

Materials Management Planning for Building a Circular Economy

Vimala Anishetty, Ph.D.
Vice President, Fishbeck

MI Rule Part 115

- Michigan's Solid Waste Program has been updated with the passage of significant amendments to Part 115, *Solid Waste Management*, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, which became effective March 29, 2023.
- The amendments require all 83 counties in MI to replace existing Solid Waste Management Plans with new Materials Management Plans (MMPs) that focus on sustainable materials management approaches, such as recycling and composting, rather than landfilling waste.

County Responsibility

- In accordance with Part 115, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) initiated the materials management planning process as of January 8, 2024.
- Counties, Boards of Commissioners, or elected executives were given the first opportunity to assume authority over MMP development and implementation.
- If a county accepted this authority, they were required to consult with adjacent counties about the option of preparing a multi-county plan and submit a Notice of Intent (NOI) to prepare a multi-county plan or a single County Plan MMP within 180 days of the date on which the EGLE Director initiated the process (January 8, 2024).
- If a county declined this authority, they were to advise all municipalities in the county and the regional planning agency of their decision. The regional planning agency, or all the municipalities acting jointly, may assume planning responsibilities if their county declines. The NOI submittal to EGLE was due by July 6, 2024.
- In the event the county does not accept responsibility EGLE will prepare the MMP on the County's behalf.

MMP Grants

In each of the program's first three years, grant funding will be awarded as follows:

- **\$60,000** for each county within the planning area.
- An **additional \$10,000 per county** if the planning area includes more than one county.
- **\$0.50 per resident** in the planning area, up to a maximum of **600,000 residents**, based on 2020 U.S. Census data.

Materials Management Planning Committee(MMPC)

This committee is responsible for guiding the development of a Materials Management Plan (MMP) for a specific region or county.

The MMPC works with a Designated Planning Agency (DPA) to create and implement the plan. The MMP helps counties manage solid waste, recyclables, and other materials, with the goal of improving waste diversion and increasing recycling access.

Key Sections of an MMP

The MMP planning process will include the following:

- Establish and Set Priorities for the Planning Area
- Identify Types and Volumes of Waste Generated
- Identify All Materials Management Facilities and Available Capacity
- Transportation Infrastructure
- Calculate Existing Recycling Rates
- Set Materials Management Goals
- Create an Implementation Strategy
- Create Enforceable Mechanisms and Identify Responsible Parties
- Development of Needed Facilities
- Regional Incentives
- Planning and Community Meetings
- MMP Review/Public Meeting Process



Establish and Set Priorities for the Planning Area

- The first, and most critical, task in the creation of an MMP is to define a planning area and set priorities for the planning area.
- The purpose of establishing a planning area and setting priorities for it is to understand the goals, attitudes, preferences, barriers, and opportunities to create and implement an MMP in the County.
- The information collected in this task will help to understand where the County may encounter obstacles and help to develop a strategy to overcome any obstacles. It will also help to identify opportunities and potential allies to help the County achieve its goals.

Identify Types and Volumes of Waste Generated

Hard data, such as annual tons collected, disposed, and recycled will be collected from various facilities in the County.

If data collected is determined to be insufficient, modelled data based on national and state level information will be used.

Typical waste generation categories are expected to include residential, commercial, and industrial.

Non-hazardous wastes are comprised of three principal components:

- Municipal solid wastes (MSW) - is comprised of solid wastes generated by single-family residential, multi-family residential, commercial, and industrial land use.
- The industrial component of MSW is generally comprised of industrial housekeeping wastes (e.g., packaging, cafeteria and washroom waste, and office waste) and does not include ISW, such as foundry sands.
- Construction and demolition debris (CDD)



Material Management Facilities

Identify all material management facilities in the County and determine their available capacity. The MMP will include detailed facility descriptions for each identified materials management facility in the County. Material management facilities include the following:

- Transfer stations
- Solid waste landfills – Type I and Type II
- Solid waste processing and transfer facilities
- Municipal solid waste incinerators
- Materials recovery facilities
- Compost facilities
- Anaerobic digesters
- Other source separated facilities
- Innovative technology facilities

Transportation Infrastructure



Identify and describe all managed materials collection services and transportation infrastructure utilized to collect and transport managed materials within the County.

The MMP will provide a transportation infrastructure overview for all managed materials, including solid waste, recyclable/source separated materials, organics including yard clippings, food waste, etc.

Public, non-profit, and private sector companies that provide managed materials collection and disposal services will be identified.



Calculate Existing Recycling Rates

Calculate the existing recycling rate at the County by using the type and volume of managed materials data obtained, as explained in the previous sections.

Describe the type and volume of managed material in the County's waste stream which may be available for recycling programs.

Estimate how much of the available managed material is actually being recycled and diverted from landfills.

Conditions at the County which may have a positive or negative impact on recycling programs will be discussed.

Set Materials Management Goals

Materials management goals are *a measurable, objective, and specific set of goals chosen by a planning authority to increase recycling and reduce waste generation.*

EGLE's Benchmark Recycling Standards and Service Requirements will be included in the County's MMP. They are as follows:

- 2022: 90% of the single-family dwellings in urbanized areas have access to curbside recycling.
- 2025: 90% of the single-family dwellings in areas with more than 5,000 residents have access to curbside recycling.
- 2028: Communities with less than 100,000 residents have at least 1 recycling drop-off location for every 10,000 residents without curbside recycling at their dwelling.
- 2028: Communities with more than 100,000 residents have at least 1 recycling drop-off location for every 50,000 residents without curbside recycling at their dwelling.

Create an Implementation Strategy

- Create efficient and effective implementation strategies to enable the County to maximize diversion rates and recycling rates for all managed materials in the County.
- Develop action plans to accomplish increased diversion and recovery/recycling and decrease landfill disposal.
- Action plans will include strategies for education and outreach, identification of resource recovery management entities, and evaluation of market availability for collected materials.



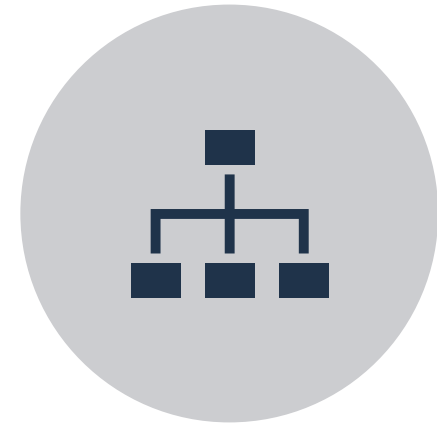
Create Enforceable Mechanisms and Identify Responsible Parties



CREATE ENFORCEABLE MECHANISMS AND ENFORCEMENT PARTIES FOR THE COUNTY'S IMPLEMENTATION OF THE NEW MMP.



ENFORCEABLE MECHANISMS COULD INCLUDE ORDINANCES, AGREEMENTS, PARTNERSHIPS, AND CONTRACTS.



IDENTIFY THE PARTIES RESPONSIBLE FOR IMPLEMENTATION OF THE NEW MMP AND DEFINE THEIR ROLES.

Develop Needed Facilities

Create a plan to develop necessary materials management facilities such as:

- Waste diversion centers
- Solid waste processing and transfer facilities
- Incinerators
- Landfills
- Material utilization facilities
- Material recovery facilities
- Compost facilities
- Anaerobic digestors
- Innovative technology facilities



Stakeholder Engagement Process

Obtaining input from stakeholders is an important part of the MMP process

Employ a collaborative process that will involve a diverse group of stakeholders including but not limited to State and local government entities, community groups and other stakeholders.

Special effort should be made to include vulnerable populations and under served communities

Communicate with stakeholders early and often

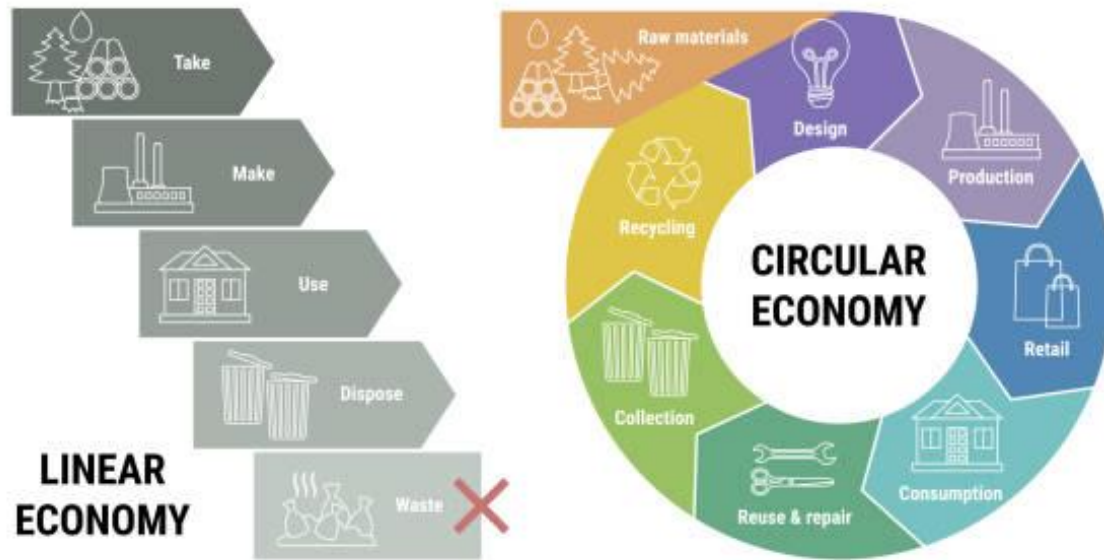


Core Goals of MMP Process

- Increase recycling rate
- Ensure universal access
- Promote organics recovery
- Improve data transparency
- Support circular economy



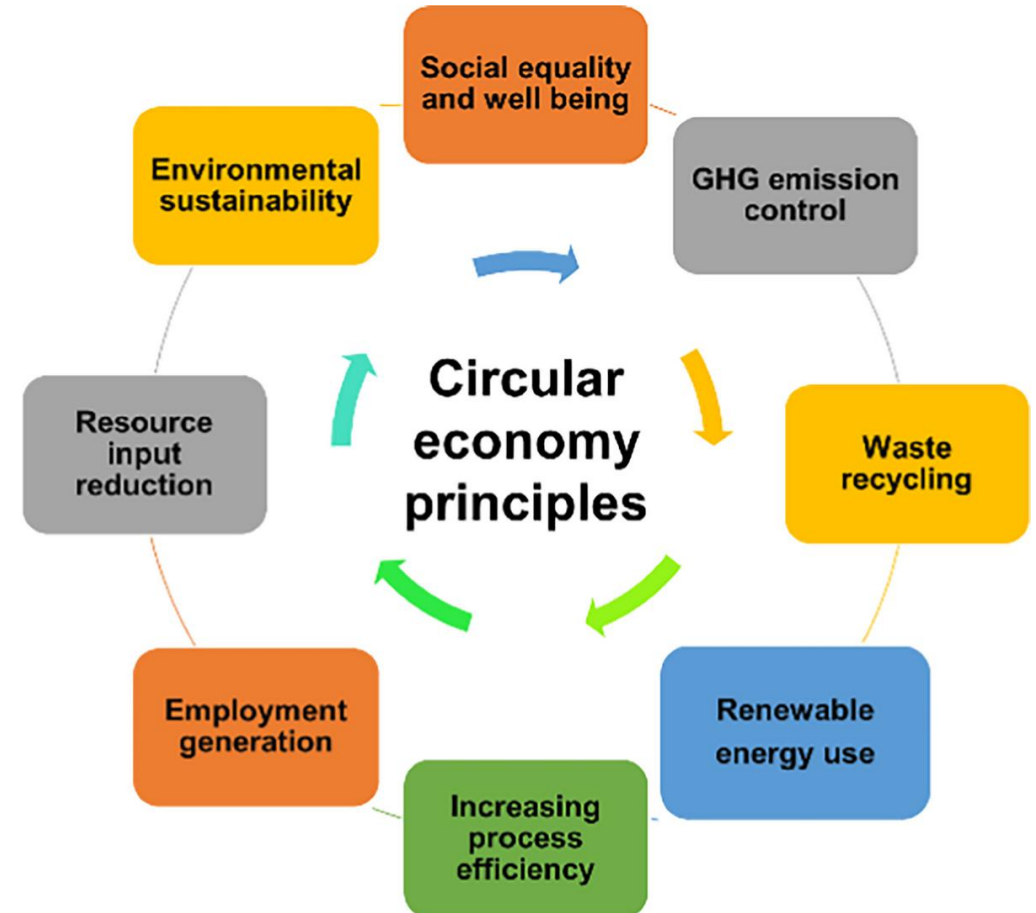
Circular (CE) Vs Linear Economy



- CE is based on principals of **reducing, reusing, recycling, and regenerating** materials and products to extend their lifecycle.
- Traditional **linear economy** follows a **take-make-dispose** approach
- CE emphasizes **closed-loop systems** where resources are recovered, refurbished, and reintegrated into the production cycle.

MMPs leads to Circular Economy

- **Infrastructure Investment:** MMPs provide funding for enhancing local recycling infrastructure, composting operations, and food waste reduction strategies.
- **Sustainable Material Management:** By requiring counties to develop specific plans, MMPs shift focus from disposal to reducing waste, maximizing, and reusing resources.



MMPs Lead to Circular Economy



Economic Innovation: Through programs like NextCycle, [EGLE](#) provides grants and technical assistance (e.g., \$5.6M in 2025) to businesses and communities developing new products from recycled materials.



Focus on Key Sectors: MMPs target high-volume waste streams, including organic waste (composting), construction materials (salvaged wood/shingles), and plastics.



Waste-to-Resource Networks: MMPs encourage connecting organizations to exchange waste, utilizing platforms like the Michigan Materials Marketplace to facilitate the buying, selling, and reusing of surplus materials.

Multi County MMPs

1. Economies of Scale

2. Shared Infrastructure & Regional Facilities

3. Improved Access to Funding

4. Consistent Policies and Programs

5. Stronger Market Development

6. Operational Flexibility and Resilience

7. Enhanced Technical Capacity

8. Supports Circular Economy Goals

Multi-county MMPs are better positioned to:

- Develop regional reuse and repair networks
- Support organics diversion at scale
- Integrate industrial, commercial, and residential material streams

Result: Stronger alignment with circular economy principles—keeping materials in use longer and reducing landfill dependency.

Single County MMP - Collaboration

Counties can keep
separate MMPs but
collaborate through:

Interlocal agreements

Joint committees

Shared services
contracts

They can collaborate
on:

Planning coordination
Shared committees,
data, and goals

Infrastructure sharing
MRFs, landfills,
compost sites

Financial collaboration
Cost-sharing
agreements, joint
grants

Governance overlays

Authorities or
councils that sit “on
top” of counties



Key Takeaways – MMPs as a Circular Economy Enabler

Michigan's Materials Management Plans (MMPs) mark a shift from waste disposal to resource management

Provide a structured, data-driven framework to increase recycling and diversion

Enable investment in infrastructure (recycling, composting, recovery facilities)

Promote policy alignment, stakeholder collaboration, and accountability

Support market development and innovation (reuse, repair, recycled materials)

Create the foundation for a regional, scalable circular economy system

Food Waste Containers



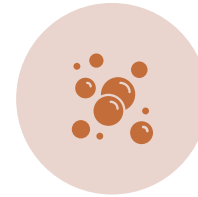
Path Forward – From Planning to Impact



Success depends on implementation, coordination, and sustained funding



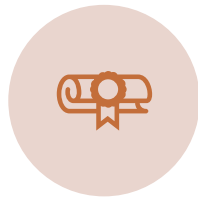
Multi-county collaboration can accelerate progress and improve efficiency



Focus on high-impact materials (organics, plastics, C&D debris)



Strengthen public-private partnerships and market connections



Continue education, outreach, and behavior change efforts



Outcome:
→ Reduced landfill dependency
→ Economic growth through material reuse
→ Resilient, circular materials system for Michigan

Thank you!
