



Network Northwest

INITIAL MMP DATA REVIEW

Data Methodology | 1

- **EGLA Annual Report of Solid Waste Landfilled in Michigan**
 - > Actual reported data on material landfilled in Michigan.
 - > Includes tonnage and county of origin.
 - > Identifies waste by type in broad categories:
 - MCW | Municipal & Commercial Waste
 - Commercial Waste, Garbage, Household Waste, Medical Waste (Regulated), Municipal Solid Waste Incinerator Ash
 - IW | Industrial Waste
 - Ashes, auto shredder residue, cement kiln dust, coal ash, food processing residuals, foundry sand, industrial waste, sludge, etc.
 - C&D | Construction & Demolition
 - Asbestos waste, construction and demolition waste, scrap wood, treated wood, wood
 - Other | Other Waste
 - Asbestos waste, contaminated soils, TENORM
 - ADC | Alternative Daily Cover
 - Chipped tires, coal or wood ash, foundry sand, sludge, contaminated soils, auto shredder residue, other approved.
 - > Includes estimated landfill capacity.
 - > Does not identify waste generated in the state and disposed elsewhere.
 - > Does not identify quantities of specific materials landfilled.

Data Methodology | 2

- **RRS MCW Characterization Model**

- > Tool to identify potential recovery opportunities in the **MCW** category by specific material type and generating sector (Single-Family Residential, Multi-Family Residential, or Commercial).
- > Developed using several waste characterization studies and capture rate studies from the past five years (post COVID) which are either specific to Michigan or the mid-western US, including the 2024 Michigan MCW Characterization study.
- > Uses aggregated data to estimate the breakdown of MCW into ~50 specific material categories by percentage.
- > Applies those percentages to the tons of landfilled waste attributed to each county, as reported to EGLE, to estimate the tons of each material landfilled in the county.
- > Uses aggregated data to determine tonnages likely generated by commercial businesses vs residents.
- > References housing data on the 2020 census to estimate tonnages likely generated by single-family residences and multi-family.

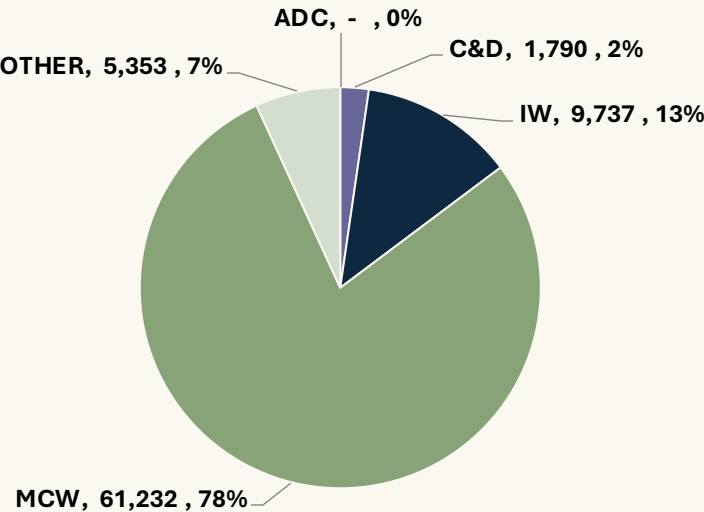
Data Methodology | 3

- **2020-2023 EGLE Mega Data Project**

- > On behalf of EGLE, RRS collected municipality-level information on waste, recycling and composting programs to estimate waste generation tonnages and waste diversion percentages for each county.
- > County profiles are the starting point for MMP development and measuring status of Benchmark Recycling Standards as defined in Part 115.

1 - EGLE Annual Landfill Report | Antrim

MICHIGAN LANDFILL WASTE GENERATED BY ANTRIM COUNTY BY TYPE IN TONS 2024

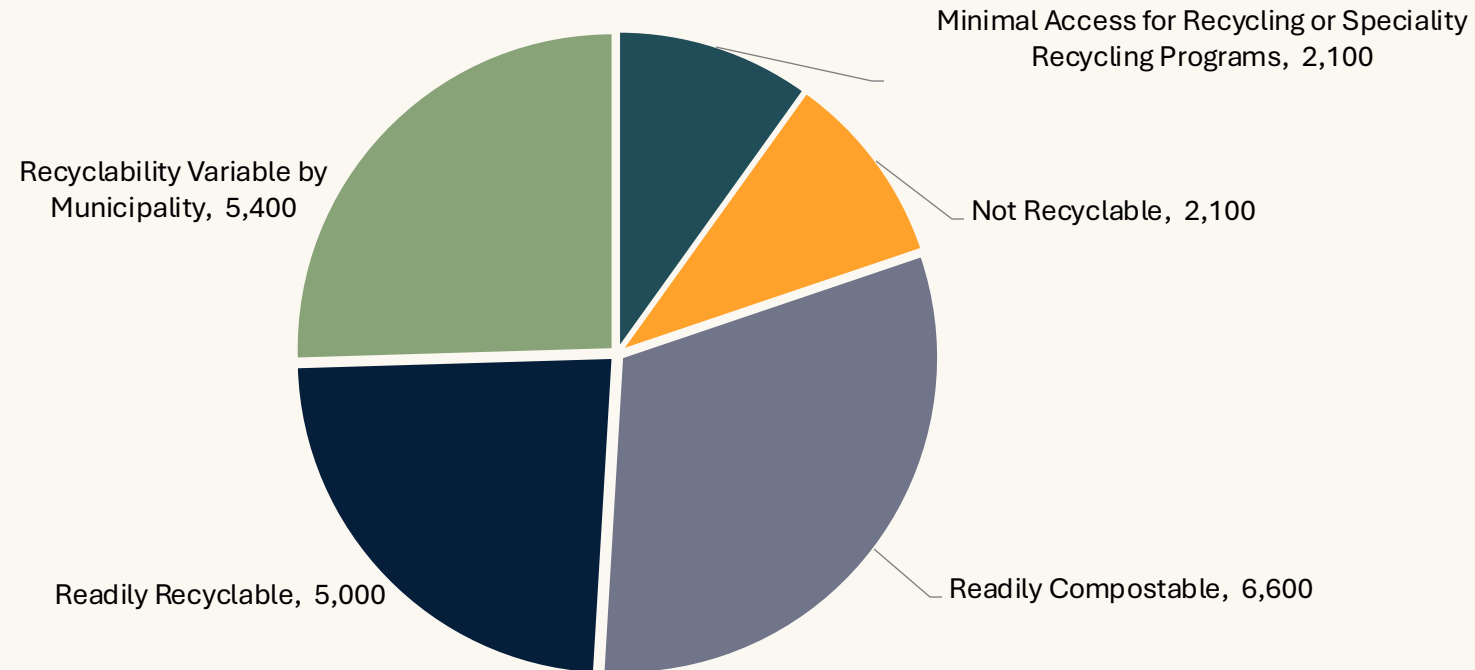


Total Tons Landfilled in MI from Each County FY 2024	Tons
Tons from Charlevoix	242,114.42
Tons from Manistee	93,033.15
Tons from Antrim	78,111.39
Tons from Wexford	58,665.15
Tons from Missaukee	29,706.13

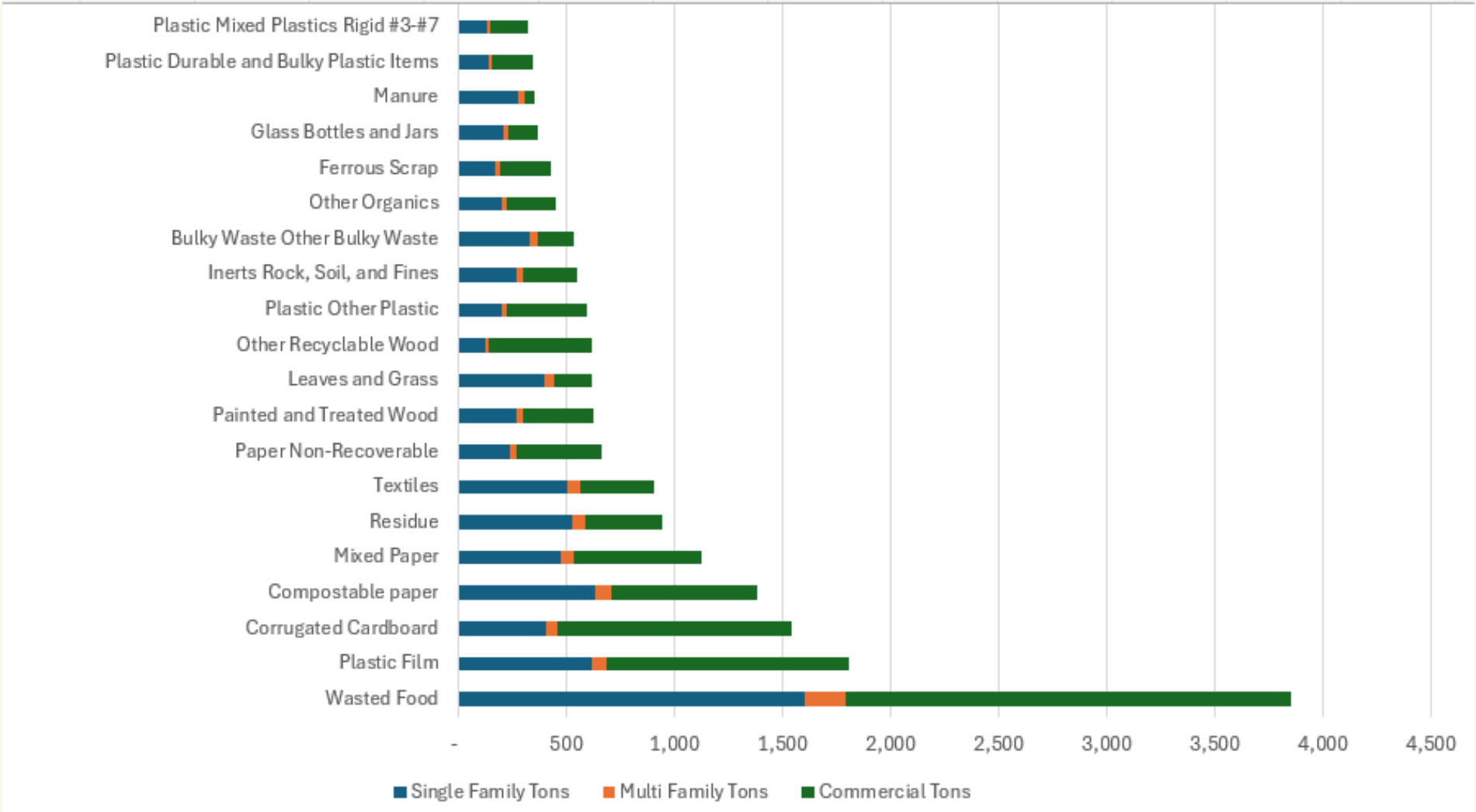
Disposal Location for Material Generated by Antrim							
Michigan Landfill Waste Generated by Antrim County by Type in Tons 2024	Tons Generated	Wexford County Landfill (Wexford County) Wexford County Landfill LLC/ GFL	City Environmental Services, Inc of Waters (Crawford County) (City Environmental Services, Inc of Water)	Montmorency-Oscoda-Alpena SWMA (Montmorency County) Montmorency-Oscoda-Alpena Solid Waste Authority	GFL North Michigan Landfill, LLC (Presque Isle County) GFL Environmental USA	Glens Sanitary Landfill (Leelanau County) Glen's Sanitary Landfill Inc / Waste Management	Whitefeather Landfill (Bay County) Republic Services
ADC	-	-	-	-	-	-	-
C&D	1,790	305	1,089	128	68	200	-
IW	9,737	-	9,357	-	-	275	105
MCW	61,232	56,132	2,230	2,013	733	117	8
OTHER	5,353	54	5,293	-	-	5	-
Grand Total	78,111	56,491	17,970	2,140	801	597	112

2 - RRS MCW Model | Antrim

LANDFILLED MCW MATERIAL RECYCLABILITY MODEL BY WEIGHT IN TONS FOR ANTRIM COUNTY 2024

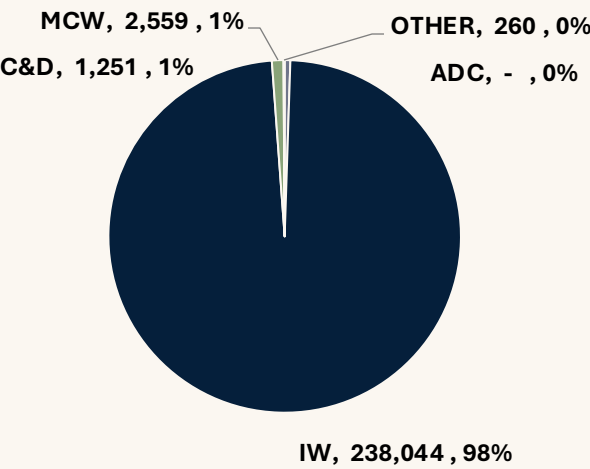


2 - RRS MCW Model | Antrim



1- EGLE Annual Landfill Report | Charlevoix

MICHIGAN LANDFILL WASTE GENERATED BY CHARLEVOIX COUNTY BY TYPE IN TONS 2024

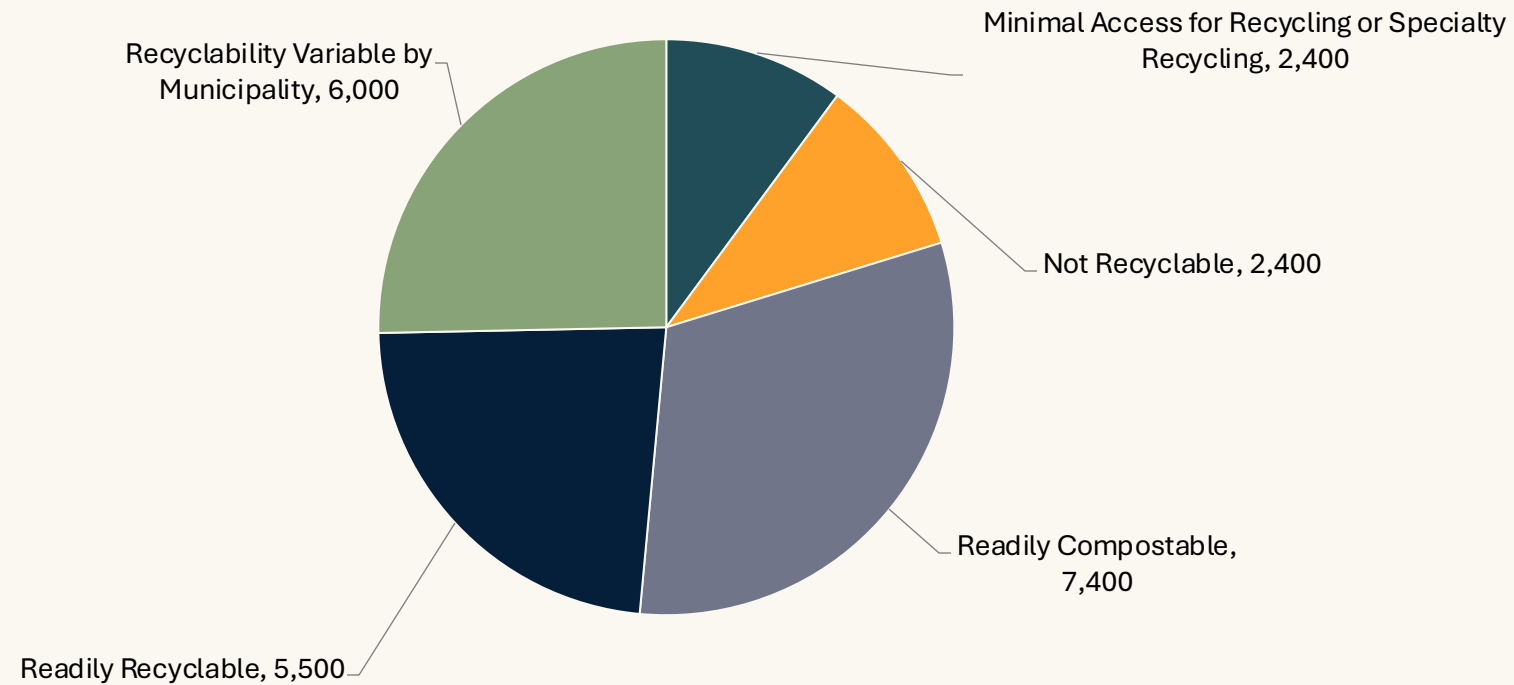


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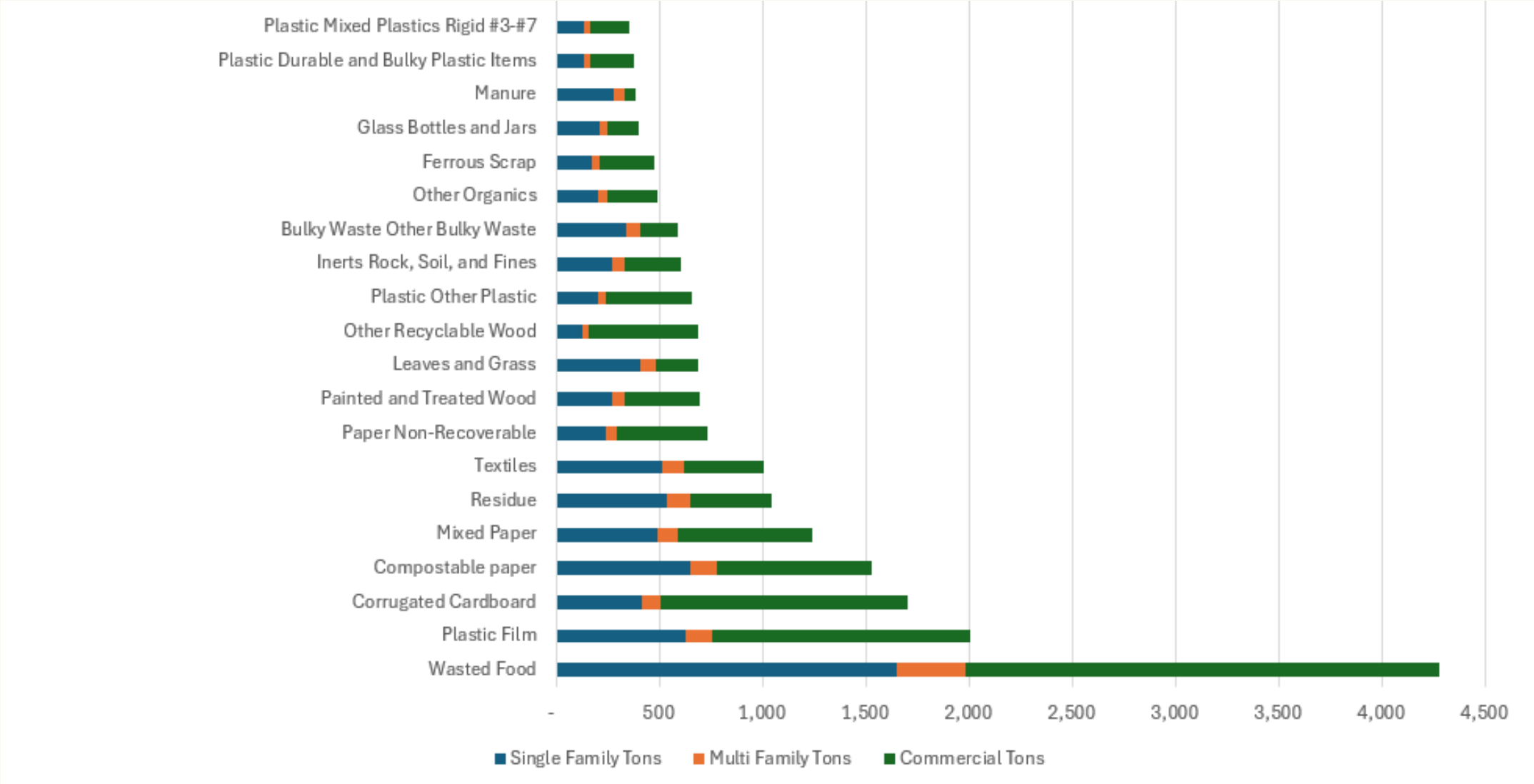
Michigan Landfill Waste Generated by Charlevoix County by Type in Tons 2024	Disposal Location		GFL North Michigan Landfill, LLC (Presque Isle County) GFL Environmental USA	Montmorency-Oscoda-Alpena SWMA (Montmorency County) Montmorency-Oscoda-Alpena Solid Waste Authority	Wexford County Landfill (Wexford County) Wexford County Landfill LLC/ GFL
	Total Generated	City Environmental Services, Inc of Waters (Crawford County) City Environmental Services, Inc of Waters			
ADC	-	-	-	-	-
C&D	1,251	1,045	192	-	15
IW	238,044	238,044	-	-	-
MCW	2,559	2,512	9	38	-
OTHER	260	194	-	-	67
Grand Total	242,114	241,794	201	38	82

2 - RRS MCW Model | Charlevoix

LANDFILLED MCW MATERIAL RECYCLABILITY MODEL BY WEIGHT IN TONS FOR CHARLEVOIX COUNTY 2024

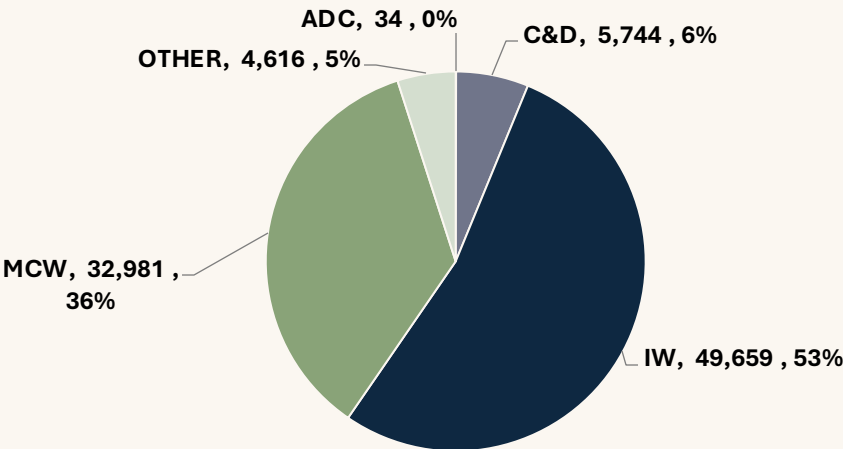


2 - RRS MCW Model | Charlevoix



1 - EGLE Annual Landfill Report | Manistee

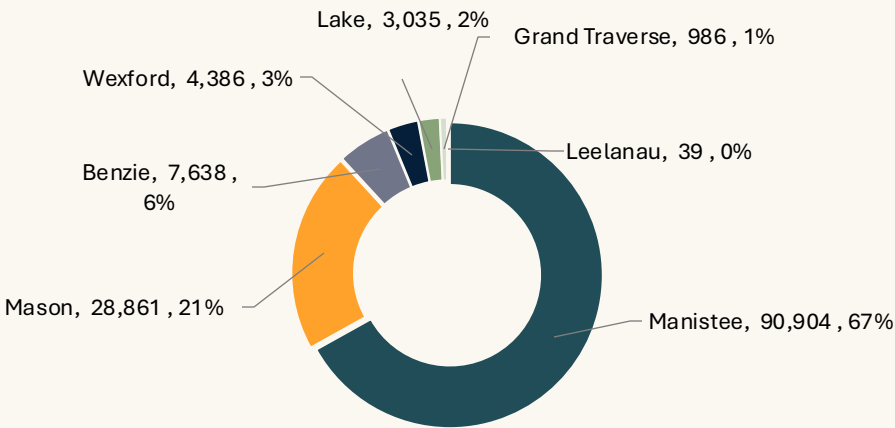
MICHIGAN LANDFILL WASTE GENERATED BY MANISTEE COUNTY BY TYPE IN TONS 2024



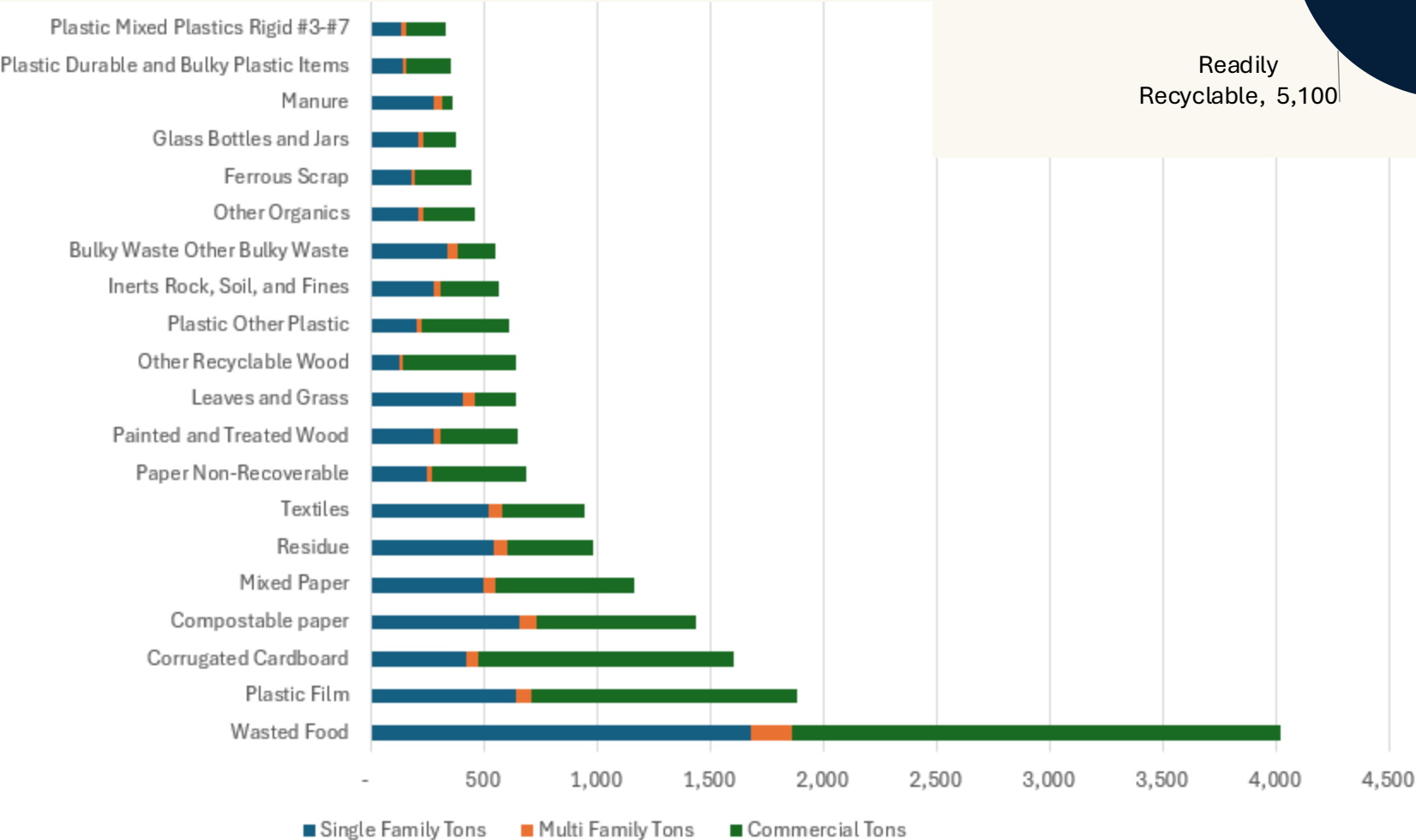
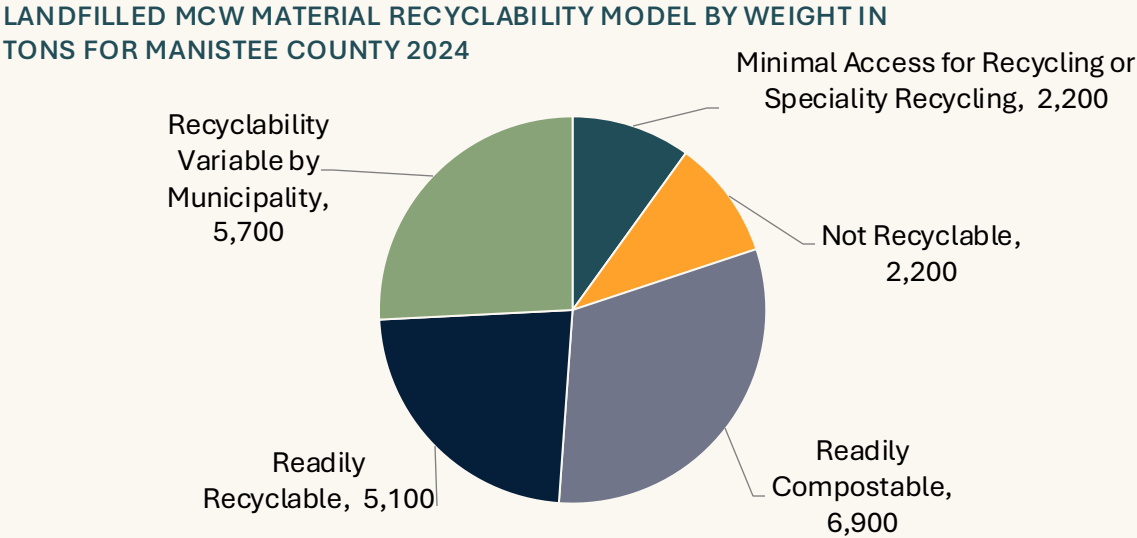
Michigan Landfill Waste Generated by Manistee County by Type in Tons 2024	Disposal Location			
	Total Generated	Manistee County Landfill (Manistee County) Harland’s Sanitary Landfill Inc / Republic	Wexford County Landfill (Wexford County) Wexford County Landfill LLC/ GFL	Glens Sanitary Landfill (Leelanau County) Glen’s Sanitary Landfill Inc / Waste Management
ADC	34	-	34	-
C&D	5,744	4,585	1,119	39
IW	49,659	49,559	95	4
MCW	32,981	32,280	118	584
OTHER	4,616	4,480	78	58
Grand Total	93,033	90,904	1,445	685

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ORIGIN OF WASTE LANDFILLED IN MANISTEE CO FY 2024 IN TONS

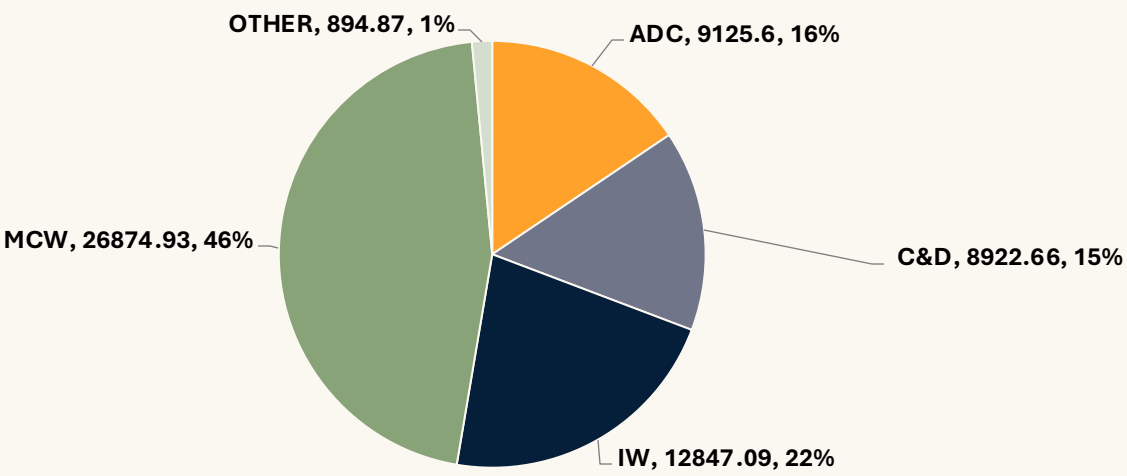


2 - RRS MCW Model | Manistee



1 - EGLE Annual Landfill Report | Wexford

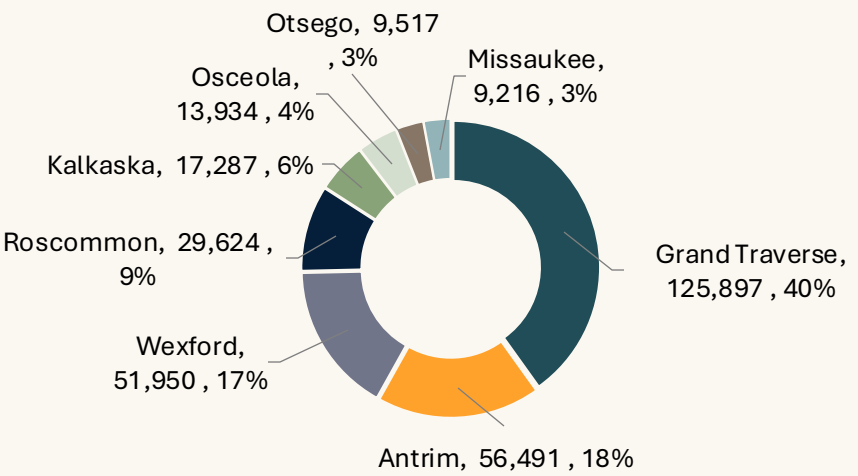
MICHIGAN LANDFILL WASTE GENERATED BY WEXFORD COUNTY BY TYPE IN TONS 2024



Michigan Landfill Waste Generated by Wexford County by Type in Tons 2024	Tons Generated	Disposal Location			
		Wexford County Landfill (Wexford County) Wexford County Landfill LLC/ GFL	Manistee County Landfill (Manistee County) Harland’s Sanitary Landfill Inc / Republic	Northern Oaks Recycling and Disposal Facility (Clare County) Waste Management	
ADC	9125.6	9,126	-	-	
C&D	8922.66	8,728	158	37	
IW	12847.09	12,812	35	-	
MCW	26874.93	21,264	4,186	1,424	
OTHER	894.87	20	7	868	
Grand Total	58665.15	51,950	4,386	2,330	

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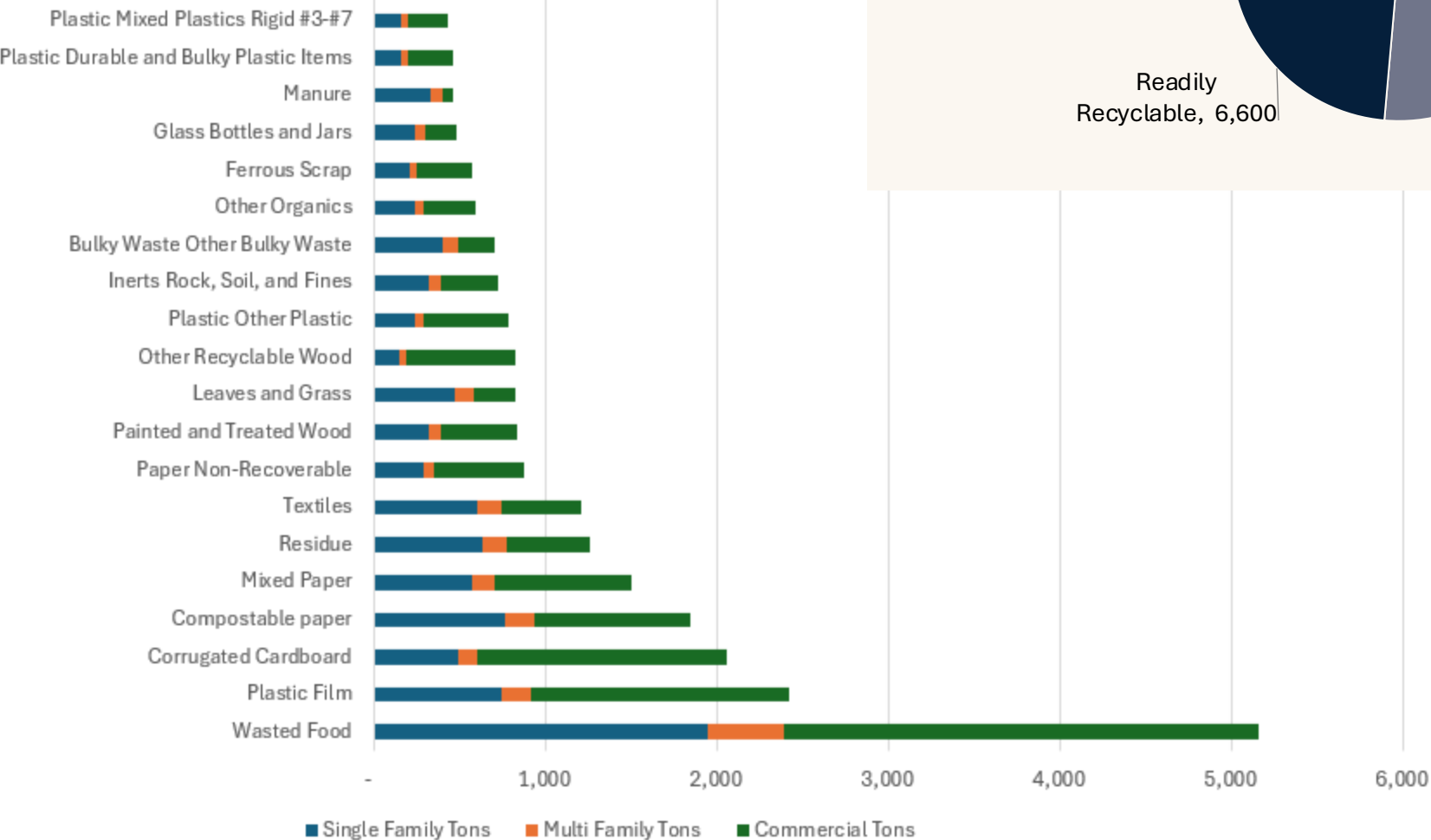
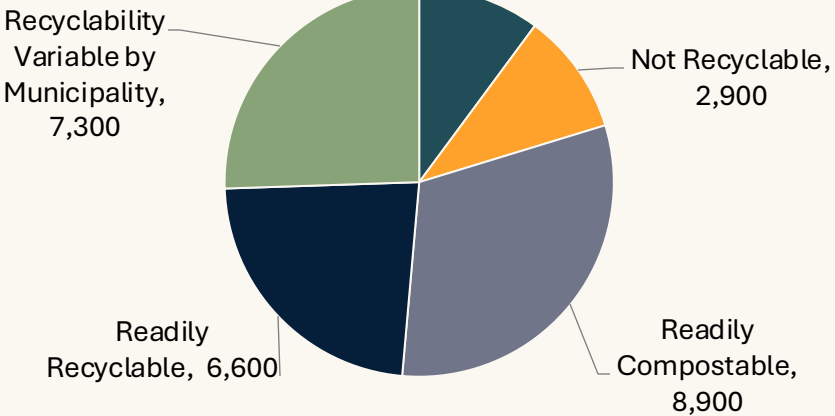
ORIGIN OF WASTE LANDFILLED IN WEXFORD COUNTY FY 2024 IN TONS



2 - RRS MCW Model | Wexford

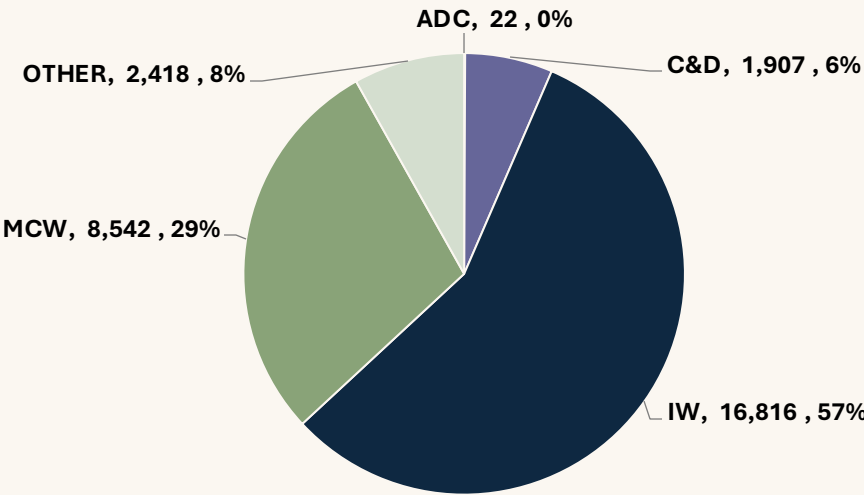
LANDFILLED MCW MATERIAL RECYCLABILITY MODEL BY WEIGHT IN TONS FOR WEXFORD COUNTY 2024

Minimal Access for Recycling or Speciality Recycling, 2,900



1 - EGLE Annual Landfill Report | Missaukee

MICHIGAN LANDFILL WASTE GENERATED BY MANISTEE COUNTY BY TYPE IN TONS 2024



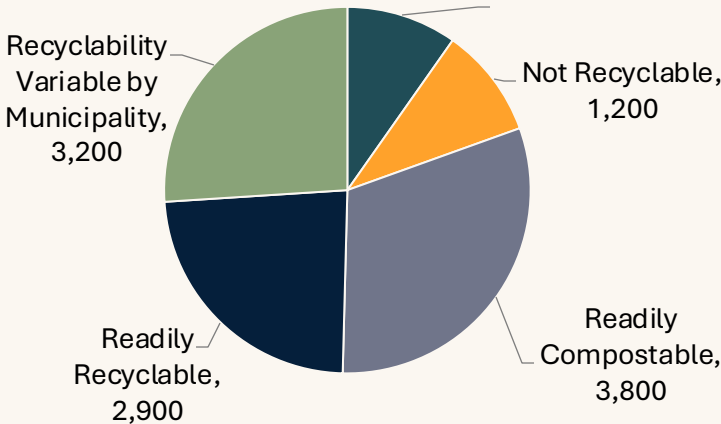
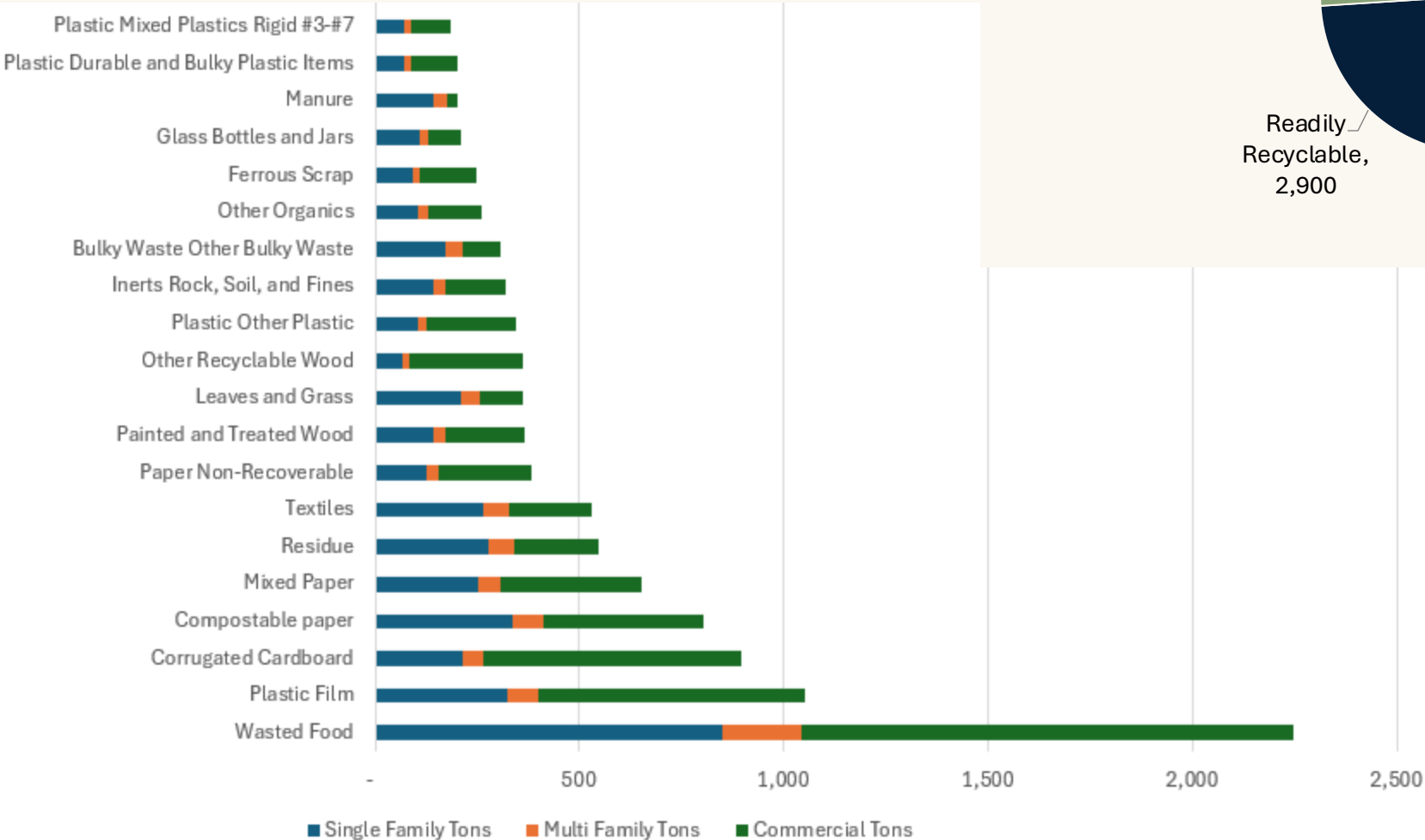
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Michigan Landfill Waste Generated by Missaukee County by Type in Tons 2024	Total Generated	Disposal Location	
		Northern Oaks Recycling and Disposal Facility (Clare County) Waste Management	Wexford County Landfill (Wexford County) Wexford County Landfill LLC/ GFL
ADC	22	-	22
C&D	1,907	370	1,536
IW	16,816	16,702	114
MCW	8,542	1,075	7,468
OTHER	2,418	2,343	75
Grand Total	29,706	20,490	9,216

2 - RRS MCW Model | Missaukee

LANDFILLED MCW MATERIAL RECYCLABILITY MODEL BY WEIGHT IN TONS FOR MISSAUKEE COUNTY 2024

Minimal Access for Recycling or Speciality Recycling, 1,200



3 - Benchmark Recycling Standards & Mega Data Estimated Diversion Rates

(6) "Benchmark recycling standards" means all of the following requirements:

(a) By January 1, 2026, at least 90% of single-family dwellings in urban areas as identified by the most recent federal decennial census and, by January 1, 2028, at least 90% of single-family dwellings in municipalities with more than 5,000 residents have access to curbside recycling that meets all of the following criteria:

(i) One or more recyclable materials, as determined by the county's material management plan, that are typically collected through curbside recycling programs, are collected at least twice per month.

(ii) If recyclable materials are not collected separately, the mixed load is delivered to a solid waste processing and transfer facility and the recyclable materials are separated from material to be sent to a solid waste disposal area.

(iii) Recyclable materials collected are delivered to a materials recovery facility that complies with part 115 or are managed appropriately at an out-of-state recycling facility.

(iv) The curbside recycling is provided by the municipality or the resident has access to curbside recycling by the resident's chosen hauler.

(b) By January 1, 2032, the following additional criteria:

(i) In counties with a population of less than 100,000, there is at least 1 drop-off location for each 10,000 residents without access to curbside recycling at their dwelling, and the drop-off location is available at least 24 hours per month.

(ii) In counties with a population of 100,000 or more, there is at least 1 drop-off location for each 50,000 residents without access to curbside recycling at their dwelling, and the drop-off location is available at least 24 hours per month.

3 – Benchmark Recycling Standard Status & Potential Risk

Benchmark Recycling Standard		Charlevoix	Manistee	Anttrim	Wexford	Missaukee
	2020 Census Population	26,054	25,032	23,431	33,673	15,052
	Population Rate of Change from 2010 to 2022	+ 1.4%	+ 2.8%	+ 3.2%	+ 4.5%	+ 2.7%
	Estimated 2023 County Population	26,143	25,247	23,876	33,868	15,156
	Largest City and Population	Boyne, ~3,800	Manistee City, ~6,200	Mancelona, ~4,300	Cadillac, ~10,000	Lake Township, ~2,800
	Second Largest City and Population	Charlevoix City, ~2,400	Manistee Township, ~4,000	Elk Rapids, ~2,500	Haring, ~3,500	Richland, ~1,700
Jan 1,2026	At least 90% of single-family dwellings in URBAN areas have access to curbside recycling.	NA	NA	NA	NA	NA
Jan 1,2028	At least 90% of single-family dwellings in municipalities with MORE THAN 5,000 RESIDENTS have access to curbside recycling.	NA	BRS MET	NA	BRS MET	NA
Jan 1,2032	In counties with a population of LESS THAN 100,000 there is at least 1 drop-off per 10,000 residents without curbside.	BRS MET	BRS MET	BRS MET	BRS MET	BRS MET
Jan 1,2032	In counties with a population of 100,000 OR MORE there is at least 1 drop-off for each 50,000 residents without curbside.	NA	NA	NA	NA	NA
		7 Drop-Off Locations	13 Drop-Off Locations	11 Drop-off Locations	4 Drop-Off Locations	1 Drop-Off Location. ~64 hrs/mo.

3 - Estimated Diversion Rates

- **Charlevoix | Total: 12%**
 - > Residential: 16%
 - > Commercial: 8%
- **Manistee | Total: 11%**
 - > Residential: 17%
 - > Commercial: 6%
- **Antrim | Total: 10%**
 - > Residential: 16%
 - > Commercial: 6%
- **Wexford | Total: 12%**
 - > Residential: 13%
 - > Commercial: 11%
- **Missaukee | Total: 10%**
 - > Residential: 17%
 - > Commercial: 4%



2022 State of Michigan Goals:

45% Recycling Rate by 2030.

50% Reduction in Food loss and waste by 2030.

Summary

OPPORTUNITIES

- Dial-in recycling rates with actual data from counties with recorded materials weights, potentially Charlevoix, Manistee, Missaukee.
- Increase diversion by focusing on the largest landfilled materials by weight:
 - Recycling: Cardboard, Plastic Films, Mixed Papers, Textiles
 - Composting: food waste & compostable paper
- Develop historical volume estimates of Storm Debris and Construction and Demolition materials, seek to improve future data tracking on these categories.

NOTE

- Be aware of potential risks to Benchmark Recycling Standard status if there are reductions in curbside services in key communities, reductions in drop-off locations or drop-off hours of operation.
- Be aware of potential risks to future Benchmark Recycling Standard status resulting from population increases in key communities throughout the lifespan of the MMP.