).

RRS conducted research on a few of the communities that provide commercial recycling services to provide some additional information and best practices for consideration to communities seeking to expand their recycling and increase diversion. A summary of the interview and research is included in Appendix A.

PROVISION OF DROP-OFF SERVICES

Drop-off services are provided by both the public and private sector. Drop-off collection services can supplement curbside collection services or provide services in areas where access to service is lacking. Private sector drop-off locations were observed to be primarily existing operating locations that provide access to handling different material types. Whereas a county may establish a recycling drop-off in an area where curbside recycling is not easily accessible, a private sector drop-off is one that is typically already there for other reasons, however additional services may be added on due to demand and collaboration with surrounding communities. More information about drop-off facilities is provided in the Infrastructure section.

Table 4. Drop-off Facility Providers and Commonly Accepted Materials

DROP-OFF PROVIDER	% OF DROP-OFF FACILITIES	TRASH	RECYCLING	ORGANICS	HHW	OTHER
County	25.5%		✓		✓	
Township	24.9%	✓	✓			
Private	22.6%	✓	✓	✓	✓	✓
City	13.9%		✓	✓		
Village	5.0%	✓	✓	✓		
Conservation District	4.4%		✓		✓	
Non-Profit	3.7%		✓			✓

Many drop-offs documented for this project are county run and largely provide drop-off recycling and household hazardous waste collection. Most are permanent facilities, and temporary drop-off events are also offered through counties. County run recycling drop-off programs are noted for Alpena, Benzie, Calhoun, Charlevoix, Cheboygan, Clare, Clinton, Delta, Eaton, Emmet, Grand Traverse, Isabella, Kent, Leelanau, Manistee, Missaukee, Monroe, Montcalm, Newaygo, Oceana, Ottawa, Presque Isle, Sanilac, and Tuscola Counties. Some county drop-off locations are coordinated or operated by other agencies like Conservation Districts or non-profits like in Antrim (Conservation District) and Chippewa (Northern Transitions) Counties. The agencies also host one day collection events for household hazardous waste.

Township drop-off facilities most commonly accept trash and recycling from residents. Many of these sites are called transfer stations and would be categorized by the state as Transfer Station Type B. These sites offer an alternative to obtaining curbside collection services especially in areas where curbside is provided by the open market. Townships also offer clean-up day type collection events once or twice per year, which typically accept bulky items, e-waste, tires, and regular household trash.

Cities and villages most commonly provide organic drop-offs. From the available information, approximately 70 percent of city drop-off locations are only for organics (primarily yard waste, leaves, and brush). Both cities and villages offer other drop-off services, but organics is the primary material accepted. In some of the cities, curbside organics collection is available and in other cities, curbside is not provided.

Private sector drop-off facilities provide access to a broader range of materials for disposal or diversion. Many of the drop-off locations identified are facilities owned and operated by national and regional waste hauling and disposal companies such as Granger Waste Services, Republic Services, and Waste Management. Different material drop-off services are co-located at these types of locations. For example, a trash transfer station may also include a recycling drop-off. Private organic drop-offs are typically provided by organics processing facilities or landscaping businesses who accept materials from the public.

Fees may apply when utilizing a drop-off service, especially for trash. The publicly owned trash transfer stations usually have a price sheet and charge fees by the material or by volume (i.e., per bag of trash). Recycling drop-off services do not always charge users directly. County run recycling programs typically do not have out of pocket expenses for residents. Funding for county programs will be discussed in the Policy section. Temporary collection events vary between no charge or charges for certain items accepted at the event. Donations are also strongly encouraged.

ACCESS TO DROP-OFF SERVICES

Drop-off locations provide access to trash, recycling, and organics services for 35 percent of the population on average. Access to recycling through drop-off is available to 75 percent of the population, including some who have access to curbside.

Facilities can be designated for residents of a specific community only or allow non-residents as well. About 40% of the facilities documented are for residents only and about 53% are open to anyone (residents and non-residents). Facilities that are limited to residents only often provide a sticker or card to assist with verification. Some facilities would allow non-residents to utilize the facility for an extra fee on top of fees charged by material.

Table 5. Drop-off Access Summary

DROP-OFF SERVICES	COMMUNITY COUNT W/ACCESS	% COMMUNITIES W/ACCESS	% POPULATION W/ACCESS
Trash, Recycling, Organics	421	19.1%	26.2%
Trash	929	42.1%	48.4%
Recycling	1541	69.8%	74.5%
Organics	643	29.1%	38.4%
Trash and Recycling	820	37.2%	37.9%
Trash and Organics	438	19.8%	28.0%
Recycling and Organics	597	27.1%	34.4%

INFRASTRUCTURE

Materials management infrastructure is comprised of facilities to handle materials and the haulers that provide collection and transport of the materials. Some of the materials management infrastructure is regulated by EGLE such as landfills, registered compost facilities, and recycling establishments under Part 175. As such, RRS focused on facilities with the least amount of documentation, specifically drop-off facilities. These facilities, or just drop-off sites in some cases, make up a large component of the materials management infrastructure in the state. Haulers were documented as information became available about which companies provided services in different municipalities across the state. In general, the information successfully gathered about infrastructure is best described as an inventory. Information beyond location and potential service areas was more challenging to obtain such as how materials flow throughout the state from generation to end market.

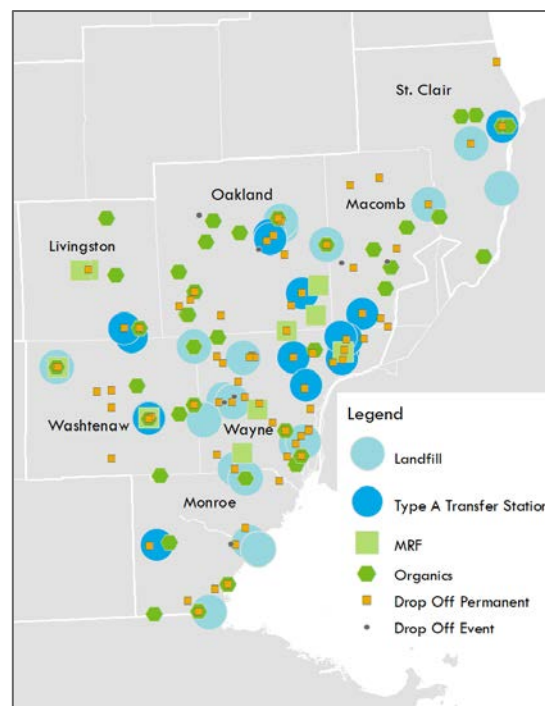
FACILITY TYPES

RRS aimed to gather information from the following facility types that are important to materials management infrastructure in the state. Most of the facilities on this list are defined by state statute and can be referenced in Appendix B.

- **Sorting Facilities:** includes Recycling Establishments (Part 175), MRF (traditional) and Other Source Separated Facilities.
- **Transfer Station Type A:** a facility that is designed and operated to receive domestic and commercial solid waste from mechanically unloaded vehicles. These facilities typically accept more than 200 cubic yards of waste per day.
- **Organics Processing Facilities:** includes Compost Facilities and Other Organics Facilities as defined by statute.
- **Secondary Processors and Brokers:** entities that process the primary product to a finished good in the value adding production chain; entities that buy/sell recovered materials.
- **End Markets:** businesses that use recyclable materials to make a product.
- **Drop-off Facilities:** public or private organization accepting materials from the public. See the Drop-off Facilities section for further categorization of these types of facilities.

Publicly owned facilities were more responsive and forthcoming with information compared to privately owned facilities. It was challenging to obtain information from transfer stations type A, secondary processors, brokers, and end markets. Several representatives from the private sector spoke to RRS during the project and RRS is appreciative of those individuals. In the absence of gathering data regarding tonnage of materials handled, RRS focused on confirming locations and operating status so at a minimum EGLE would have access to a verified list of actively operating facilities. This information was used to prepare visuals of materials management facilities organized by county and by region.

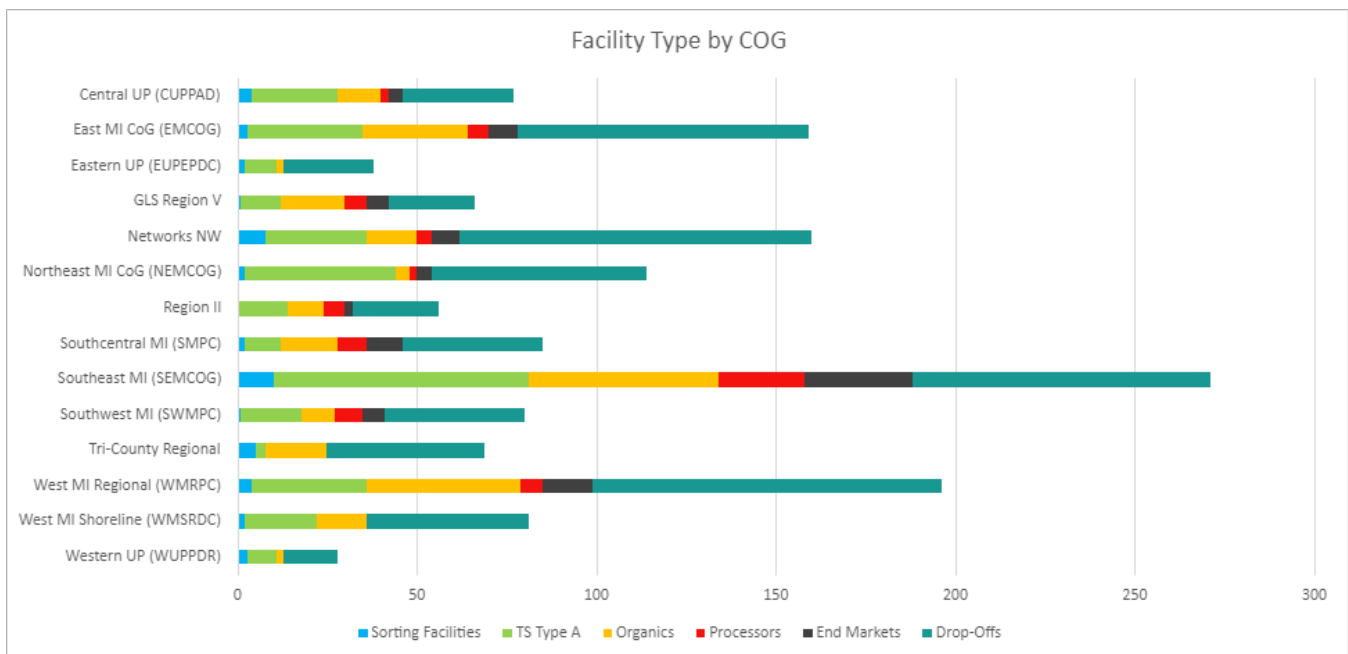
Figure 1. Example Map of Facility Type by Material for Region 1 – Southeastern Michigan Council of Governments



County maps prepared are included in the individual county profile documents. Maps of facility types by planning regions have been provided directly to EGLE. See Figure 1 as an example of the maps by planning regions.

In Table 6, facility types are summarized by planning region, per Michigan Association of Regions. The southeastern and west Michigan regions contain the most facilities in total, with the northwestern, northeastern and eastern parts of the state rounding out the top five out of fourteen. Two regions with the fewest number of facilities are the in the Upper Peninsula. This doesn't necessarily mean these areas are underserved, it could be that the current number of facilities is sufficient to serve the population size there. For more information and analysis of infrastructure and facilities, please refer to the [2021 Gap Analysis Update](#) report, prepared as part of the NextCycle Michigan initiative.

Table 6. Facility Type by COG/Planning Region in Michigan



DROP-OFF FACILITIES

RRS organized the drop-off facility types using EGLE definitions. The different types of drop-off locations are:

- **Waste Diversion Centers:** accepts materials such as hazardous waste, liquid waste, pharmaceuticals, electronics, batteries, light bulbs, pesticides, mercury containing devices, and sharps generated by households, businesses, or government entities.
- **Transfer Station Type B:** a facility that is designed and operated to receive domestic and commercial solid waste from vehicles unloaded by hand. Typically accept less than 200 cubic yards of waste per day.
- **Source Separated Recycling Drop-off Traditional:** accepts paper, plastic, metal, and glass recyclables from the public.
- **Source Separated Recycling Drop-off Nontraditional:** accepts items other than paper, plastic, metal, and glass for recycling from the public.
- **Organics Drop-off:** accepts organic materials from the public.
- **C&D Drop-off:** accepts construction and demolition materials from the public.

A drop-off facility may be categorized as more than one type of facility depending on the types of materials accepted. For example, if a drop-off facility accepts paper, plastic, metal, and glass recyclables it is considered a Source Separated Recycling Drop-off. If the same facility also accepts household hazardous waste, it is also considered a Waste Diversion Center. EGLE requested tracking the facilities this way and it is also accurate as many drop-off facilities handle different types of materials.

The information in Table 7 provides an overview of the different types of drop-off facilities. For each category, the table provides:

- a total count of facilities that can be designated as that type,
- how many facilities operate as a standalone facility and do not collect other types of materials,
- type of ownership – public, private, and non-profit.
- whether the facilities are permanent or temporary.

The majority of drop-off facilities are provided by the public sector and are permanent facilities. Traditional recyclables are most commonly collected at drop-off facilities. The standalone facilities are primarily county recycling drop-off locations where either a large container or several smaller containers are provided to collect recyclables. Most of these sites are not staffed.

Access to facilities and fees vary. About 40% of the facilities documented are for residents only and about 53% are open to anyone (residents and non-residents). The remaining facilities access could not be verified. Facilities are limited to residents only and often provide a sticker or card to assist with verification. Some facilities would allow non-residents to utilize the facility for an extra fee on top of fees charged by material.

Table 7. Drop-off Facility Type Summary

DROP-OFF TYPE	TOTAL	STAND ALONE	PUBLIC	PRIVATE	NON-PROFIT	PERM	TEMP
Waste Diversion Center	194	51	128	54	12	149	45
Transfer Station Type B	224	43	163	57	4	195	29 ²
Source Separated Recycling Drop-off Traditional	357	90	284	65	8	347	10
Source Separated Recycling Drop-off Non-Traditional	263	10	198	47	18	243	20
Organic Drop-off	227	129	167	57	3	211	16
C&D	105	1	53	47	5	95	10

HAULERS

RRS documented approximately 90 privately owned hauling companies who provide materials management collection services around the state. The state is serviced by national companies, regional companies, and small independent operations. Over the course of the project, acquisitions of smaller companies by larger companies occurred. For example, Great American Disposal in the Upper Peninsula was acquired by GFL.

² Temporary trash related events counted here are community clean-up days that indicated they accept waste.

PROGRAM DATA

OVERVIEW

While this project was nicknamed “Mega Data,” actual data about materials recovered in programs across the state was difficult to obtain. The information exists in Michigan but tracking and reporting of data is not common at the municipal or county level except in certain circumstances. There is also little policy to support or require the collection of data, making it voluntary and an overlooked aspect of materials management. When available, data is powerful and can inform about waste generation and waste diversion and identify areas for improvement and opportunities to expand. The lack of available data means that generated and potential diversion information provided as part of the Mega Data project is projected. Fortunately, this project will provide EGLE with a baseline of information that can be built upon in years to come.

OBSERVATIONS

RRS found data to be more commonly available under the following circumstances:

- Municipalities and counties who perform their own curbside collection services for waste, recycling, and yard waste
- Municipalities and counties who run their own drop-off facilities for waste, recycling, and yard waste
- Municipalities and counties who provide one-day/special collection events for household hazardous waste, electronics, and other materials
- Municipalities and counties who own their own facilities for processing waste, recycling, and yard waste
- Municipalities who are members of authorities for waste, recycling, and/or yard waste
- Municipalities and counties who have supporting policy in place that requires reporting

Lack of data is typical and usually due to one or more of the following:

- Collection of materials may occur in the same truck for multiple municipalities and is difficult to ascertain how much is from one compared to another
- Data reporting is not required as part of contracts for services
- Data collection is mostly voluntary and not required to be provided by municipalities.
- Data from private sector companies is also not required, unless specified in a contract or ordinance

To assist in gathering program tonnage information, RRS employed two tools by the creators of Re-TRAC, Emerge Knowledge Design. One is the Municipal Measurement Program (referred to as eMMP by EGLE), a free program assessment and planning tool. The other is a customized version of the eMMP created specifically for this project to gather information from counties. Both tools produced data in terms of tonnage or pounds of materials collected, but for only a small fraction of municipalities. About a quarter of all counties provided data through the CRMP for recycling drop-offs and household hazardous waste collections.

MUNICIPAL MEASUREMENT PROGRAM

The eMMP tool was designed by The Recycling Partnership and Re-TRAC Connect to “create a centralized database of local government program information that state, county, and regional agencies can use to improve

recycling in the United States”.³ Municipalities apply to join for free and enter their program information for a calendar year (for example in 2022, the eMMP was collecting information from 2021). The tool generates reports to measure program performance, monitor trends, benchmark results, and identify opportunities to improve programs based on information provided by answering a comprehensive set of questions about waste, recycling, and organics programs. States, counties, and regional governments can purchase a subscription to access the data entered by municipalities and generate similar reports at a state, county, or regional level.

The eMMP started collecting data from Michigan Municipalities in 2019 for the 2018 reporting year.

- In 2019, for the 2018 data collection year, five municipalities reported
- In 2020, for the 2019 data collection year, 93 municipalities entered data
- In 2021, for the 2020 data collection year, 45 municipalities entered data
- As of November 2022, for the 2021 data collection year, 33 municipalities entered data

With no charge to municipalities to participate, RRS and EGLE agreed to utilize the eMMP for the Mega Data project to encourage self-reporting data collection for municipalities. The timing to launch the first phase of data collection with municipalities through the eMMP coincided with the early months of the COVID-19 pandemic and did not generate as many responses as anticipated. However, as noted above, the reporting year 2019 – the target year for the Mega Data project when it started – saw more responses from Michigan municipalities than other years. Even with fewer responses available than anticipated, the information available for reporting years 2019 and 2020 not only offers insights into programs in the state, but also use of the tool in the future.

Most of the municipalities who responded both years also have variables that increase the chances that data is available. Nine of the reporting municipalities in 2020 are members of two different authorities who also own their own MRFs. Five of the municipalities provide collection in-house and the other 24 have contracts for collection service. The municipalities who reported in 2020 represented approximately 1.8 million residents or 18 percent of the population of Michigan. The information in Table 8 reflects tonnage data provided by municipalities through the eMMP for 2020.

Based on the responses, RRS has concluded that municipalities with curbside programs and services are more likely to utilize the eMMP. In 2019, municipalities both with and without curbside programs participated in the eMMP. This year was also when RRS and EGLE conducted promotion around the eMMP for the Mega Data project. In 2020, only communities with curbside programs participated. In the future, EGLE might consider targeting municipalities with curbside services provided either by the municipality itself or through a contract for services to keep information current. For municipalities with curbside services provided through the open market (e.g., subscription services), the eMMP may not be as useful of a tool as it may take a larger effort to encourage participation and answer questions that primarily do not apply.

³ Source: www.municipalmeasurement.com

Table 8. Data Reported by Municipalities through eMMP in 2020

REPORTING MUNICIPALITY - 2020	COUNTY	MSW (TONS)	RECYCLING (TONS)	ORGANICS (TONS)
Charter Township of Canton, MI*	Wayne	26,153	5,651	No curbside
Charter Township of Marquette, MI*	Marquette	1,180	182	No curbside
Charter Township of Milford, MI (RRRASOC)*	Oakland	3,800	625	356
City of Auburn Hills, MI *	Oakland	Access; Data N/A	Access; Data N/A	Access; Data N/A
City of Battle Creek, MI*	Calhoun	18,359	1,725	4,334
City of Bay City, MI	Bay	Access; Data N/A	Access; Data N/A	No curbside
City of Brighton, MI*	Livingston	Access; Data N/A	Access; Data N/A	No curbside
City of Detroit, MI*	Wayne	279,735	5,472	No curbside
City of Farmington Hills, MI (RRRASOC)*	Oakland	18,568	5,808	4,504
City of Farmington, MI (RRRASOC)*	Oakland	2,161	725	1,156
City of Ferndale, MI (SOCRRA)	Oakland	Access; Data N/A	Access; Data N/A	No data provided
City of Grand Rapids, MI*	Kent	37,714	7,157	No data provided
City of Holland, MI*	Ottawa	7,278	1,521	No curbside
City of Kalamazoo, MI	Kalamazoo	Access; Data N/A	2,261	No curbside
City of Lansing, MI*	Ingham	Access; Data N/A	5,600	3,200
City of Marquette, MI	Marquette	2,463	806	No curbside
City of Mount Pleasant, MI*	Isabella	1,960	422	No curbside
City of Novi, MI (RRRASOC)*	Oakland	12,252	5,042	2,695
City of South Lyon, MI (RRRASOC)*	Oakland	3,966	67	1,307
City of Southfield, MI (RRRASOC)*	Oakland	19,025	2,582	7,672
City of Trenton, MI	Wayne	Access; Data N/A	No curbside	No curbside
City of Walled Lake, MI (RRRASOC)*	Oakland	1,935	238	453
City of Westland, MI	Wayne	Access; Data N/A	5,100	No curbside
City of Wixom, MI (RRRASOC)*	Oakland	2,634	791	1,331
Township of Ely, MI	Marquette	773	10	No curbside
Township of Negaunee, MI	Marquette	968	124.9	No curbside
Township of Orion, MI*	Oakland	12,439	2,523	No curbside
Village of Bellevue, MI*	Eaton	Access; Data N/A	Access; Data N/A	No curbside
Village of Milford, MI (RRRASOC)*	Oakland	2,583	473	1,253
Total Tons		455,948	54,906	27,008

*Reported in 2019 and 2020

RRS found that the eMMP participants regularly reported some program details, but not others. This is consistent with RRS' experience when gathering information in other ways. In both years, basic information about programs was often filled out, such as collection details, frequency of collection, rates, and tonnage. Responses were less often provided around more detailed information such as the items collected, contamination rates, and information about the provision of services to multi-family or businesses. The most common blanks in the eMMP responses were about: tipping fees, tonnage data, set-out rate, specific materials lists, rolling carts, and MRFs.

In general, the eMMP can be a powerful tool to engage municipalities that provide curbside services and gather regular updates. The information requested as part of the eMMP includes all of the programmatic details that EGLE desires to improve materials management across the state. Online tools can be challenging for some potential users who would prefer other ways to share information, but the eMMP could be used as the standard for information gathering.

COUNTY RUN MEASUREMENT PROGRAM

One approach RRS used to collect county program and services information was a specifically designed online survey tool. The County Run Measurement Program or CRMP used a similar format to the eMMP and was promoted to both county program coordinators and Designated Planning Agency representatives (both contact lists maintained by EGLE). RRS offered one on one phone calls in addition to the online option to provide counties multiple ways to provide information.

The CRMP survey questions were divided into sections:

- Materials management services provided by the county
- Education and outreach activities
- Planning, goals, and challenges (which also included questions about funding)
- Policy

If a county indicated it provided services, an additional survey would become available to complete information for permanent or temporary drop-off services.

Of the 83 counties in Michigan, 59 completed the CRMP. Twenty counties provided data in the CRMP, primarily for materials collected through their drop-off programs. A couple of counties indicated that they track curbside recycling data for their municipalities. The information in Table 9 reflects data submitted through the CRMP survey; there may be other counties that run programs and track data that are not listed here.

The CRMP served a purpose for the Mega Data project to gather information from each county about materials management programs, services, and related details. In the future, it may be more efficient to ask for data directly from counties related to their drop-off programs instead of a special survey. Most counties have that information available. The one-on-one conversations were the most valuable as far as understanding a county. RRS would recommend check-ins at least once per year with county staff.

Table 9. Counties with Program Data Collected by CRMP - 2020

COUNTY	MATERIALS ACCEPTED IN PROGRAMS	HOW DATA IS TRACKED
Alpena	HHW, Metal, E-waste, Scrap Tire	Weighs on site; converts pounds to tons
Calhoun	Recycling, HHW, E-waste, Scrap Metal	Weight records/reports
Charlevoix	Recycling, E-waste, Scrap Metal, Scrap tire, C&D	Weight records/reports
Cheboygan	Recyclables	Weight records/reports
Clinton	Recyclables	Recycling vendor reports
Emmet	Recyclables, C&D, Scrap Metal/White Goods	Scale, outbound shipment tons
Kalamazoo	Curbside recycling for 8 municipalities; HHW	N/A
Kent	Recyclables, Scrap Metal, E-waste, HHW	Inbound tonnage on County scales
Lenawee	Recyclables	Monthly report required by waste haulers
Macomb	HHW	Weight records/reports
Manistee	Curbside recycling	Weight tickets from contracted recycling collection service provider
Marquette**	Curbside recycling by community; Drop-off recyclables, organics, C&D, HHW, E-waste	Certified scales at County Solid Waste Management Authority
Mason	HHW	Weight record/reports provided by hauler
Missaukee	Recyclables, scrap metal	Weight record/reports from vendors
Oakland	HHW, E-waste	Weight records/reports from HHW vendor
Osceola	HHW	Weight records/reports
Otsego	Recyclables	Weight records/reports
Ottawa	Recyclables, Scrap Metal, HHW, E-waste	Weight records/reports
Presque Isle	Recyclables	Weight records/reports
Van Buren	HHW	Weight records/reports

**Marquette County CRMP was completed by Marquette County Solid Waste Management Authority, not the County itself.

EDUCATION

Education and outreach are foundational to programs successfully and efficiently recovering materials. While education is now being recognized as an essential part of materials management systems at state and national levels, most public recycling programs in Michigan tend to have inadequate staff time, budgets, and knowledge to provide the education needed for their customers to use their systems correctly and fully. Many are doing their best with the resources available to them but given the desire of the state to increase the diversion of materials, education, and outreach are areas that would benefit from additional resources and support. Fortunately, the past decade has brought excellent educational resources and tools to public sector staff that can help maximize the impact of educational efforts.

For this project, RRS focused on public sector education and outreach for recycling. RRS collected information regarding education and outreach directly from community, county, and service provider websites, as well as interviews, and three surveys conducted during the project. Two surveys included an education and outreach section, and one survey was developed specifically for this project to obtain more information about recycling education in communities in Michigan.

OBSERVATIONS

Many county and community materials management related programs and services are housed in departments that residents may not make an immediate connection with, for example, a health department or the area Conservation District. Thus, most websites are difficult to navigate to find basic recycling and waste information. Often it requires many clicks on a site to access this information, but only if you know where to find it. Ideally this information would be accessible on the home page of the website in easy-to-understand terms for the public.

Recycling information, if available, lacks consistency across the state. There are many reasons for this, such as different recycling facilities accepting different materials. However, even within the same “MRF-shed”⁴ information about acceptable recyclable materials can vary from community to community. This becomes increasingly obvious when a community may work with the same hauler over several years through contract extensions but displays recycling guidelines from the original start date of the contract that do not reflect more recent changes to acceptable materials.

Guidelines themselves vary from community to community. Some are detailed to the point of overwhelming, while others provide only the very basics. Both approaches can be beneficial but usually only to specific audiences. Avid recyclers who want to make sure they divert as much as possible prefer the detailed guidelines. Less engaged recyclers just want to know the basics – can this go in my recycling container or not. Images are also helpful for many people, including in areas where many different languages are common. The best practice is something in the middle between these two extremes. Guidelines are best when providing enough detail to understand what is accepted in a recycling program without overwhelming someone who may perceive recycling as difficult to do. Figure 1 shows an example of a community’s guidelines. This information sheet provides what can be recycled in simple categories, with additional detail about what the category includes and what it does not include, and how to properly prepare the recyclables all on one page. Even though in terms of design this information sheet is rather plain, it conveys the necessary information for successful recycling.

⁴ MRF-shed implies an area where all recyclable materials go to the same recycling facility and therefore should have the same guidelines.

The source of the guidelines also varies. Some are created by the community or county, and others are provided or link to hauler information. As such, haulers are a critical stakeholder when it comes to education and outreach.

Communities are also evolving past the information sheet or flyer and utilizing web-based search tools to assist residents with information on waste and recycling. Popular tools are known as Waste Wizard or Recycle Coach. The tools assist residents on what can and cannot be recycled, and there are additional features to help identify when collection takes place. The tools provide data on the backend about what are the most commonly search materials, how many users accessed the tool, and items that residents suggest being included in the search tool. The back-end data can help educators or community staff understand what requires more information and focus efforts. RRS observed these tools on [community](#), [county](#), and [recycling authority](#) websites. [Kent County](#) developed its own version of these types of tools.

Social media is used frequently as well. Most municipalities and counties have a social media presence that, like a website, includes updates from all departments and services. Some programs have their own social media presence that is only for waste and recycling information. For the most part, the only cost to communities and counties using social media for education and outreach is staff time; however, social media reach can be enhanced through paid promotion.

OVERVIEW OF EDUCATION AND OUTREACH SURVEY RESULTS

RRS prepared and distributed a survey to focus on education and outreach in July 2021. The survey was distributed through MML’s Michigan Green Communities, Michigan Recycling Coalition and County coordinator contacts. While the survey did not yield very many responses, the information obtained does provide a useful sampling from across the state. The survey questions inquired about program details such as budgets, tactics and delivery, best practices, and challenge areas.









Survey Respondents

RRS received 16 responses from counties, cities, villages, and townships ranging in population from 1,200 to 136,000, including both dense and less densely populated communities and/counties. Responses came from Upper Peninsula, Northern Michigan, West Michigan, Southwest Michigan, Thumb, and the area surrounding Lansing.

Program Details

Only half of the responses indicated they provide education and outreach services, with budgets ranging from \$250 to \$75,000. In-house staff provide most of these services, with contractor/consultants and haulers as the next most common responses.

Figure 2. Recycling Guidelines Example

RECYCLABLE MATERIALS PREPARATION GUIDE			
ITEM	YES	NO	HOW
 NEWSPAPERS & PHONE BOOKS	Newspaper	No plastic wrappers	Stack neatly in brown paper bags to avoid materials flying away.
	Newspaper inserts	No metal inserts	
	Phone books		
	Glossy magazines		
 MAGAZINES	Catalogs	No product samples	Keep materials clean.
	Flyers	No aluminium foil	Remove and discard non-recyclable items.
	Brochures		
	Scratch paper		
 JUNK MAIL & OFFICE PAPER	Envelopes	No plastic windows	You can mix all paper items together in one bag.
	Letters	No metal items	
	Photo copies		
	Computer paper		
 BOX BOARD	Cereal boxes	No laundry soap boxes	FLATTEN all boxes.
	Dry food boxes	No wax coated boxes	Place boxboard in paper bag or bundle with string.
	Shoe boxes	(milk and juice boxes)	
	Paper towel rolls		
 CORRUGATED CARDBOARD	Brown paper bags	No wax coated boxes.	FLATTEN all boxes.
	Corrugated is two layer cardboard with a wavy middle layer.	No food contamination.	Clean material ONLY.
		No wood/foam supports	Bundle no larger than 3' X3' pieces.
 ALUMINIUM AND TIN CANS	Aluminium & tin food cans -- RINSED.	No large items.	Clean material ONLY.
	Foil pie plates & trays.	No scrap metal.	Remove paper labels.
	Empty aerosol cans.	No coated foil wrappers.	Flatten as much as possible.
		NOTHING DIRTY.	
 PLASTICS	Plastic bottles labeled on the bottom: 1 2	No motor oil jugs.	Clean material ONLY.
	Detergent bottles and Milk jugs. -- RINSED	No medical items.	Crush if possible.
		No packing peanuts.	No styrofoam.
 GLASS	Clear, green, brown only -- RINSED	No plate glass, light bulbs, mirrors or glasses.	Clean material ONLY.
	Unbroken jars & bottles	No ceramics or cookware.	Labels OK.
	Container glass ONLY	No frosted, blue or black.	Remove lids & caps.

Tactics and Delivery

All responders indicated that they primarily focus on resident education and outreach. Other audiences targeted include businesses, K-12 students, college students, neighborhood organizations, and faith-based groups. The main purpose of their activities is to provide residents with information about materials management services (trash, recycling, yard waste, household hazardous waste, etc.) Additional responses indicated they target new recyclers about what services are available and existing recyclers about what is new. More than half of the responses noted part of their goals are to address contamination and other abuses to programs and services (illegal dumping, for example).

The most common questions asked by residents involve inquiries about the lack of availability of curbside recycling, operational questions such as confirming collection day and hours of operation for facilities, and access to additional programs that are temporary events such as household hazardous waste and electronics collection. This type of information is useful in determining which tactics to use to increase awareness or change behavior.

The primary education delivery method is websites. Handouts, seasonal newsletters to residents, and social media were the other methods identified. The survey inquired about advertising, promotional materials, and engagement activities. The responses to those questions are summarized in Table 10.

Table 10. Reported Education/Outreach Tactics

FREQUENCY	ADVERTISING	PROMOTIONAL MATERIALS	ENGAGEMENT ACTIVITIES
Commonly Used	<ul style="list-style-type: none">• Digital ads• Press releases	<ul style="list-style-type: none">• Newsletters• Flyers, pamphlets, brochures• Utility bill inserts	<ul style="list-style-type: none">• Public events (pre-pandemic)
Sometimes Used	<ul style="list-style-type: none">• Newspaper ads• Direct Mail	<ul style="list-style-type: none">• Direct mail• Magnets• Notice/tags on carts• Calendars	<ul style="list-style-type: none">• Trainings and workshops• Awards program• School presentations (pre-pandemic)
Never Used	<ul style="list-style-type: none">• Billboard• Bus ads• Radio ads• TV ads		<ul style="list-style-type: none">• Competitions• Incentive programs like Recycle Bank

Successful Approaches

When asked about the most successful education and outreach initiative for their programs, responses included:

- Facebook for event promotion
- Monthly e-newsletter
- Magnets for residents
- “Oops” tags to inform residents about proper material preparation and set out
- Targeting new residents as they move into the community
- Waste Wizard online search tool.

The follow-up question asked about what best practice they would recommend to another community. The responses mirrored the previous question and mentioned social media campaigns as provided by Recycle, MI and The Recycling Partnership, a good website, and use of other materials provided by The Recycling Partnership.

The best practices tactics identified here are a mix of low cost and paid options. Low cost implies mostly staff time such as social media posts and newsletter content, whereas other tactics have out of pocket expenses like magnets, cart tags, material production, and the online search tool. None of the costs for any of these recommendations are excessive, but still requires budget and staff time. It should also be noted that education and outreach is ongoing, not a one-time activity, so budgets must be replenished year after year.

Challenge Areas

Almost all responses indicated that they would like to do more education and outreach about recycling, even though they do provide some already. The top three limiting factors towards providing education and outreach were identified as funding, staff time, and knowledge or training. The most interesting response of the three is knowledge or training. There was a time when counties and communities employed full time recycling coordinators or related staff. Over the years, the number of dedicated staff has dwindled. Now it would appear that those with the responsibility for the materials management education and outreach may require additional training or understanding of the subject to better educate their residents.

BEST PRACTICES IN RESIDENTIAL MATERIALS MANAGEMENT EDUCATION

Cover the Basics First

Essentials include:


- A website. An easily found, user-friendly, visually appealing website serves as the hub for all other education efforts.
- Easy to access recycling information and other waste handling opportunities on the website as described earlier.
- A phone line and people to answer questions and pass along service issues and respond to messages within one business day. Staff and/or trained volunteers can use the website for reference and a place to share and store answers to more unusual questions.
- A basic printed guide with easy-to-understand recycling guidance and the program's website.
- For drop-off sites, up-to-date, simple, clear point-of-collection signage is vital. Signs should refer customers to the website for more information.

Leverage Team Enthusiasm

When the essentials are in place, a small team with a modest budget can achieve maximum effect by leveraging their own passions and strengths. That might mean, for example, posting on whatever social media they most enjoy, setting up recycling in interested schools, networking at community events, writing and distributing media releases, speaking on local radio and TV shows, or working in a myriad of other channels. Enthusiasm for a particular approach can give it disproportionate impact.

Follow The Recycling Partnership's Lead

The Recycling Partnership makes professional marketing techniques and insights from highly relevant, in-depth research accessible online to anyone. When creating new materials, educators would do well to use their DIY



customizable materials or imitate them. Educators should subscribe to their emails to take best advantage of The Recycling Partnership's newest resources and tools.

Collaborate within the MRF-shed

Where messages are the same, communities can divide up tasks to create materials all can use. For example, some of Networks Northwest's counties took turns writing and sharing seasonal media releases discouraging the burning of garbage and yard waste. Similarly, communities can get further by working together to apply for education-related grants and sharing costs to hire professionals to develop educational assets.

Consider Using Online Tools and Apps

Widgets and apps like those provided by ReCollect and Recycle Coach can help customers zero in quickly on exactly what they want to know. This space is evolving rapidly. Check out BetterBin, for example, which allows customers wondering if something is recyclable to access the answer from participating SMM programs by scanning the barcode on the item. Online forms allow customers to submit service requests and register for events at their convenience and free up staff.

Engage with Your Peers

There is a regular meeting of materials management educators coordinated by [Iris Waste Diversion Specialists](#). The Resource Recovery Educators of Michigan (RREM) group meets bi-annually and is an excellent opportunity to network with peers who are struggling with similar challenges. The Michigan Recycling Coalition (MRC) is the state organization for recycling. Members include stakeholders from across the industry and is another place to connect with others with education and outreach initiatives. MRC hosts regional meetings and an annual conference in the spring. They also have an education committee open to members.

Recognize What Education Can and Cannot Do

While high recycling participation and volumes and low contamination are not possible without education, materials management programs cannot generally expect education to overcome system design defects. For example, an educational campaign cannot increase volumes recycled by residents of a multi-family housing community where the recycling system is not providing adequate cart or bin capacity. The takeaway: before looking to education as a solution, assess systems.

In conclusion, while education is not a panacea that can address all the industry's challenges, it is foundational to programs successfully and efficiently recirculating materials. Fortunately, the past decade has brought excellent educational resources and tools to public sector staff that can help maximize the impact of educational efforts.

POLICY

RRS reviewed ordinances and funding mechanisms enacted by local municipalities, including cities, towns, villages, and counties to further understand the regulatory framework and funding for materials management. Information reviewed in this section was primarily obtained through a Freedom of Information Act request to municipalities and the CRMP survey for counties. Other sources included information provided directly on websites and the Michigan Municode library available online.

MUNICIPAL ORDINANCES⁵

Most of the municipal ordinances that RRS obtained primarily address the storage and collection of waste within the residential and commercial sectors. Most do not specifically address multifamily other than a presumption that multifamily locations are considered commercial properties where an owner or manager has the responsibility for ensuring for the proper collection of waste. Another common purpose for ordinances is to prevent illegal dumping and nuisance mitigation. Finally, many ordinances speak to the payment and fee method that is employed by both the municipality on behalf of residents or how contracted service providers assess fees and manage payment collection.

Municipal ordinances can serve as tools to encourage more recycling and waste diversion. The language can be simple like City of Rockwood (Wayne County) or more intentional like City of Coldwater (Branch County) with examples shown below. RRS reviewed 25 municipal ordinances that included language requiring recycling. The majority of municipalities are located in Macomb, Oakland, and Wayne Counties. Additional review is required to provide more information to EGLE.

City of Rockwood, MI (Wayne County)

"...all persons who are owners, lessees or occupants of any residential site of generation shall separate all recyclable materials and place them in an approved recycling container at the curb on their designated collection day"

City of Coldwater, MI (Branch County)

"In order to reduce the amount of solid waste materials in landfills, protect our environment, conserve our natural resources, save energy and contain the financial burden of waste disposal, the City Manager is hereby authorized and directed to establish a City-wide recycling program and to establish rules and regulations for the implementation of the program"

Other ordinances require the licensing of haulers. This common approach can generate additional revenue for communities, albeit in small amounts, and require haulers to provide regular information and data about materials collected. In one instance an ordinance required regular reporting to ensure that recyclables (and waste) are being

⁵ 314 municipalities across 72 counties from across the state provided ordinances as part of this project. There may be more municipal ordinances in existence.

handled at the appropriate facility. Several municipalities in Kent County with licensing requirements do so to ensure materials are delivered to specific facilities.

MUNICIPAL FUNDING MECHANISMS

The most common method of funding programs at the local level is the use of a **legislatively authorized millage**. Cities and villages are authorized by Act 298 of 1917 (MCL 123.261) to collect up to three mills for refuse and recycling programs. The elected body approves an annual “garbage tax” as part of the budgeting process with funds being collected as part of the next tax cycle. Charter Townships are authorized to collect up to two mills.

The second most common method of funding programs is through **municipal utility or service fees**. A municipality can establish an exclusive service provision (e.g., waste collection) and charge that service through a utility billing system or other user fee system. This is a common method when a municipality already has other utility billing systems in place for water, sewer, or electricity.

The third most common method of funding programs is through **special assessment districts**. Michigan Townships (Public Act 188, 1954 MCL 41.721) and Villages (Public Act 116, 1923, MCL 41.411) can create special assessment districts for improvements that provide waste and recycling services.

Other municipal funding approaches include:

Hauler Franchise and Hauler Collected Fees

A municipality can award an exclusive hauler contract/franchise for the collection of waste from residential and/or commercial sources and bundle recycling services in with the contract. The hauler is responsible for providing all services and collecting fees from the systems users following a pricing schedule contained in their franchise/contract with the municipality.

Voter Approved Program Millage

The majority of voters approve of a millage to fund resource recovery programs for either capital or operating costs. The majority approval of voters would implement this funding mechanism. These almost always have a sunset clause (e.g., five years) to require re-evaluation and re-voting by citizens. A millage can be temporary and limited in scope to specific capital projects.

General Fund

Some municipalities have managed to cover program costs out of their general fund, most often when program offerings are limited in scope such as seasonal clean-up programs or are provided jointly through larger inter-governmental project like regional household hazardous waste services.

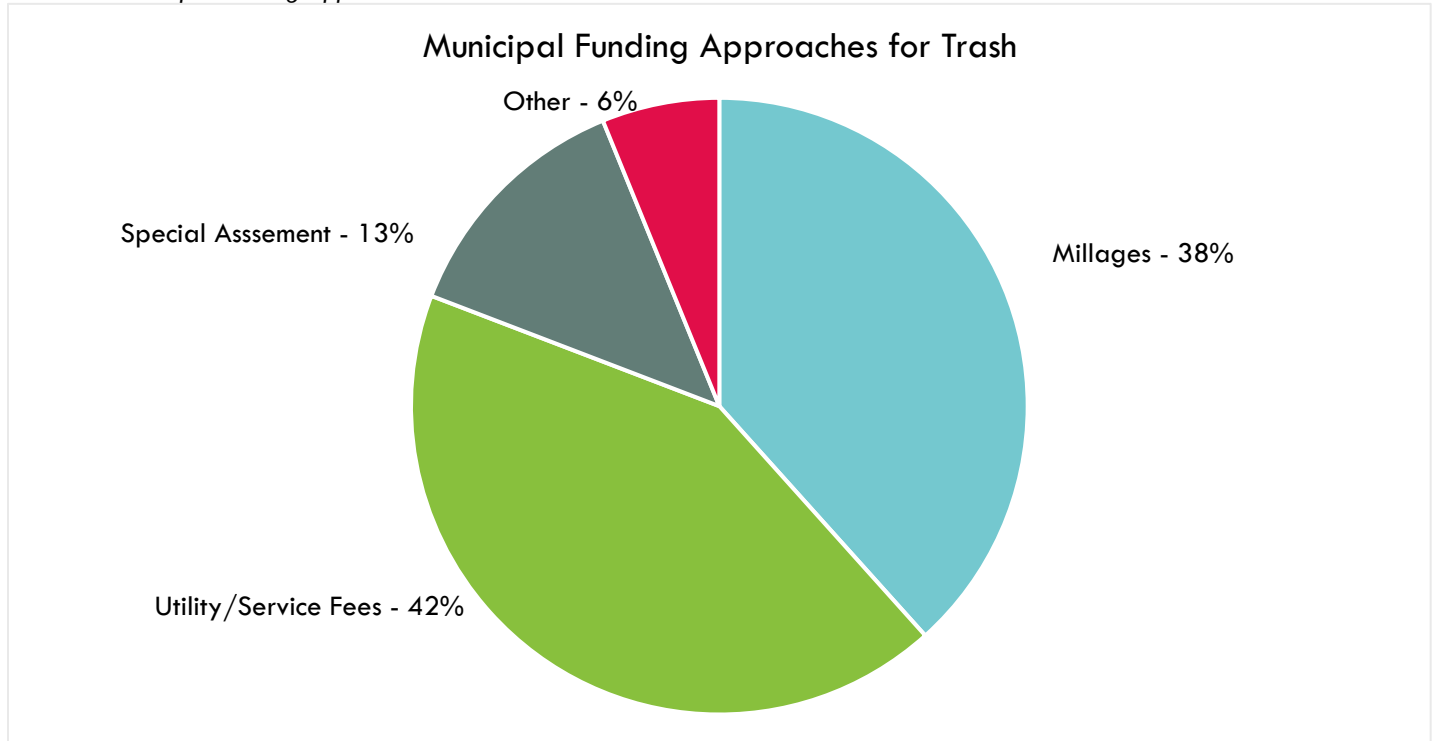
Supplemental Fees for Service

Additional charges and supplemental fees are used by many municipalities to cover costs for value added services that some but not all citizens use and that citizens often expect to be provided by their municipality. Examples include curbside bulky waste pick-up, curbside brush collection, tire drop-offs and drop-off convenience center refuse and recycling services.

RRS obtained funding information from 178 cities, villages, and townships. The methods commonly used mirror those previously described. From this grouping of municipalities, use of a legislatively funded millage and municipal

utility and services were similar. “Other” funding approaches represented here are hauler collected fees, general fund, and supplemental fees for services.

Table 11. Municipal Funding Approaches for Trash



COUNTY FUNDING MECHANISMS

Counties in Michigan have several different funding mechanisms to establish and operate programs. Choosing the best option can depend on what the funds are intended for and if a landfill is in a county. In some cases, counties utilize more than one mechanism to support programs. County ordinances typically outline funding mechanisms for county programs and services and are described in greater detail in the following section.

One of the most common county funding approaches is the landfill or facility surcharge. Counties can impose a fee that applies to all incoming tons (residential and commercial) and varies with incoming waste volumes. The fee can be enacted by ordinance, contract (like a host community agreement), or as part of the budget of publicly owned facilities. This funding approach is best used for administrative expenses and education/outreach programs. It can work for special material programs such as household hazardous waste and electronic waste. Counties that employ this approach include Calhoun, Clinton, Delta, Emmet, Genesee, Grand Traverse, Leelanau, Marquette, Monroe, Muskegon, Ottawa, St. Joseph, Washtenaw, and Wayne Counties.

Another funding mechanism available to counties is Public Act 69 and Act 138 Surcharge Fees. With Act 69, through County and local unit resolutions, voters in each jurisdiction are asked to approve this resource recovery charge (up to \$50) per household/business per year that can then be collected (if voters approve in that local unit) by the County as part of winter taxes. This is like the Act 138 fee that is limited to households only with a maximum of \$25/year, but just requires approval by the elected officials of the local unit. This funding mechanism is best

used for recycling program expenses (both drop-off and curbside) and special materials programs like household hazardous waste. It can also work for administrative expenses and education and outreach. This mechanism cannot be used for trash system costs. Benzie, Leelanau, and Manistee Counties use Act 69. Allegan and Clinton Counties use Act 138.

Counties can also utilize Public Act 185. Counties can create a board and department of public works that can incur contract obligations, levy taxes, issue/pay bond and implement special assessments in order to establish improve, operate and maintain a recycling program within one or more areas of the county⁶.

Eaton County utilizes a Hauler License Resource Recovery Fee. Licensed haulers can be charged a "Resource Recovery Charge" for each household and commercial account and be required to pass through that charge as a line item to their customers. The charge is set as part of the annual budgeting process to cover all costs for Resource Recovery Programs. Each hauler's share is then based on their percentage of the market, information provided as part of the reporting requirements.

The main sources of income for Emmet County are the sale of recyclables and allocation of funds from Transfer Station revenues. On an ongoing basis, this has covered all the costs to operate the county's drop-off recycling site and Recycling Processing Facility. All facilities and systems expansion since 1992 have also been funded by Department of Public Works operations. Emmet County does contract with neighboring counties to process their recyclables. Those counties have a millage or feed to fund their programs to pay Emmet County for services.

Table 12. County Initiated Funding Mechanisms

FUNDING MECHANISM	COUNTY USE
Landfill/Facility surcharge	Calhoun, Clinton, Emmet, Genesee, Leelanau, Marquette, Monroe, Muskegon, Ottawa, St. Joseph, Washtenaw, Wayne
Voter Approved Millage	Antrim, Charlevoix, Cheboygan, Chippewa, Missaukee, Presque Isle, Sanilac, Tuscola, Van Buren
Act 69 and 138 Surcharge Fees	Act 69: Benzie, Leelanau, Manistee Act 138: Allegan, Clinton
Act 185 County Board of Public Works Assessment	Washtenaw
Hauler License Resource Recovery Fee	Eaton
Supplemental Fees for Service	Emmet, Washtenaw

For additional information about funding, EGLE's website provides two guidance documents. Links provided below.

[Guide: Use of Special Assessments to Fund Recycling Services & Facilities](#)

[Guide: Operational and Funding Options for Municipal Recycling](#)

⁶ Guide: Operational and Funding Program Option for Municipal Recycling Programs; EGLE; website.

COUNTY ORDINANCES

RRS obtained and reviewed ordinances from Delta, Eaton, Emmet, Genesee, Grand Traverse, Kent, Leelanau, Lenawee, Monroe, Ottawa, and Wayne Counties. Other counties may have ordinances that were not obtained as part of this project and therefore are not included here.

Most of the county ordinances review included similar features.

Surcharges:

Surcharges on waste generated in the county and disposed of at county facilities or county designated facilities were common in most of the ordinances. The fees are then used to fund administration and program operations, in addition to implementation/enforcement of the county solid waste management plan. As discussed in the previous section, landfill or facility surcharges are the most common funding mechanism employed by counties.

Hauler licensing:

Requirements of licensing typically include registration or inventory of vehicles (for a small fee), regular reporting of quantities of waste handled, and maintenance of residential and commercial customer lists. Additionally, some counties require licensed haulers to provide information about where services are provided, such as curbside recycling (e.g., Eaton County). Hauler licensing also provides documentation to ensure that materials are being handled properly and regular reporting provides essential data to understanding generation in counties. RRS was hard pressed to obtain data from programs across the state, and hauler licensing is one option to increasing the tracking and reporting of waste and recycling data at the local and county levels.

Volume-based fee requirement:

Licensed haulers are required to provide waste disposal fees based on volume like per bag or cart rather than a flat rate (such as a flat monthly rate covering any amount set out). Under this approach, waste reduction and recycling are encouraged. Residents can take responsibility for waste they generate and the costs to dispose of waste depending on the volume set out.

Use of County Designated Facilities:

Requiring use of certain facilities assists with the collection of surcharges. In the case of Emmet County, directing licensed haulers to use the County Transfer station serves to preserve competition by leveling the disposal cost “playing field” for the various waste haulers – local, regional, national, and multinational companies; those who earn thousands and those who earn billions; those who own landfills and those who do not.

There are some unique features in Grand Traverse County’s ordinance that offer ways to increase access to services, decrease barriers, and provide consistency in recycling in a county.

Designated Curbside Recycling District:

Grand Traverse County’s ordinance identifies a designated curbside recycling district where single-family residential structures and multifamily residential structures with 4 or less units per building are eligible to receive curbside collection services for yard waste and recyclable materials. The collection of recycling is included in the cost of solid waste collection; however, yard waste is an extra cost. The bundled cost of curbside waste and recycling decreases one barrier to recycling by not having an extra fee associated with recycling.



Curbside access to all waste, recycling, and yard waste curbside collection services:

Grand Traverse County also requires service providers to offer all curbside collection services to its customers throughout the county, but for an additional fee rather than bundled like in the Designated Curbside Recycling District). Haulers cannot only collect waste and must provide access to curbside collection of recyclables and yard waste. Counties where residents secure their own services for collection would greatly benefit from this provision in an ordinance to increase access to curbside services in their counties.

Targeted materials list:

Grand Traverse County also identifies a targeted material list of recyclables that must be collected in the county by licensed haulers. This approach ensures that all haulers accept the same materials across the county creating consistency for all recyclers and the county can be the reliable and trusted resource for “what can I put in my bin” questions and answers.

APPENDIX A

Examples of Commercial Recycling Programs

This section explores how four communities – the City of Lansing, Emmet County, the City of Bay City, and the City of Ann Arbor – and one authority, SOCRRA, collect single stream or dual stream recyclables from businesses including container options, frequency, funding, and more.

Table 13. Commercial Recycling Services Summary Table

CURBSIDE RECYCLING	ANN ARBOR	BAY CITY	EMMET COUNTY	LANSING	SOCRRA
Streams	Single stream	Single stream	Dual stream	Single stream	Single stream
Dumpster Sizes and Prices	2, 4, 6, and 8 cubic yard No additional charge. ⁷	---	---	---	---
Cart Sizes and Prices	64-gallon or 96-gallon No additional charge.	96-gallon \$120/year additional carts \$120/year each	96-gallon \$185/year ⁸ additional carts \$185/year ⁹ each	96-gallon \$220/year additional carts \$100/year each	95-gallon cart \$60 each one-time fee
Tote Sizes and Prices	---	---	18-gallon \$75/year/tote	---	18-gallon bin \$20 each, one-time fee
Billing Mechanism & Frequency	NA ¹⁰	Monthly, on utility bill	Invoiced quarterly or annually	Invoiced quarterly	NA ¹¹

Providing carts is a substantial budget line item for these programs, and services related to them – delivery, exchange, pick up, maintenance, and cleaning – are labor intensive. Emmet County and Ann Arbor have fees to address these expenses. Emmet County has an annual per-location fee of \$50. Ann Arbor has different charges for each cart-related service which, when incurred, show up on the business' quarterly water bill. SOCRRA charges businesses for carts and bins and delivers at no charge.

Other interesting fees include a nuisance fee in Bay City and a \$70 fee Ann Arbor charges for sending a truck to pick up materials set out late. Bay City's nuisance fee can be applied to overflow and materials placed alongside

⁷ Covered by their Solid Waste Millage.

⁸ Plus, a "cart fee" of \$50 per location per year to help fund cart maintenance, replacement, and resupply, and miscellaneous cart services.

⁹ High-volume discounts are available.

¹⁰ Fees may be assessed for delivery of additional carts, picking up unwanted carts, cart exchange, cleaning of especially dirty carts, and servicing carts set out late. These charges would appear on the business' quarterly water bill.

¹¹ SOCRRA does not charge for collection; only a one-time fee for the purchase of recycling cart or bin.

carts. The fee starts at \$200 for the first offense and can go as high as \$750 per occurrence for repeat offenses. This fee is generally applied to trash issues, but Bay City has had trouble with recyclers setting out huge amounts of cardboard. Parks and Sanitation Manager Tim Botzau anticipates enforcing the in-the-cart-only rule more after the City transitions to automated collection in January of 2023.

Program Start-up

In Bay City, Ann Arbor, and Emmet County, curbside recycling for businesses has always been a consideration for their curbside recycling programs. Lansing's program grew out of a grant-funded pilot program around 2012; SOCRRA's program gained momentum around the same time.

Lansing, Bay City and SOCRRA report that their business recycling programs were developed to fill gaps in services offered by private haulers. In Lansing, haulers collected single stream recyclables from large businesses but not small ones. The City has seen success in filling the small-business niche. In Bay City, there is no other hauler of curbside recyclables for businesses, so the City included businesses in response to demand. In SOCRRA communities, many participating businesses are the small businesses and restaurants in member communities' downtown or business district areas. These areas are convenient to collect as they are typically adjacent to residential collection areas. Similarly, popular demand was behind the inclusion of businesses in Ann Arbor's curbside recycling program. At Emmet County, the business program was driven by the staff's commitment to maximizing material recovery.

Provision of Service

The City of Ann Arbor operates its commercial curbside recycling service in its downtown area. They contract with Recycle Ann Arbor to serve the rest of the City. The mandatory program aims to be comprehensive (though the City does not enforce the mandatory-recycling provision). Other commercial recycling offerings in the area do not appear to provide single stream service but instead focus on added services or specific materials, for example, document shredding and construction-and-demolition-debris recycling.

Bay City staff collect from their business customers on their residential recycling routes. The City's Parks and Sanitation Manager, Tim Botzau, reports that haulers operating in the area do not offer the service and attributes that mainly to Bay City being in an "MRF desert." The nearest MRF is at least an hour and a half away.

Emmet County also combines business and residential customers on the same routes. Their routes are county operated. GFL picks up mixed recyclables from a handful of their business customers (single stream). The other two private haulers operating in the County, WM and Little Traverse Disposal, do not offer collection of recyclables other than cardboard.

The City of Lansing's staff runs one commercial recycling route weekly on Wednesdays. While private haulers in the area do offer single stream recycling collection to larger businesses, Sustainability Manager Lori Welch reports that the City's program fills a substantial gap by serving small businesses. There is no capacity within the weekly route, as currently scheduled and run, to collect from more businesses. However, to help reach minimum tonnage requirements in the City's recycle-processing contract with Emterra and avoid financial penalties, the City is considering expanding business curbside.

SOCRRA provides weekly collection by the contractor trucks that provide collection in the nearby residential areas. Some generate significant amounts of recycling while others might be on par with a single-family household. Either

way, with the collection trucks already driving past these locations the commercial locations can easily be absorbed into the daily routes.

Policy Provisions

All four communities have some policies on the books which are relevant to their business recycling programs. SOCRRA does not have any policies.

Lansing

The City of Lansing passed a [commercial and multifamily ordinance](#) in the 1990s. The ordinance states that non-residential sites of generation shall recycle. The ordinance is not actively enforced.

Emmet County

Under Section 4.3 c of the [Administrative Rules of the County's Solid Waste Ordinance](#), the County requires private waste haulers to offer their commercial customers collection service for cardboard and to charge less for collecting cardboard than they do for waste collection.

Bay City

Bay City is in the process of adopting a revision of its solid waste policy, [Chapter 86 of the City Code of Ordinances](#). An update is needed to align the policies with current and soon-to-be-implemented recycling systems. It covers many system details, including requiring businesses to pay for the service and follow the same rules as residential customers.

Ann Arbor

The City of Ann Arbor's policies make recycling mandatory. Their [extensive code](#) and [regulations](#) contain "how-to" information, including where customers can set out carts and what materials they can include for recycling.

Promotion and Education

Emmet County is the only community of the four that has done extensive promotion of their business curbside recycling service recently. Emmet County Recycling's website highlights the County's curbside recycling and food waste programs on its home page. In addition, [dedicated commercial curbside recycling pages](#) include testimonials and a list of the hundreds of participating businesses to show that business recycling is a social norm in the County's curbside district.

This list was also published in the Petoskey and Harbor Springs newspapers around Earth Day and/or America Recycles Day for many years, taking up a half-page or more. Unfortunately, this practice was discontinued around 2019 due to advertising budget cuts.

County staff also offer business-curbside customers Emmet County Recycling logo decals to display, as customers who recycle will appreciate that their favorite businesses recycle too. (Over 80 percent of Emmet County's households use the county recycling program.) At the same time, it is another way to emphasize that business recycling is the norm in the community.

Emmet County staff attend chamber of commerce networking events several times a year to share about commercial services. They also periodically display at these events. The displays have included sell sheets, a huge "Big Green List" of participating businesses, and drawings for prizes of a year's service (covering one cart or three totes). Emmet has also advertised in the Petoskey and Harbor Springs chambers' weekly e-newsletters.

Representatives of the other three communities were subdued when speaking about promoting their business recycling programs. Lansing's Lori Welch said the City purposefully had not promoted its program for a long time due to limited capacity. Ann Arbor could "promote" its mandatory program via enforcement, but the City lacks the capacity for such enforcement. Bay City's Botzau reported that their promotional efforts had focused more on residential customers, especially since, in January, their residents will be switching from 18-gallon totes serviced weekly to 96-gallon carts serviced bi-weekly.

SOCRRA was highly active about 10 years ago in recruiting businesses to participate in its program. SOCRRA hired two part-time staff to recruit and establish business recycling programs. Today, the total number of participating businesses is 2,150 across the twelve member communities in southeastern Oakland County.

Education of business curbside recycling customers also varied widely. Lansing and Emmet County will do onsite education for businesses, including quick waste-stream assessments, best practices for work-station collection setup, and presentations to staff; however, they do not receive many requests for this service. Ann Arbor is planning a pilot project to test whether similar in-person assessment-and-education visits to commercial customers can reduce contamination in the recycling stream and recyclables landfilled with trash. They will be contracting with The Ecology Center to perform this commercial outreach study.

Ann Arbor shared several flyers and decals they use to educate about common business-recycling issues. Emmet County has specialized [business cart labels, quick-start guides, handouts, and signs](#) specific to their two streams.

Emmet County's website also includes a [school toolkit page](#) with specific information for cafeteria recycling, recycling by maintenance and janitorial staff, and recycling in classrooms.


CONCLUSION

Expanding recycling by businesses has the potential to increase recycling in Michigan significantly. The experiences of the cities of Lansing, Bay City, Ann Arbor, and Emmet County and SOCRRA can help other communities navigate beginning formal business recycling programs.

In addition to the above information, the four communities reported that providing curbside recycling to businesses has its own challenges. For example, companies often fail to prioritize training employees on recycling correctly; even when they do, employee turnover may dilute the effectiveness of such training. This can make contamination issues particularly intractable. Ann Arbor's Jennifer Petoskey put it succinctly: "Residents do it better than commercial businesses."

Additional challenges the communities shared included,

- At schools, specific parents and teachers may hold recycling programs together. Recycling programs often falter when the parent "graduates" out of a school or that teacher changes school or retires.
- Where the same routes serve business and residential customers, businesses are missed disproportionately by substitute or new drivers.
- In older business districts, narrow alleys make service difficult, while some business owners may view on-street setouts as detracting from the neighborhood's aesthetic.
- Where programs pick up from loading docks and other off-street locations within a business's footprint, drivers encounter more issues with snow plowing and with delivery or contractor vehicles blocking access.



Despite these challenges, the four communities and SOCRRA all see business recycling as an important part of their recycling systems and are committed to continuing and, where possible, expanding business recycling. Their systems illustrate potential best practices in the municipal business recycling space.

APPENDIX B

Materials Management Facility Definitions

Provided by EGLE to RRS for use with the Mega Data Project.

Notations:

(*) – Proposed legislation definition.

(**)- No official definition available

SOLID WASTE DISPOSAL AREAS:

Type II MSW Landfills

Municipal solid waste landfill or Type II landfill – means a landfill which receives household waste or municipal solid waste incinerator ash, and which is not a land application unit, surface impoundment, injection well, or waste pile. A municipal solid waste landfill also may receive other types of solid waste, such as any of the following:

- (i) Construction and demolition waste.
- (ii) Sewage sludge.
- (iii) Commercial waste.
- (iv) Nonhazardous sludge.
- (v) Hazardous waste from conditionally exempt small quantity generators.
- (vi) Industrial waste.

Such a landfill may be publicly or privately owned.

****Type II MSW Incinerator Ash Landfill** – only accepts MSW Incinerator Ash but is a Type II landfill as well (see above)

Type III Landfills

Type III landfill – means any landfill that is not a municipal solid waste landfill or hazardous waste landfill and includes all of the following:

- (i) A construction and demolition waste landfill.
- (ii) An industrial waste landfill.
- (iii) A landfill that accepts waste other than household waste, municipal solid waste incinerator ash, or hazardous waste from conditionally exempt small quantity generators.
- (iv) A coal ash landfill.
- (v) An existing coal ash impoundment that is closed or is actively being closed as a landfill pursuant to R 299.4309 of the part 115 rules.

Coal ash impoundment – means a natural topographic depression, man-made excavation, or diked area that is not a landfill and that is designed to hold and, after October 14, 2015, accepted an accumulation of coal ash and liquids or other materials approved by the department for treatment, storage, or disposal and did not receive department approval of its closure. A coal ash impoundment in existence before October 14, 2015 that receives waste after the effective date of the amendatory act that added this subsection, and that does not have a permit pursuant to part 31, is considered an open dump beginning 2 years after the effective date of the

amendatory act that added this subsection unless the owner or operator has completed closure of the coal ash impoundment under section 11519b or obtained an operating license for the coal ash impoundment.

Coal ash landfill – means a landfill that is used for the disposal of coal ash and may also be used for the disposal of inert materials and construction material used for purposes of meeting the definition of beneficial use 4, or other materials approved by the department.

****C&D Waste Landfill** – means a landfill that is used for the disposal of construction and demolition materials

Industrial waste landfill – means a landfill that is used for the disposal of any of the following, as applicable:

- (a) Industrial waste that has been characterized for hazard and that has been determined to be nonhazardous under part 111.
- (b) If the landfill is an existing disposal area, nonhazardous solid waste that originates from an industrial site.

Other Solid Waste Facilities

Municipal solid waste incinerator – means an incinerator, that is owned or operated by any person, and that meets all of the following requirements:

- (a) The incinerator receives solid waste from off site and burns only household waste from single and multiple dwellings, hotels, motels, and other residential sources, or this household waste together with solid waste from commercial, institutional, municipal, county, or industrial sources that, if disposed of, would not be required to be placed in a disposal facility licensed under part 111. 22
- (b) The incinerator has established contractual requirements or other notification or inspection procedures sufficient to ensure that the incinerator receives and burns only waste referred to in 25 subdivision (a).
- (c) The incinerator meets the requirements of this part 115 and the rules promulgated under this part.
- (d) The incinerator is not an industrial furnace as defined in 40 CFR 260.10.
- (e) The incinerator is not an incinerator that receives and burns only medical waste or only waste produced at 1 or more hospitals.

Solid Waste Processing Facility – means a tract of land, building, unit, or appurtenance of a building or unit or a combination of land, buildings, and units that is used or intended for use for the processing of solid waste or the separation of material for salvage or disposal, or both, but does not include a plant engaged primarily in the acquisition, processing, and shipment of ferrous or nonferrous metal scrap, or a plant engaged primarily in the acquisition, processing, and shipment of slag or slag products.

Solid Waste Transfer Facility - means a tract of land, a building and any appurtenances, or a container, or any combination of land, buildings, or containers that is used or intended for use in the rehandling or storage of solid waste incidental to the transportation of the solid waste, but is not located at the site of generation or the site of disposal of the solid waste.

Waste Diversion Center - means property or a building, or a portion of property or a building, designated for the purpose of receiving or collecting diverted wastes and not used for residential purposes.

Diverted wastes – means waste that meets all of the following requirements:

- (a) Is generated by households, businesses, or governmental entities.

- (b) Can lawfully be disposed of at a licensed sanitary landfill or municipal solid waste incinerator.
- (c) Is separated from other waste.
- (d) Is 1 or more of the following:
 - (i) Hazardous material.
 - (ii) Liquid waste.
 - (iii) Pharmaceuticals.
 - (iv) Electronics.
 - (v) Batteries.
 - (vi) Light bulbs.
 - (vii) Pesticides.
 - (viii) Thermostats, switches, thermometers, or other devices that contain elemental mercury.
 - (ix) Sharps.
 - (x) Other wastes approved by the department that can be readily separated from solid waste for diversion to preferred methods of management and disposal.

SOURCE SEPARATED/RECYCLING FACILITIES

***Materials Recovery Facility, subject to subsection (21)** - means a facility that meets both of the following requirements:

- (a) primarily receives source separated material for reuse, Recycling, or utilization as a raw material or new product.
- (b) on an annual basis, does not receive an amount of solid waste equal to or more than 15% of the total weight of material received by the facility unless the materials recovery facility is making reasonable effort and has an education program to reduce the amount of solid waste. Material disposed as a result of recycling market fluctuations is not included in the 15% calculation.

Subsection (21) - materials recovery facility does not include:

- (a) a retail, commercial, or industrial establishment that bales for off-site shipment managed material that it generates.
- (b) a retail establishment that collects returnable beverage containers under 1976 il 1, mcl 445.571 to 445.576.
- (c) a beverage distributor, or its agent, that manages returnable beverage containers under 1976 il 1, mcl 445.571 to 445.576.
- (d) an end user or secondary processor of recycled materials that were primarily generated by an industrial facility or were previously sorted or processed.

***Recyclable Materials [PART 115]** [traditional items as defined]: glass, metal, plastics, paper products, wood, rubber, textiles, ~~food waste, yard clippings~~, and other materials that may be recycled or composted. *(Material with strike-thru are not included for Mega Data purposes only, per EGLE).*

Source Separated Facilities [PART 115] as defined: Scrap wood and railroad ties; Gypsum drywall; and Asphalt shingles. *(Definition has been paraphrased for Mega Data project purposes only, per EGLE)*

NOTE: We do not want any facility identified if the materials are being used to fuel an industrial boiler, kiln, power plant, gasification plant, or furnace, they are subject to part 55.

Recycling establishment [PART 175]– means an establishment engaged in recycling of, or brokering of, reportable recyclable materials. Recycling establishment does not include any of the following:

- (i) An establishment that recycles fewer than 100 tons per year.
- (ii) A retail establishment that bales cardboard packaging for off-site shipment.
- (iii) A retail establishment that collects returnable beverage containers under 1976 IL 1, MCL 445.571 to 445.576, for transfer to a recycling establishment.
- (iv) An end user of reportable recyclable materials such as a paper mill, steel mill, foundry, or die caster that converts the reportable recyclable materials into new products or raw materials for conversion into new products.
- (v) A drop-off recycling location that sends all reportable recyclable materials to a recycling establishment registered under section 17502.
- (vi) An establishment that ships reportable recyclable material to recycling establishments registered under section 17502 but that does not engage in any other recycling.

Reportable recyclable materials, subject to subdivision (h) – means any of the following categories of recyclable materials that are separated from household waste or commercial waste, or from a combination of household waste and commercial waste, and that are delivered to a recycling establishment for recycling:

- (i) Glass.
- (ii) Paper and paper products.
- (iii) Plastic and plastic products.
- (iv) Ferrous metal, including white goods.
- (v) Nonferrous metal.
- (vi) Textiles.
- (vii) Single stream recyclable materials that include any combination of the materials listed in subparagraphs (i) to (vi).

Subdivision (h) - Reportable recyclable materials does not include any of the following:

- (i) Materials or products that contain iron, steel, or nonferrous metals and that are directed to or received by a person subject to the scrap metal regulatory act, 2008 PA 429, MCL 445.421 to 445.443, or by a reuser of these metals.
- (ii) Materials generated from the shredding or dismantling of motor vehicles or parts of motor vehicles.
- (iii) A beneficial use by-product, as defined in section 11502.
- (iv) A covered electronic device reported under part 173.

ORGANIC FACILITIES

Anaerobic Digester – means a facility that uses microorganisms to break down biodegradable material in the absence of oxygen, producing methane and an organic product.

Compost facility – means a facility where composting of yard clippings or other organic materials occurs using mechanical handling techniques such as physical turning, windrowing, or aeration or using other management techniques approved by the director.

***Compostable material** - means organic material that can be converted to finished compost. Compostable material comprises class 1 compostable material and class 2 compostable material.

***Class 1 compostable material** - means any of the following:

- (a) Yard waste.
- (b) Wood.
- (c) Food waste.
- (d) Paper products.
- (e) Manure or animal bedding.
- (f) Anaerobic digester digestate that does not contain free liquids.
- (g) Compostable products.
- (h) Dead animals unless infectious or managed under 1982 PA 24 239, MCL 287.651 to 287.683.
- (i) Spent grain from breweries.
- (j) Paunch.
- (k) Food processing residuals.
- (l) Aquatic plants.
- (m) Any other material, including, but not limited to, fat, oil, or grease, that the department classifies as class 1 compostable material under section 11562 or that is approved as part of a large composting facility operations plan.
- (n) A mixture of any of these materials.

***Class 2 compostable material** - means mixed municipal solid waste, biosolids, state or federal controlled substances, and all other compostable material that is not listed or approved as a class 1 compostable material.

ELECTRONIC WASTE FACILITIES

E-waste Collector – means a person who receives covered electronic devices from consumers and arranges for the delivery of the covered electronic devices to a recycler [see **Waste Diversion Center as this type of facility would be classified as a WDC**]

Covered electronic device – means a covered computer or covered video display device.

E-waste Recycler – means a person who as a principal component of business operations acquires covered electronic devices and sorts and processes the covered electronic devices to facilitate recycling or resource recovery techniques. Recycler does not include a collector, hauler, or electronics shop. [NOT NEEDED FOR MEGA DATA]

E-waste Manufacturer subject to subdivision (k) – means any of the following [NOT NEEDED FOR MEGA DATA]:

- (i) The person who owns the brand with which a covered computer is labeled.
- (ii) The person who owns or is licensed to use the brand with which a covered video display device is labeled.
- (iii) If the brand owner does not do business in the United States, the person on whose account a covered electronic device was imported into the United States.
- (iv) A person who contractually assumes the responsibilities and obligations of a person described under subparagraph (i), (ii), or (iii).

Subdivision (k) – manufacturer does not include a person unless the person manufactured, sold, or imported more than 50 covered computers in 2000 or any subsequent calendar year or more than 50 covered video display devices in the previous calendar year.

SCRAP TIRE FACILITIES/OPERATIONS [NOT NEEDED FOR MEGA DATA PURPOSES]

Scrap Tire Collection Site Collection site" means, subject to subdivision (e), a site consisting of a parcel or adjacent parcels of real property where any of the following are accumulated:

- (i) 500 or more scrap tires. This subparagraph does not apply if that property is owned or leased by and associated with the operations of a retailer or automotive recycler or a commercial contractor as described in subparagraph (iv).
- (ii) 1,500 or more scrap tires if that property is owned or leased by and associated with the operations of a retailer that is not also an automotive recycler.
- (iii) 2,500 or more scrap tires if that property is owned or leased by and associated with the operations of an automotive recycler.
- (iv) More than 150 cubic yards of tire chips if that property is owned or leased by and associated with the operations of a commercial contractor that is authorized to use the tire chips as an aggregate replacement in a manner approved by a designation of inertness for scrap tires or is otherwise authorized for such use by the department under part 115.

Subdivision (e) – Collection site does not include a disposal area licensed under part 115, a community cleanup site, a racecourse, or a feed storage location.

Scrap Tire End-User – means any of the following:

- (i) A person who possesses a permit to burn tires under part 55.
- (ii) The owner or operator of a landfill that is authorized under the landfill's operating license to use scrap tires.
- (iii) A person who uses a commodity to make a product that is sold in the market.
- (iv) A person who is authorized by this part to accumulate scrap tires, who acquires scrap tires, and who converts scrap tires into a product that is sold in the market or reused in a manner authorized by this part.

Scrap Tire Hauler – means a person who transports more than 10 scrap tires at once in a vehicle on a public road or street. Scrap tire hauler does not include any of the following:

- (i) A person, other than a commercial business, who transports that person's own tires to a location authorized in section 16902(1).
- (ii) A member of a nonprofit service organization who is participating in a community service project and is transporting scrap tires to a location authorized in section 16902(1).
- (iii) The owner of a farm who is transporting only scrap tires that originated from his or her farm operation, to a location authorized in section 16902(1), or that are intended for use in a feed storage location.
- (iv) A solid waste hauler that is transporting solid waste to a disposal area licensed under part 115.
- (v) A person who is transporting only a commodity.
- (vi) A retreader who is transporting scrap tires for the purpose of retreading, recasing, or recapping and who has the documentation required in section 16906(5).

Scrap tire processor – means either of the following:

- (i) A person who is authorized by this part to accumulate scrap tires and is engaged in the business of buying or otherwise acquiring scrap tires and reducing their volume by shredding or otherwise facilitating recycling or resource recovery techniques for scrap tires.
- (ii) A portable shredding operation.
- (z) "Solid waste hauler" means a solid waste hauler as defined in section 11506 who transports less than 25% by weight or volume of scrap tires along with other solid waste in any truckload to a disposal area licensed under part 115.