



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Setting Materials Management Goals

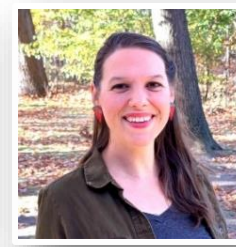
for Sustainable and Productive Results

May 15, 2025

EGLE MMD Recycling Unit

Michigan Recycling Coalition Conference

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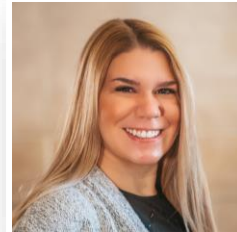
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To contact your **County or Regional Designated Planning Agency** and to see more information on materials management planning (MMP), MMP grants, and other resources, visit Michigan.gov/EGLEMMP.

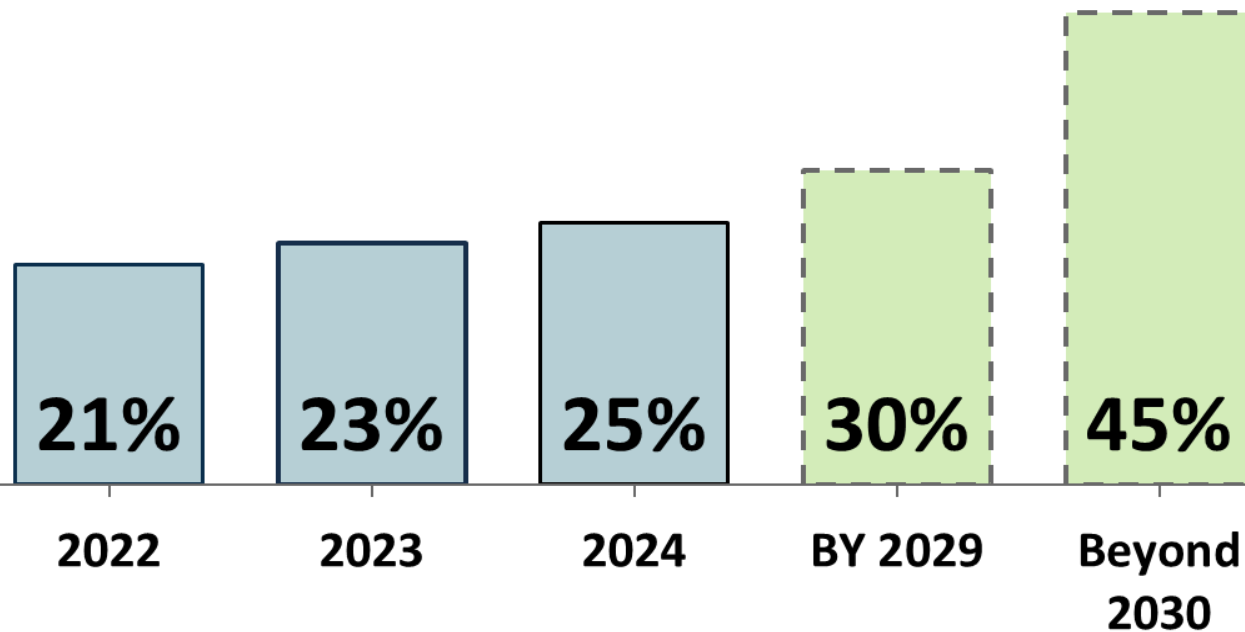
Today's Agenda

- Materials Management Planning Overview
- Introduction to MMP Goals
- Goals to Consider:
 - Recycling Management Goals
 - Food Waste and Organics Management Goals
 - Other Materials Management Goals
- Closing and Q&A

We will share these slides, but take notes of topics that are applicable to you for activities.

State of Michigan Recycling Goals

Recycling Rate



Food Waste Reduction

50% total reduction
of food loss and waste

Based on a 2021 baseline

Updates to Part 115

- ✓ Passed December 2022; Became effective March 29, 2023. Significantly changes the solid waste landscape in Michigan.
- ✓ Focus of planning has shifted towards materials management
 - Help to set/achieve priorities & the vision for each Planning Area
- ✓ The changes promote Material Management with the goals of:
 - Reducing the overall waste generated
 - Providing for innovative reuse of materials
 - Increased recycling, materials diversion and utilization
- ✓ Provides standards for recycling and composting facilities

Why is this Important?

- ✓ Shift the focus: **landfill capacity → diversion of materials**
- ✓ Recyclables are not waste – they are feedstock
- ✓ There is a supply gap for recyclable materials
- ✓ Recycling is a scalable, cost-effective climate solution

WHO/WHAT

WHO: County Approval Agencies (CAA)

- Take on responsibility to develop a Materials Management Plan
- All 83 Counties
 - BOC or County Executive



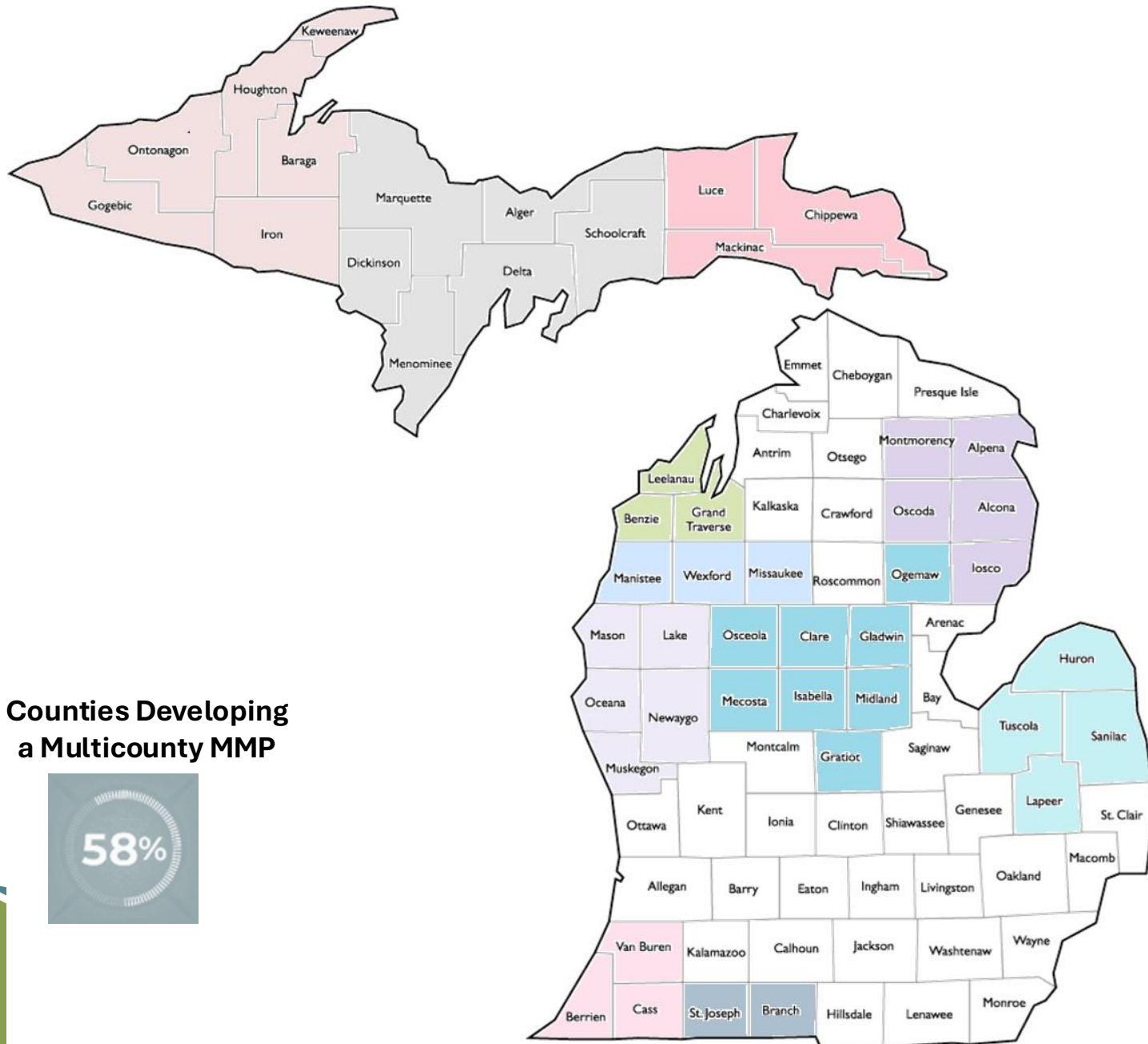
MMP Development

(Based on Notice of Intent (NOI) submittals)

Multicounty MMPs Counties

WUPPDR: Baraga, Gogebic, Houghton, Iron, Keweenaw, Ontonagon	CUPPAD: Alger, Delta, Dickinson, Marquette, Menominee, Schoolcraft
EUP: Chippewa, Luce, Mackinac	NNW2: Benzie, Grand Traverse, Leelanau
NNW-South: Manistee, Missaukee, Wexford	WMSRDC: Lake, Mason, Muskegon, Newaygo, Oceana
Heartland: Clare, Gladwin, Gratiot, Isabella, Mecosta, Midland, Ogemaw, and Osceola.	Thumb Region: Huron, Lapeer, Sanilac, Tuscola
Southwest: Berrien, Cass, Van Buren	Southcentral: Branch, St. Joseph
MOIAA: Alpena, Alcona, Iosco, Montmorency, Oscoda	<i>Italicized name is a tentative group names</i>

Counties in white are pursuing the MMP as a single county



CURRENT STEPS

Work Programs

- Over 50% of counties submitted and approved
- Identify DPA, appoint planning committee, determine tasks budget

MMP Grants:

- Used for costs for preparing, implementing, and maintaining MMP
- Reimbursement for NOI and Work Program Development available
- Non-competitive
- Statutory amount specified



Begin Drafting MMP!

NEW MATERIALS MANAGEMENT PLANS

- All counties will have an MMP
- New focus on materials management
- Help to achieve planning area's vision & priorities
- Creates needed infrastructure & programs for utilization
- Brings back personnel & resources statewide

Priorities: Baseline and Goal Setting!



PLANNING HUB

MMP : www.Michigan.gov/EGLEMMP



NEW Materials Management Plans (MMPs) have officially been called for.

New MMPs are in the approval and development process. Materials management planning is a program designed to guide the management of counties' materials, with an emphasis on increasing sustainable practices, such as recycling and composting, in addition to ensuring safe disposal options. These materials can include food waste, yard clippings, recyclables, other source separated materials, and solid waste. The new law establishes statewide recycling goals and standards, and the MMP will identify an implementation strategy to meet those goals.

CURRENT SOLID WASTE MANAGEMENT PLANS WILL REMAIN IN EFFECT UNTIL A NEW MATERIALS MANAGEMENT PLAN IS APPROVED.



MMP Grants

Grants are available to counties for the development, implementation, and maintenance of the new Materials Management Plans (MMP). To apply, counties should submit a work program approved by their Materials Management Planning Committee (MMPC).

[Materials Management Planning Grants](#) >



Plan Development Items

- [Approval Process Worksheet](#) (track deadlines and due dates)
- [Plan Approval Process](#)
- [Materials Management Plan Format](#)
- [Planning Quick Guide](#)
- [Plan Requirements](#)
- [Multicounty Planning](#)



MMP Tools

- [Approval Process Worksheet](#)
- [Planning First Steps](#) (Gantt Chart Format)
- [Sample Notice Language for the NOI](#)
- [Materials Generation Tool](#)
- Find your County Profile: [Mega Data Collection Project](#)



Additional Resources

- [Subpart 11 of Part 115](#)
- [MMP FAQ](#)
- [MMP Toolbox](#)
- [Managing and Transforming Waste Streams: A Tool for Communities | US EPA](#)
- [MRC Sample Timeline](#)



PLANNING HUB

MMP : [MMP Toolbox](#)



Toolbox

Additional Web Resources



Example Agreements



Example Ordinances



Planning Committee



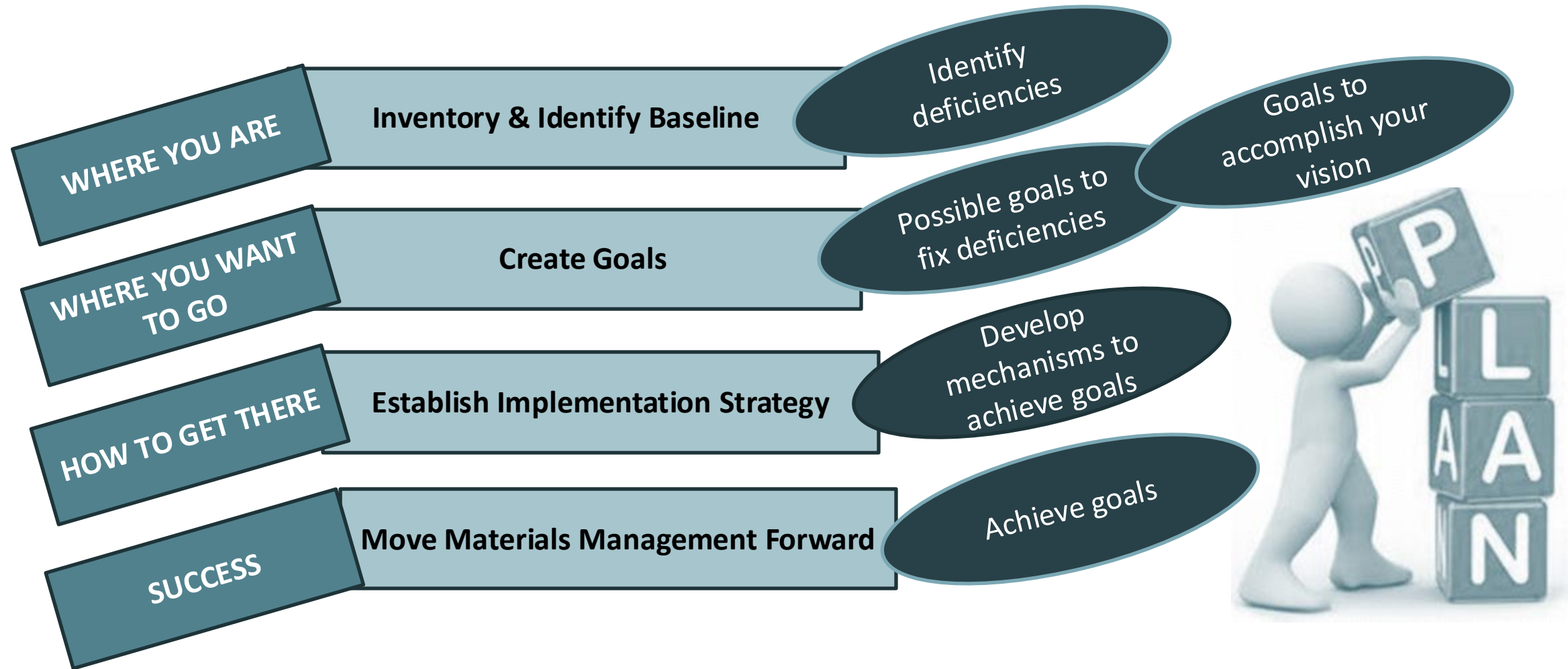
Recycling Guides



Worksheets and Info Pages



MMP OVERVIEW



Planning Area Profile

- ✓ Population
- ✓ Generation
- ✓ Materials Management Infrastructure & Systems
 - ✓ Inventory of all facilities
 - ✓ Hauler Service Providers
 - ✓ Other Collection Events
- ✓ MSW Recycling Rate

Materials Management Goals

- ✓ Diversion of Organics & Recyclables from Disposal
- ✓ Benchmark Recycling Standards
- ✓ Implementation Strategy

Mechanisms

- ✓ Funding and Enforcement
- ✓ Responsible Parties
- ✓ Siting Process

Administration

- ✓ Responsible Parties



MMP Format: Materials Management Goals

Section Two: Goals

Include **measurable, objective, and specific goals** for the planning area for solid waste diversion from disposal areas, including, but not limited to, the municipal solid waste recycling rate goal (30 percent recycling rate by 2029; ultimately reaching a 45 percent recycling rate), the benchmark recycling standards, and the material utilization and reduction activities identified by the MMP.

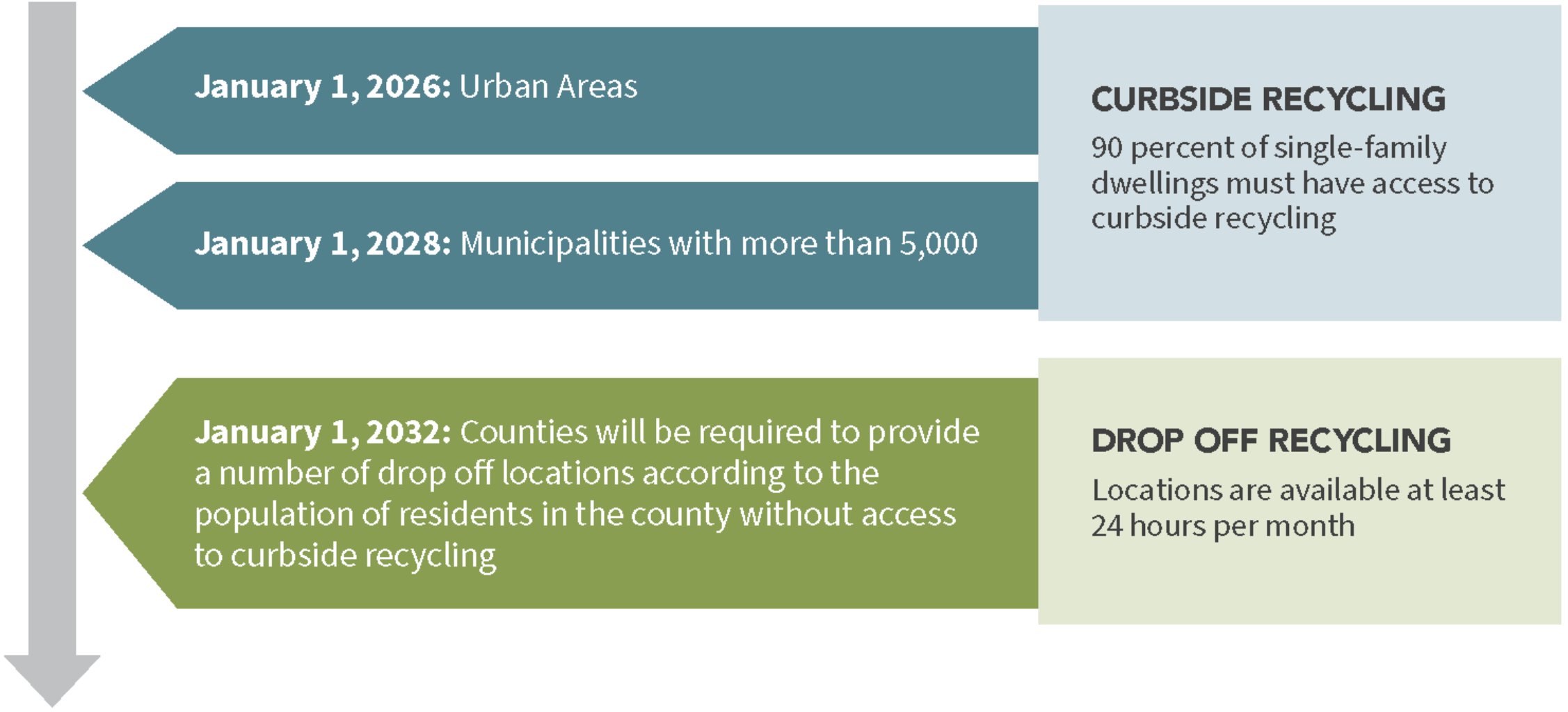
Include an implementation strategy for the county to **demonstrate progress** toward or meet the materials management goals by the time of the 5-year MMP review.

MMP Format: Implementation Strategy

The implementation strategy shall include, but is not limited to, the following:

- A description of how the **minimum access requirements** (i.e. “benchmark recycling standards”) will be met. Specify a recommended minimum level of recycling service that incorporates the **access** requirements of the benchmark recycling standards.

Benchmark Recycling Standards



January 1, 2026: Urban Areas

January 1, 2028: Municipalities with more than 5,000

January 1, 2032: Counties will be required to provide a number of drop off locations according to the population of residents in the county without access to curbside recycling

CURBSIDE RECYCLING

90 percent of single-family dwellings must have access to curbside recycling

DROP OFF RECYCLING

Locations are available at least 24 hours per month

MMP Format: Implementation Strategy

The implementation strategy shall include, but is not limited to, the following:

- How progress will be made to
 - Reduce the amount of **organic material** being disposed of, through food waste reduction, composting, and anaerobic digestion.
 - Reduce the amount of **recyclable materials** being disposed of, through increased recycling, including expanding convenient access, and recycling at single and multifamily dwellings, businesses, and institutions.

MMP Format: Implementation Strategy

The implementation strategy shall include, but is not limited to, the following:

- An MMP **may include** management plans for debris from environmental damage, for debris from disasters, or for **other materials**, such as construction or demolition waste, not otherwise required to be covered by an MMP. A management plan for debris from disasters in an MMP may include recommendations for incorporation of disaster debris management plans into municipal, county, or regional emergency management plans.

MMP Format: Implementation Strategy

The implementation strategy shall include, but is not limited to, the following:

- A description of the **resources needed** for meeting the materials management goals and how the development of necessary materials utilization facilities and activities will be promoted.
- Describe the **education and outreach** programs necessary for residents and businesses in the planning area to meet the objectives.
- A **timetable** for implementation.

MMP Format: Materials Management Goals

Implementation Strategy:

Goal 1

- Description:
- Resources Needed:
- Education and Outreach Programs:
- Implementation Timetable:

+ *Responsible Party:*

+ *Action Steps:*

Specific

S

Measurable

M

Attainable

A

Relevant

R

Timebound

T

Inclusive

I

Equitable

E

STRATEGIC	Reflects an important dimension of what your organization seeks to accomplish (programmatic or capacity-building priorities).
MEASURABLE	Includes standards by which reasonable people can agree on whether the goal has been met (by numbers or defined qualities).
AMBITIOUS/ ATTAINABLE	Challenging enough that achievement would mean significant progress—a “stretch” for the organization.
REALISTIC	Not so challenging as to indicate lack of thought about resources, capacity, or execution; possible to track and worth the time and energy to do so.
TIME-BOUND	Includes a clear deadline.
INCLUSIVE	Brings traditionally marginalized people—particularly those most impacted—into processes, activities, and decision/policy-making in a way that shares power.
EQUITABLE	Seeks to address systemic injustice, inequity, or oppression.

Goals & Actionable Objectives

GOALS

- Provide direction/vision of where you want to be in future
- Doesn't specify how it will be accomplished; often intangible
- Long term outcomes
- Qualitative – express desired outcome without specific metrics

OBJECTIVES

- Actions that support the goal
- Timebound, measurable outcomes
- Short-term focus – breaks down larger goal into smaller, manageable steps
- Quantitative – include specific metrics & criteria to track progress

Example

GOALS
INDICATE
DIRECTION



Increase School Recycling

OBJECTIVES
SHOW
PROGRESS



- Increase awareness of the WHY
 - ✓ Met with school administration
 - ✓ Held school assembly(ies)



- Determine starting point & progress
 - ✓ Surveyed materials needing managed
 - ✓ Surveyed progress at 6 months & 1 year



- Design a best program for the school
 - ✓ Created GreenTeam
 - ✓ Determined types of materials, space needed, education
 - ✓ Add to School District solid waste/recycling contract

Overarching Recycling Goals

- Ongoing education to improve quality and quantity of recyclables
- Increase support from local officials
- Engage community stakeholders
- Develop sustainable funding mechanisms
- Collaborate with service providers

Goal: Curbside Recycling

Why: *Benchmark Recycling Standard Requirement for many municipalities*

- Universal access
- Outreach and education
- Carts versus bins
- Adequate annual budget
 - Replacement carts
 - Education
 - Maintenance
- Looks different with each community



Goal: Drop-Off Recycling

Why: *Benchmark Recycling Standard Requirement*



- Access & infrastructure will look different with each community & program
- Hub and spoke access model
- Contamination management:
 - Staffed
 - Fenced
 - Cameras
 - Anti litter ordinance posted
- Adequate collection containers
 - Collection capacity
 - Contamination from weather
 - Bulk items
 - Etc.

Goal: Multi-Family Recycling

Why: Consider this equitable service to your residential population

- Consider a multi-family recycling ordinance
 - Ex. City of Ferndale
- Engage EARLY & OFTEN with property owners, management companies, service providers & tenants
 - Consider diverse populations & transcreating materials



- *Access & infrastructure may look different for each housing structure*
- *Often multi-family services are provided by private sector*

Goal: Commercial Recycling

- Have a plan for gathering data & metrics from commercial sector
- Consider a commercial recycling access ordinance
- Engage EARLY & OFTEN with property owners, management companies, service providers & tenants
 - Encourage a green team
 - Provide signage and education



- *Access & infrastructure may look different for each commercial building*
- *Often commercial hauling services are provided by private sector*

Environmental Certifications for Commercial Sector

**Goal: Increase the
number of certified
buildings or organizations
in your area.**



Goal: Comprehensive Drop-Off Sites & CHaRMs

Why: *Permanent & event-based collection sites for specialty materials make recycling more accessible & convenient.*

- Open permanent drop-off sites
 - Consider hub and spoke model
- 3C's: Comprehensive; Convenient; Cost-effective
- Hold CHaRM event(s) each year
- Consider offering access to site and/or events outside your area for a fee
- Reducing contamination
 - Staffing sites
 - Adequate signage
- Increase types of materials collected
 - E-waste, batteries, paint, tires, mattresses, scrap metal, plastic film, food waste, bulky rigid, glass, wood, etc



Goal: Material Specific Programs

- HHW
- Textiles
- E-waste
- Scrap tires
- Consumer batteries
- Plastic bags & film
- EPS
- Appliance & white goods
- Mattresses
- Glass
- Boat/marina plastic
- C&D

Strategies:

- ✓ 3C's: Comprehensive; Convenient; Cost-effective
- ✓ Staffed sites & events
- ✓ Consistent outreach
- ✓ Offer participation access to outside your jurisdiction for a fee

Resources:

- ✓ Extended producer responsibility resources
- ✓ Potential grants
- ✓ End market & manufacturer resources available
- ✓ Michigan based solutions

Goal: School Recycling

- **Contracting** for district level solid waste service and recycling
- **Establish Green Teams** to improve engagement and participation
- **Waste Audits** to establish a baseline and understand needs/cost savings
- **Curriculum** to educate about and encourage participation
- **Infrastructure** to support collection
 - Classroom containers for paper, bottles, and cans
 - Cafeteria containers for recycling, food waste, or food rescue "share table"
- **Low/Zero Waste school events**
 - Reusables in the classroom and cafeteria
 - Recycling and sporting events



Goal: School Recycling

Goal areas	Objectives
Contracting	• Get recycling included on the district level for a solid waste and recycling contract
Establish Green Team	• Most often long-term success occurs when efforts led by school and/or district administration • Involves representation from all divisions – custodial, teachers, cafeteria, students, admin, parents, etc.
Waste Audit by School	• Can't manage what you don't measure • Establish a baseline
Classroom Recycling	• Papers and containers
Cafeteria Recycling	• Collection containers • Consider contamination; provide for food waste ; provide for food rescue
Zero or Low Waste School Events	• Encourage/Require reusables within the classroom, cafeteria • Encourage/Require recycling at sport events • Make it part of the school culture
Decrease Food Waste in Schools	Encourage schools to commit to reducing food waste by incorporating food waste into curriculum, implementing programs and food scrap collection in the cafeteria, tracking food waste, donating excess food, participating in 10 Cents a Meal and participating in Michigan Green Schools.

State of Michigan EGLE Green Schools Certification

**Goal: Increase the
number of Certified
Green Schools in
your Districts.**



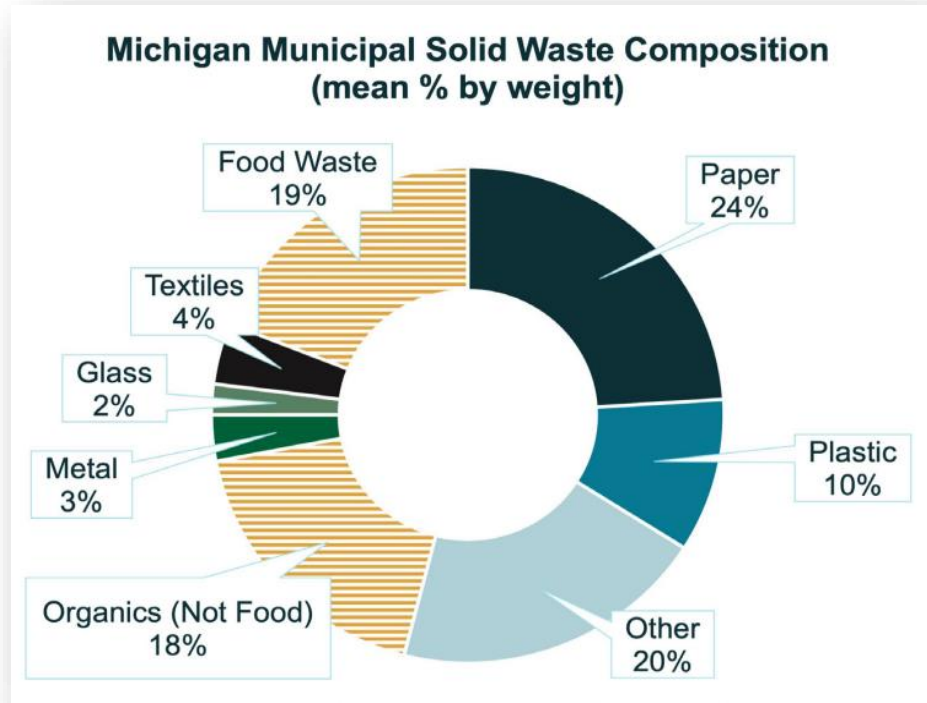
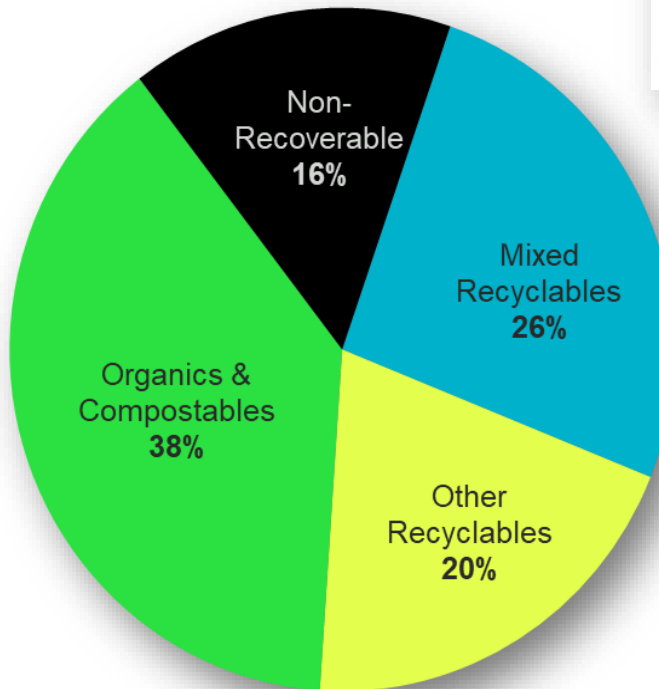
- **Michigan Green School Status:** 10-14 activities
- **Michigan Emerald School:** 15-19 activities
- **Michigan Evergreen School:** 20 or more activities

michigan.gov/egle/public/egle-classroom/michigan-green-schools

Goal: Encourage Waste Reduction

Why? Reduction is the top of the waste hierarchy.

- The amount of waste generated per person in Michigan = **4.64 lbs/pp/day**
(national average of 4.9 lbs./pp/day)
- Factors:
 - Planned obsolescence
 - Overconsumption
 - Fast fashion
 - Packaging
 - Disposables
 - Food waste



Activity

- What **recycling goals** do you have in mind for your area?



Setting Organics/Food Waste Reduction Goals



SUSTAINABLE FOOD MANAGEMENT



Examples of Food Waste Reduction/Diversion Programs

- Food Waste education, outreach & prevention
- Food Rescue for donation
- Upcycling or value-add operations
- Food waste/food scrap collection program through municipalities or private haulers
- Food waste/scraps curbside programs
- Food waste/scraps Drop-off sites
- Support for Backyard/Neighborhood Composting
- Yard waste facilities expanding to include food waste
- School food waste reduction programs



County Actions for Food Waste Reduction

Understanding the current food waste & reduction landscape in your county

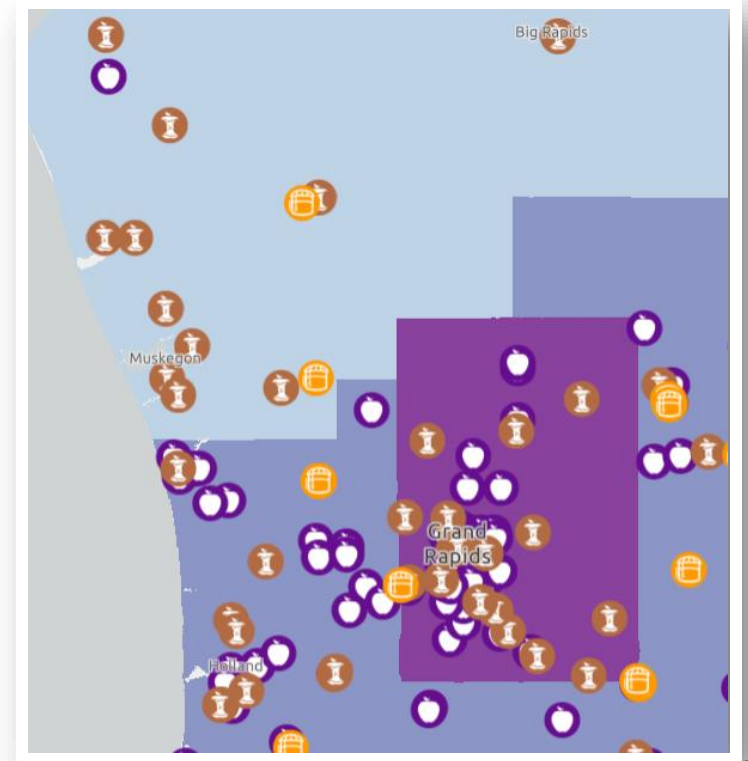
Why: *Identify existing food waste reduction/diversion efforts to make a clear case for fulfillment of gaps and support of existing programs, to appropriately tailor future interventions, and to raise awareness on the scale of the problem.*

Determine county's baseline of waste and costs

Use tools offered by the NRDC and the EPA to understand potential residential, industrial, commercial, and institutional baseline food waste. (See resource links)

Understand the capacity and landscape of current food rescue & organics recycling

- Food waste reduction efforts (composters, digesters, food rescues, food policy councils, etc.)
- Yard waste collection sites that will accept food scraps and/or can be modified easily to accept food scraps
- Food scrap collection (curbside and drop off)
- Municipality level priorities and initiatives



[Excess Food Opportunities Map | US EPA](#)

Food Waste Reduction Goal: Outlining Trackable Metrics

- **Set short term and long-term targets** that focus on:
 - Food waste reduction at the source
 - Increasing food rescue/food donation
 - Increasing food scrap recycling
- **Develop a plan for ongoing assessment of progress toward goals.**

Example target metric areas:

- Residential
- Commercial
- County
- Waste Diversion Rate
- Tonnage of Food Waste Collected
- Greenhouse Gas Emission Reductions
- Cost Savings
- Food Rescue metrics
- Composting Outputs



Food Waste Reduction Goal: Program Support & Development

***Why:** Setting goals to support new or existing initiatives can **maximize impact of food waste reduction efforts** and address the gaps identified in your food waste landscape analysis.*

- Lead by example (Walk the walk!)
- Prevent food waste in commercial settings
- Increase capacity for food scrap collection
- Decrease food waste in schools
- Support innovative technologies
- See the next slide for examples



Food Waste Reduction Goal: Developing and Supporting Programs

Goal areas	Objectives
Lead by example Walk the walk!	• Add existing information, best practices & food waste reduction efforts to the County website • Create strategies to reduce waste and collect food scraps at County events and properties • Adopt a county-wide color/shape/signage food waste reduction scheme
Prevent food waste in commercial settings	• Recognize and promote businesses who adopt food waste reduction practices • Create a program for large food waste generators to track, report and divert food waste • Engage businesses and provide technical assistance to prevent and reduce food waste
Increase capacity for food scrap collection	• Initiate the development of composting sites, digesters or other food waste reduction sites, if needed • Provide municipalities with information related to curbside food scrap collection and drop off programs
Decrease food waste in schools	Encourage schools to commit to reducing food waste by incorporating food waste into curriculum, implementing programs and food scrap collection in the cafeteria, tracking food waste, donating food, participating in 10 Cents a Meal and participating in Michigan Green Schools.
Support innovative technologies	Consider the adoption of or pilots to test technological approaches including: apps and digital marketplaces, composting and aerobic digestion machines, upcycling into value-added food or non-food products, smart bins and robotic food sorting/transporting systems

Food Waste Reduction Goal: Partnerships & Community Engagement

***Why:** Networks, partnerships, and community engagement can help determine MMP organics goals focus areas for your county, facilitate communication, develop innovative solutions, generate buy-in and support from community members and businesses, and promote a more comprehensive approach.*

- Engage the community
- Increase partnerships and regional collaboration
- Ensure food waste management services are available to all communities
- Support municipalities
- See the next slide for examples



Food Waste Reduction Goal:

Building partnerships; Engaging and supporting the community

Goal areas	Objectives
Engage the community	• Public education campaigns • Events, workshops, and social media targeting households, businesses, schools, or community groups • Encourage community discussion and feedback
Increase partnerships and regional collaboration	• Partner with local municipalities, businesses, and nonprofits • Apply for State and federal grants open to government entities on behalf of local municipalities, businesses and nonprofits based in the county to support efforts • Explore joint compost facility infrastructure with neighboring counties to reduce costs • Share information and collaborate with other counties with similar goals and initiatives
Ensure food waste management services are available to all communities	Provide targeted outreach and financial assistance for residents and food pantries who may face barriers to participation
Support municipalities	• Share the Food Waste Reduction Template for municipalities • Share best practices from other communities for municipalities looking to enhance food waste reduction efforts

Food Waste Resources

- [County and CVT Food Waste Reduction Template](#)
- [EGL E - Food Waste and Recovery](#)
- [EGL E - Composting](#)
 - [EGL E Composting Facilities FAQ](#)
 - [Commercial Composting registration flowchart](#)
- [EGL E Map of Sites](#)
 - [Organics Map — NEXTCYCLE MICHIGAN](#)
- [Excess Food Opportunities Map | US EPA](#)
- [Michigan Food Waste Roadmap](#)
- [NRDC: Tackling Food Waste in Cities](#)
- [Waste Reduction Model | US EPA](#)
- [Blueprint to Zero Food Waste in Southfield, MI](#)
- [MDARD - Food Donation Guidelines for businesses](#)
- [EGL E - School Resources for composting](#)
- [MDE - Solutions to Reduce Food Waste in Schools](#)
- [MRC - Expanding Composting from Yard Debris to Wasted Food](#)
- [Expanding Composting Operations: City of Ann Arbor's Green and Food Waste \(NextCycle\)](#)

Activity

- What **food waste/organics goals** do you have in mind for your area?



Goal: Sustainable Mechanisms: Ordinances, Agreements, & Contracts

Why: Ongoing policy, contracts, and partnerships to implement successful programs is critical to long term materials management.

- Establish service requirements
- Create fair/consistent operating environment for haulers
 - Hours, routing, etc.
- License haulers
- Opportunity for data collection & metrics gathering
- Authorities provide shared services
 - Potential improved services and cost sharing
- Provide single hauler within a service area
- Identify metrics and data expectations
- Requirement for material flow
- **AND MORE!**



Goal: Sustainable Funding Mechanisms

Why: Ongoing funding to implement, support, and improve programs is critical to long term materials management.

- **General Fund Appropriation**
- **Landfill Surcharge and/or Disposal Facility Surcharge**
- **Community Host Agreement**
- **Franchising/Licensing Fee**
- **PA185** – Public Works Assessment on local parcels
- **PA69** – \$25/year surcharge on residential; voter approval can add commercial up to \$50/year
- **Voter Approved Millage** – Millage for services by vote of residents.
- **Fee** – Household fee collected via property tax by vote of residents to cover costs for specific services.
- **Operating revenue** - Charging a fee for services that offsets or completely covers the cost for those services.



Goal: Provide Ongoing Education and Outreach

Why: E&O is critical to ensuring materials are managed properly, which reduces contamination and increases materials diverted from landfill.

- **Reduce material contamination**
 - Mailers, cart monitoring, top issue mailers
 - Increased value of materials in the local economy
- **Increase education to residents and stakeholders**
 - Provide online and mailed information, include contact information
 - Improve participation and set out
 - Increase confidence about benefits, rules, and impacts
- **Know your target audience**
 - Provide culturally relevant materials
 - Be inclusive, focus on desired behaviors
- **Make recycling part of your culture**
 - Where you live, work, and play
 - It is a utility and a public service



Goal: Adopt & co-brand statewide education campaign

Know It Before You Throw It

Public Education Campaign

- Join at RecyclingRaccoons.org.



EGLE Recycling Raccoons Community Education Toolkit

Community Toolkit

Help us spread the word and help Michiganders become better recyclers!

- Promote better recycling within your community.
- Campaign materials for communities to share.
- Opportunity to co-brand with EGLE and the Recycling Raccoons.
- Items consist of video, stickers, postcards, social media materials, newsletter graphics and more!
- Join at **RecyclingRaccoons.org**.





Campaign Goals

Primary: Improve the **quality** of Michigan recycling.

Secondary: Increase the **quantity** of Michigan recycling.

Communication Goals

- Build energy around getting better at recycling.
- Educate the state about the rules.
- Communicate the consequences of not knowing the rules.
- Increase confidence.
- Direct people to local authority.



Campaign is attention grabbing, educational and memorable

- Exceptional recall – 45% – of the campaign across the entire state and among all demographic groups.
- People aren't just remembering the campaign, once they've seen it 4 in 5 people report taking action and changing their recycling habits for the better.
- Know It Before You Throw It with the Recycling Raccoon Squad receives high marks from Michiganders for clarity of rules (71%), providing new information (67%) and increasing consumer confidence (65%).

READY TO BECOME A MEMBER OF THE SQUAD?

Community Toolkit

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Goal: Education and Outreach

85% of Americans strongly believe in RECYCLING, according to The Recycling Partnership

Goal areas	Objectives
Reduce recycling contamination	• Higher value of recyclables
Increase education to residents	• Increase set out; increase participation • Higher yield of recyclables • Increases confidence about benefits, practices, impacts • Be sure to provide contact information for questions
Know your target audience	• Focus on DESIRED behaviors • Be inclusive in your messaging
Make recycling part of your culture	• It's something we do • Recycle where we live, work, play • It's a utility, public service, amenity • Walk the talk

Goal: Create Disaster Debris & Emergency Waste Management Plan

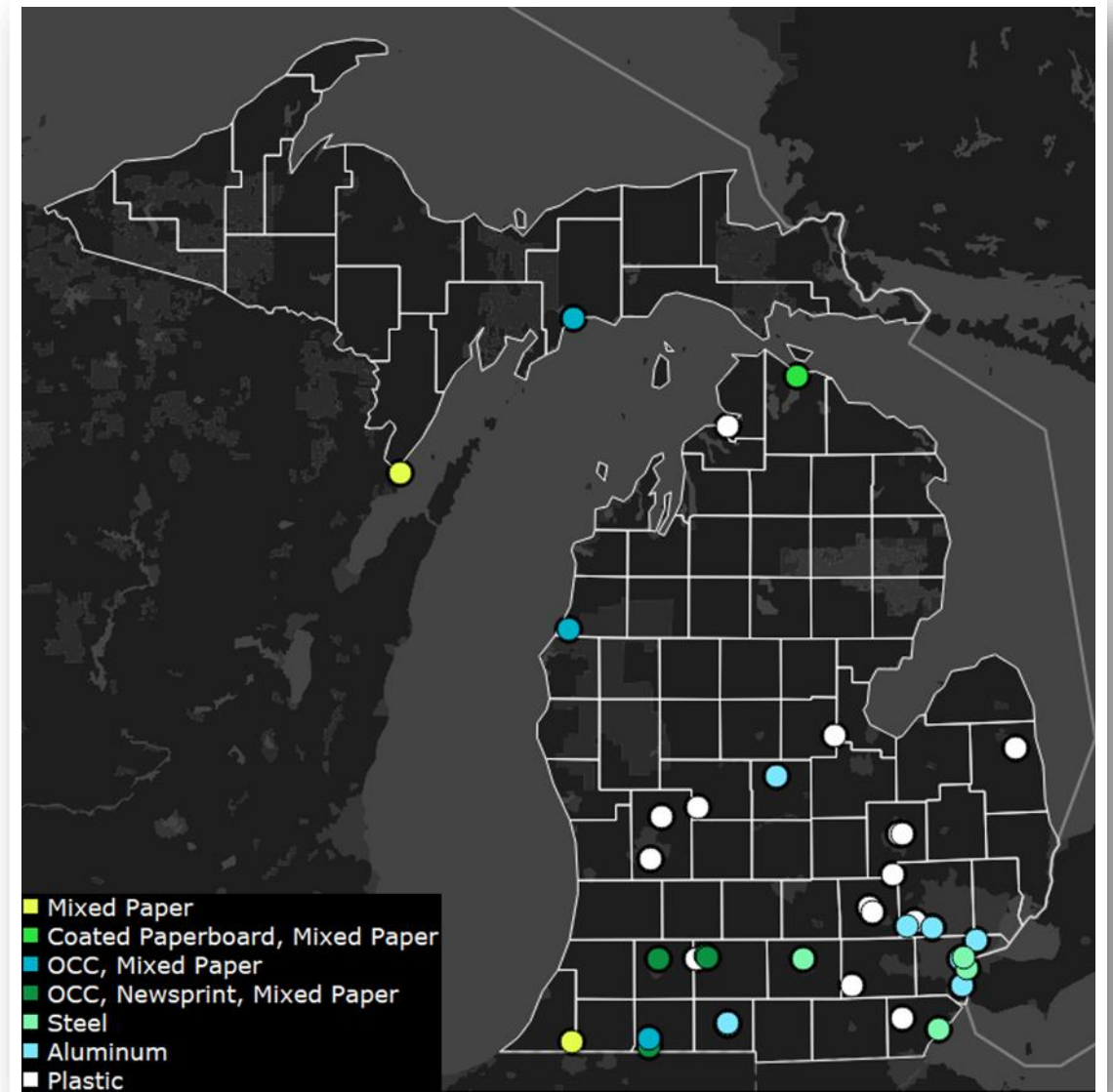
Why: Effective disaster waste management is crucial to community resilience after storms, floods, other natural disasters and health and pandemics.

- Consider the waste hierarchy
 - Opportunities for material reuse & diversion when natural disasters happen
 - Review and update biannually
- Form partnerships
 - Back up options
 - Resource sharing between neighboring communities
- Comply with public health and environmental regulations



Goal: Support Local End Markets

- Work with your MRF, broker, etc., to ensure your recyclables go to as many end markets in Michigan as possible.
- Strengthening end-markets helps ensure materials collected for recycling are reused in manufacturing.
- Launch an incentive program to support local businesses using recycled content in manufacturing or products.



Goal: Monitoring & Evaluation

Why: You can't manage what you don't measure.

- **Identify key metrics and performance indicators**
 - **Recycling Rate** = % recycled or composted
 - **Diversion Rate** = % diverted from landfill
 - **Participation Rate** = Number of homes that participate
 - **Set-Out Rate** = Number of carts on the curb
 - **Capture Rate** = Amount of recyclables found in recycling vs trash
 - **Contamination Rate** = Amount of trash in recycling stream
 - **Cost Per Ton**
- *Assess equitable and inclusive access to services*
- *Assess your baseline*
- *Ongoing data collection*



$$\text{RECYCLING RATE} = \frac{\text{Total tons MSW Recycled and Composted}}{\text{Total tons of MSW Recycled, Composted, Landfilled, Incinerated}} \times 100$$

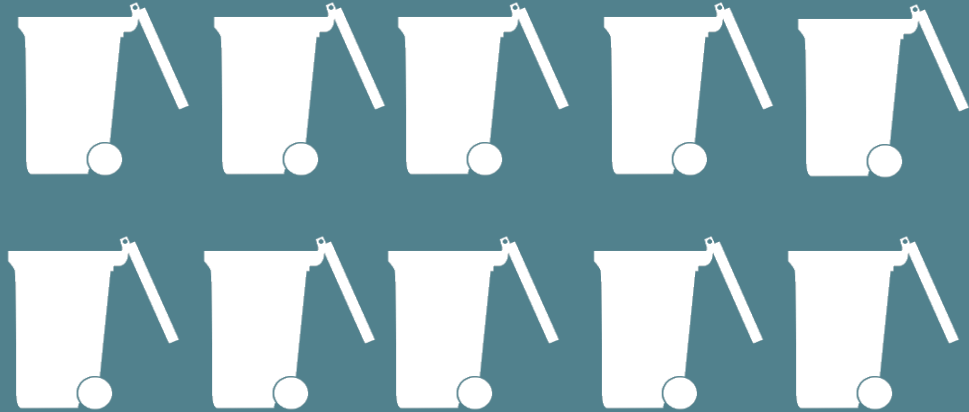
Percent of waste recycled and composted

$$\text{DIVERSION RATE} = \frac{\text{Total tons MSW Recycled, Composted, Diverted}}{\text{Total tons of MSW Recycled, Composted, Landfilled, Incinerated, Diverted}} \times 100$$

Percent of waste diverted from disposal.

Including recycling, composting, reuse, recovery, donation, co-generation, digestion, etc.

SET OUT RATE



**Average # of carts
on curb at any one time**

PARTICIPATION RATE



**Average # of homes
that participate at least
once in a month's time**

$$\text{CAPTURE RATE} = \frac{\text{Recyclables Recovered}}{\text{Recyclables Generated}}$$

HOW TO DETERMINE A HOUSEHOLD'S CAPTURE RATE

▶ A TYPICAL HOME HAS **800 lbs** OF RECYCLABLES PER YEAR



IF THERE ARE
400 lbs
OF RECYCLABLES
FOUND IN
RECYCLING



AND THE OTHER
400 lbs
OF RECYCLABLES
ARE FOUND IN
THE TRASH

THAT WOULD BE A
50% CAPTURE RATE

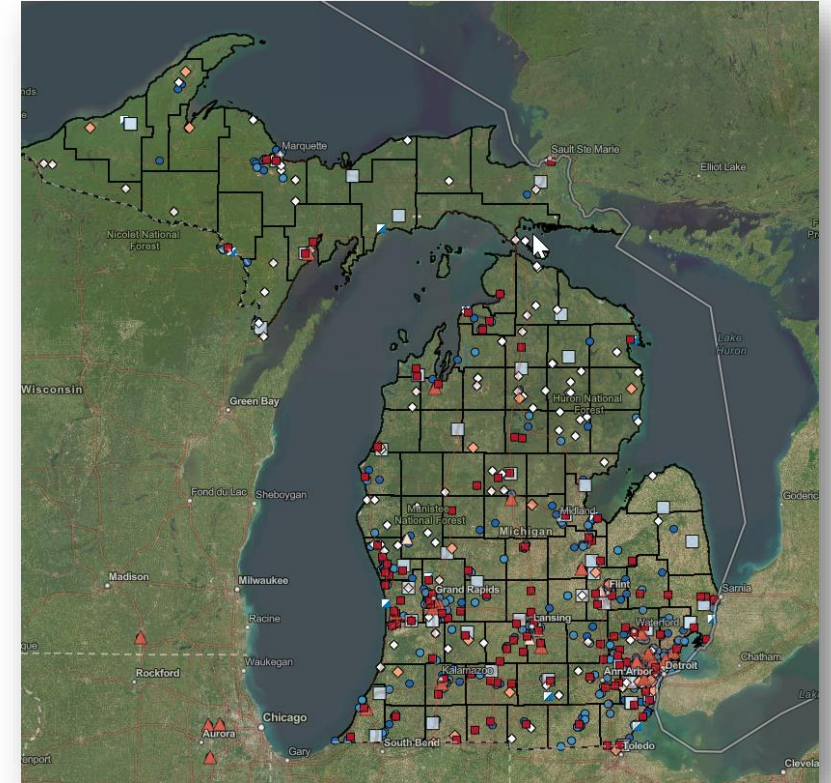
Data Collection Mechanisms and Contracting

- Include reporting requirements in your RFP's and contracts
- Talk to your generators
- Talk to your municipalities



Materials Management Facilities Map

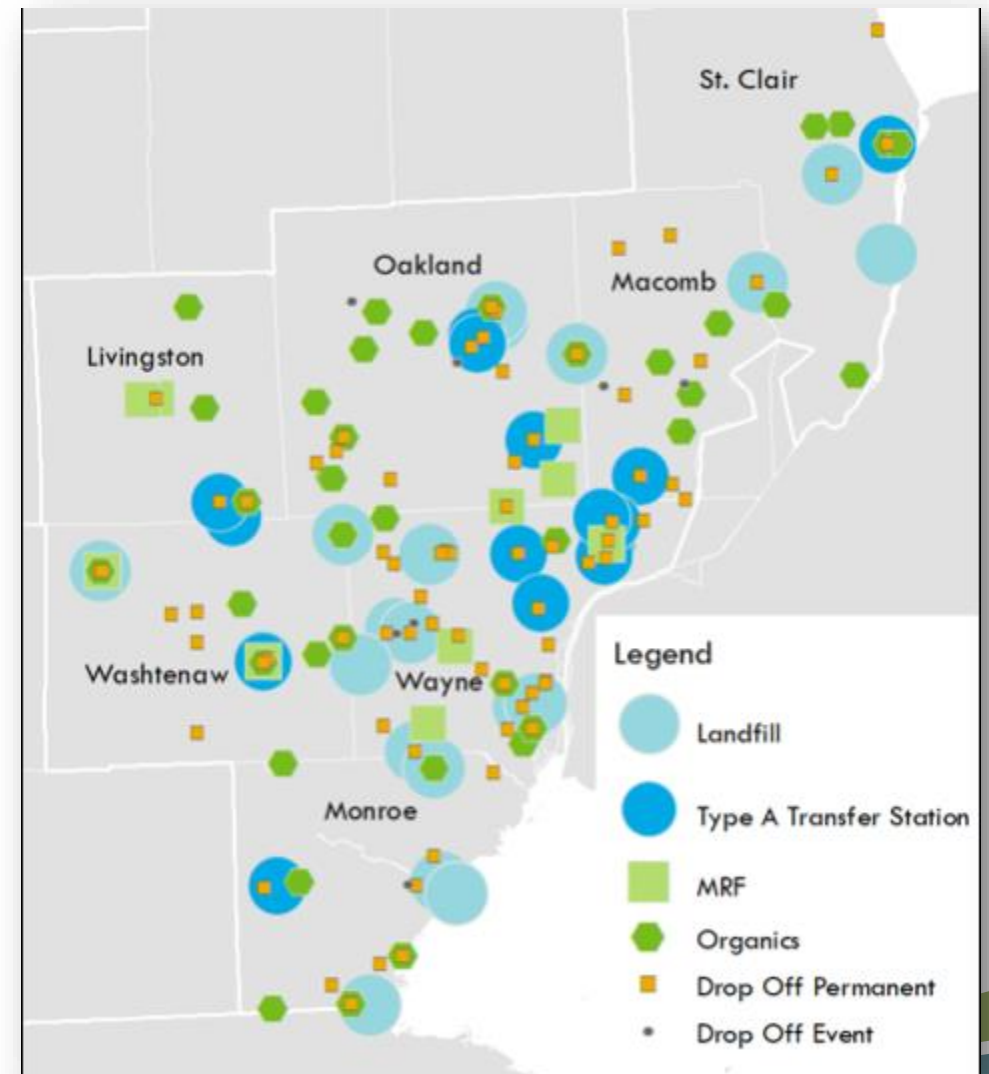
- Locations of Registered Facilities
 - Compost
 - Electronic Recyclers
 - Scrap Tire
 - Anaerobic Digesters
 - Processing and Transfer Stations
 - Landfills
 - Recycling Establishments



Michigan Materials Management Facilities (arcgis.com)

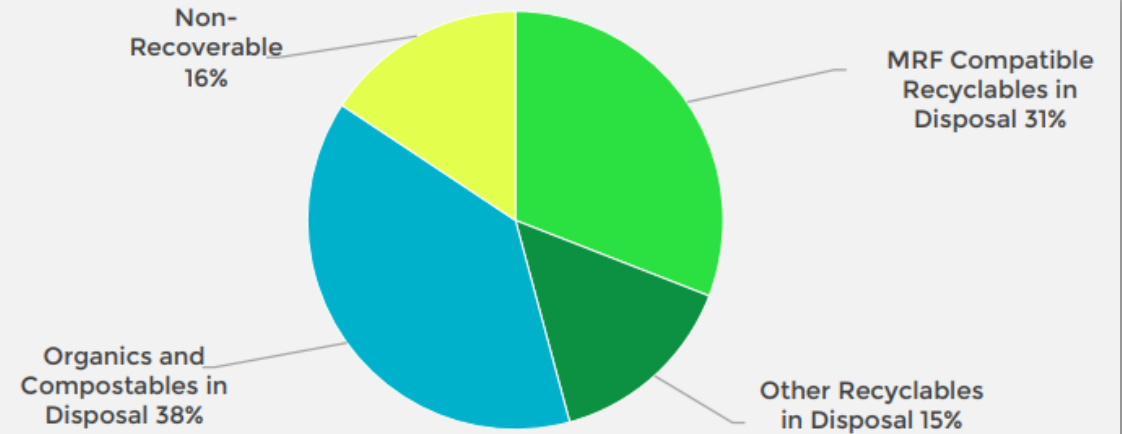
Mega Data Resources

- What will be available to counties:
 - [Final Report \(Summary\)](#)
 - [County Profiles](#)
 - Facility Lists and Maps (example provided)
 - Location and Service Connection by Facility



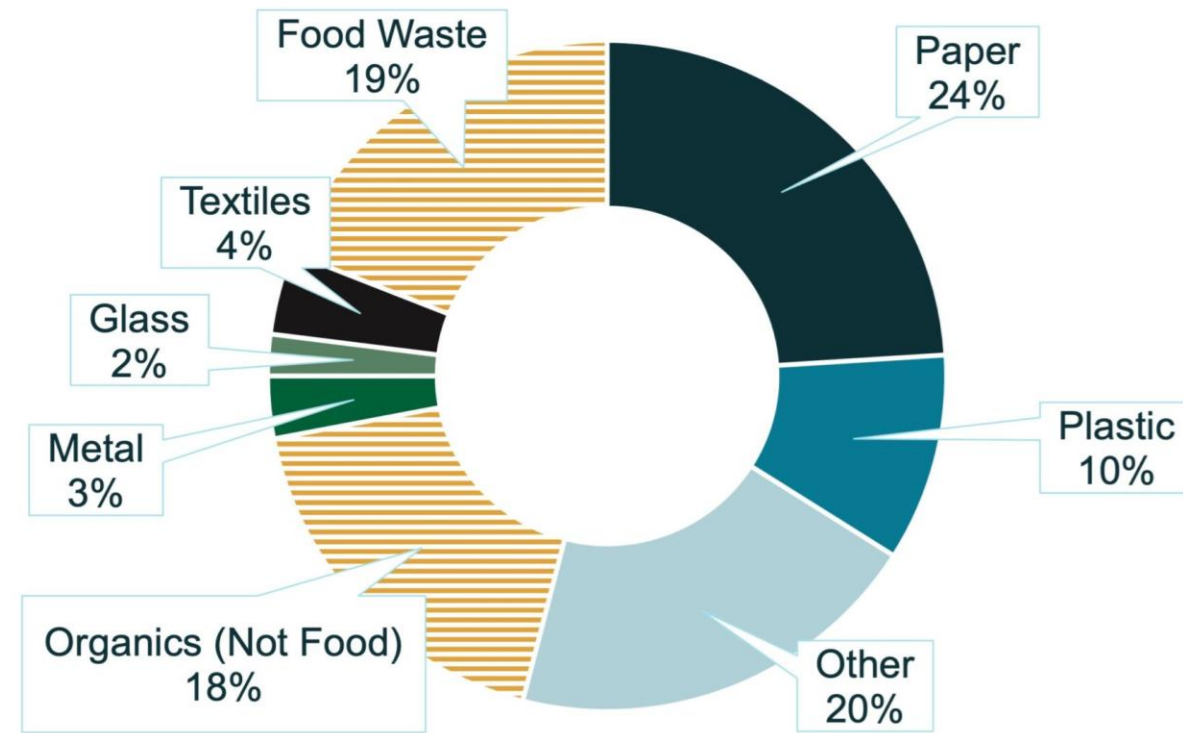
NextCycle Gap Analysis

- 2023 Gap Analysis
 - Maps
 - End market analysis
 - Regional data
 - And more



Waste Characterization Study

Michigan Municipal Solid Waste Composition
(mean % by weight)



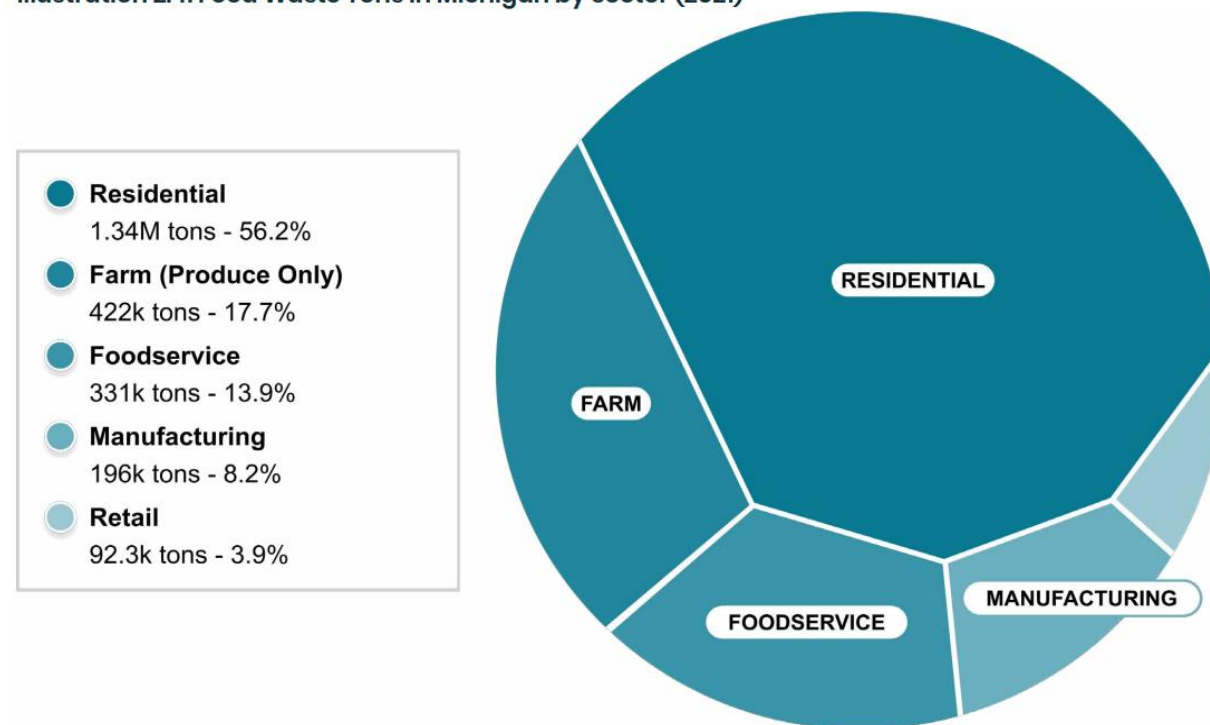
- 2024 Economic Impact Potential and Characterization of Municipal Solid Waste in Michigan
 - Diversion opportunities
 - Economic opportunities
 - Composition by
 - Weight
 - Availability valuation
 - Value per ton

Michigan Food Waste Road Map

A Plan to Reduce Food Loss and Waste in Michigan by 50 Percent

- Overview of Food Loss & Waste in Michigan
- Analysis by sector
 - Findings
 - Best Practices
 - Barriers
 - Support needed
 - Case Studies
- Gap Analysis
- Recommendations to Reduce Food Waste

Illustration 2.4: Food Waste Tons in Michigan by Sector (2021)



EPA Managing and Transforming Waste Streams



Managing and Transforming Waste Streams: A Tool for Communities

[CONTACT US](#)

SHARE



Helping Communities Plan for Less Waste

- [Learn About the Tool](#)
- [Go to the Tool](#)
- [Go to the Policy and Program Impact Estimator](#)
- [Browse Examples By Topic](#)

Waste is a valuable resource. Communities can recover the lost value of material discards by setting up systems for reuse, recycling, and composting.



<https://www.epa.gov/transforming-waste-tool>

EPA Managing and Transforming Waste Streams Tool

- Measures communities can employ to reduce waste and recover materials
- Includes example ordinances, policies, programs, contracts, outreach & technical assistance, and infrastructure development

EPA Managing and Transforming Waste Streams Tool

- Goals and Planning (ex: zero waste)
- Local Government Operations
- Curbside Collection
- Food Waste Programs
- Assistance to Businesses and Institutions
- Infrastructure and Markets
- Community Outreach and Education
- Product Stewardship
- Construction and Demolition Debris
- Disposal Restrictions or Disincentives

Goal: Program Monitoring & Evaluation

WHY? You can't manage what you don't measure.

Define Success Metrics	• Diversion rate; Recycling rate; Participation Rate; Contamination Rate; Cost-effectiveness • Align program goals with local regulations/local sustainability goals; community needs and desired amenities
Baseline Assessment	• Conduct an initial waste audit/assessment or recyclables audit • Assess current infrastructure; participation levels; public awareness • Survey public about needs/desires/interests
Establish KPIs (Key Performance Indicators)	• Diversion rate (% waste diverted from landfill) • Recycling rate (% material RECYCLED/amount material landfilled) • Contamination rate (% of non-recyclables and improperly prepared recyclables in recycling stream) • Cost per ton
Implement Regular Data Collection	• Track waste, recycling and material diverted volumes on a regular schedule (monthly, quarterly). IF using a private hauler – put this in RFP and in contract.

Goal: Program Monitoring & Evaluation - Continued

Monitor Contamination	• Bin/cart/container inspections • Contamination studies with MRFs • Target common contaminants in education/outreach efforts
Community/Participant Feedback & Engagement	• Occasional surveys/outreach to assess awareness, satisfaction & barriers to participation • Create feedback loops
Utilize Technology & Tools	• GIS mapping; Dashboard tools for monitoring • Apps for missed pickups OR education and engagement
Continuous Improvement	• Regularly review programs & progress • Pilot new approaches & programs • Update/refresh education/outreach material as needed
Benchmark & Reporting	• Reliable data is essential for measuring success and improving systems • Compare your program to regional, state or national averages • Publish reports/share data to demonstrate accountability & progress
Partner Collaboration	• Engage & bring all players to the table to share findings & promote best practices

Goal: Program Optimization

Why: Continuous improvement

- **Benchmark reporting of key metrics**
 - Regularly collect reliable data for measuring success and informing improvements
 - Compare your data to regional, state, and national averages
 - Publish reports to demonstrate accountability and progress
- **Feedback and engagement**
 - Surveys to assess awareness, satisfaction, and barriers to participation
 - Bringing stakeholders to the table to share findings and promote best practices
- **Tools and technology**
 - GIS mapping dashboards
 - Apps for missed pickups or education



Goal: Program Optimization

Goal Areas	Objective
Equitable recycling access	• Utilizing the tenets of access; outreach/education; infrastructure • Meet people & communities where they are • Increase equitable access to ALL people; in ALL housing types
Participation rate	• The average number of homes that participate at least 1x/month in the recycling program
Set out rate	• The average number of carts/bins at the curb at any one collection time
Capture rate	• The weight of recyclables collected (minus contaminants) divided by the weight of recyclables generated (or in the waste stream)
Recyclable material quality	• Restricting contamination – the wrong materials AND the correct materials improperly prepared

Goal: Adopt a Zero Waste Action Plan

Why? Envision thriving, resilient communities where waste is reduced, resources are reused, & sustainability is a shared responsibility ensuring a cleaner, healthier environment for current & future generations.

Reduce waste to landfill for your area	Metrics -- what percentage by what year
Universal curbside recycling & composting access by a certain year	- Identify a timeline for when this will happen - Universal access where appropriate
Drop-off site recycling & composting access for multi-family sector	Identify timeline for when this will happen
Infrastructure of hard-to-recycle items (e-waste, textiles, HHW, tires, bulky items)	Facilities, events, partnerships, etc
Public events and public space	Recycling & composting opportunities
Support local circular-economy initiatives	Repair cafes, tool libraries, second-hand markets, etc
Equity-based education & outreach	Engage underserved communities with culturally relevant materials & resources to participate
Sustainable purchasing policies	- Buy reusable, recyclable, compostable, low-impact - Share this with county & communities within the county

High Performing Communities

- Universal, single stream collection in curbside carts
- Local government incentivizes recycling
 - Licensing agreement to bundle services
- Consistent public engagement, education, and outreach efforts
- >400 lbs/hh/year capture rate
(national average is 357 lbs/hh/year)

Waste characterization and recovery rate studies have shown US households annually generate between 800-1,000 lbs of recyclable that could be placed in a recycling container.

Michigan Green Communities CHALLENGE

**Goal: Increase the
number of
your communities that
are CERTIFIED **Bronze**,
Silver and **Gold****



Activity

- What **other goals** do you have in mind for your county?



Activity – Make it ACTIONABLE!

- What **action steps** can you implement to support your goals?



KEY TAKEAWAYS

SMARTIE Goals and Action Steps

Measure What You Manage

Convenient, Comprehensive, Cost Effective

Ongoing Education, Funding, and Mechanisms

Do What Works For YOU

Materials Management = Desired Public Service/Utility

Thank You and Questions

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**Environment, Great Lakes, and
Energy**

800-662-9278
Michigan.gov/EGLE



Follow us at: Michigan.gov/EGLEConnect

Additional Links and Resources

- [Mega Data](#)
 - Data Collection Project
- [MMCE Grants](#)
 - 56 counties participated
 - Goal to get counties thinking about materials management and how it can benefit their county.
- [Authorization Program](#)
 - Online reporting for required and voluntary materials management facilities.