

SW MI Materials Management Planning Committee Agenda

March 17, 2025

1:00 p.m.

Location: Pokagon Band Community Center
27043 Potawatomi Trail Dowagiac, MI 49047

1. Call to Order & Roll Call

Kalli Marshall, VBCD, Chair

2. Approval of Agenda

3. Approval of Minutes

4. Communications

5. Old Business

Work Program (*Action Required*)

Bekah Schrag, DPA

Demographics

Bekah Schrag, DPA

Waste Generation

Bekah Schrag, DPA

6. Hearings

Business Materials Management

Camp Friedenswald

Amy Huser, Sustainability Director

United Container Company

Jeff Doroh, Director Business Operations

ChewMax Pet Products

Bob Baran, Owner

Lake Michigan College

Al Pscholka, VP, Enrollment, Marketing, &
Government Relations

7. New Business

8. Public Comment

9. Miscellaneous

10. Adjournment

*Next meeting will be held **April 21 at 1:00 p.m. at Pokagon Band Community Center
27043 Potawatomi Trail Dowagiac, MI 49047***

For questions about accessibility or to request accommodations, please contact Bekah Schrag at (574) 312-9148 or by email at schragb@swmpc.org



Minutes

SW MI Materials Management Planning Committee (MMPC)

Monday, February 10, 2025, at 1:00 p.m.

LOCATION: Pokagon Band Community Center
27043 Potawatomi Trail Dowagiac, MI 49047

MEMBERS PRESENT:

Baran, Bob	Kuhn, David
Doroh, Jeff	Marchetti, Roseann, Secretary
Egelhaaf, John	Marshall, Kalli, Chair
Haneberg, Kim	Muth, Deah
Huser, Amy	Pscholka, Al
Kanine, Jennifer	Vollrath, Dave
Kelley, Donovan	

MEMBERS ABSENT:

Schincariol, Paul
Kras, Bob
Phillips, Christopher, Vice Chair (excused)

PUBLIC PRESENT:

Adams, Jill
Graves, Genevieve
Johnson, Stacey
Filkins, Lindsay
Johnson, Jason
Palthe, Justin
Schoonmaker, Daniel

1. CALL TO ORDER

Chair Kalli Marshall called the meeting to order at 1:00 pm. She took roll call, and a quorum was present.

2. APPROVAL OF AGENDA

Chair Marshall presented the agenda.

Secretary Roseann Marchetti moved to **“ACCEPT THE AGENDA”** Dave Vollrath seconded the motion, which carried unanimously.

3. APPROVAL OF MINUTES

Marchetti moved to **“APPROVE JANUARY 13, 2025 MINUTES.”** Deah Muth seconded the motion, which carried unanimously.

4. COMMUNICATIONS

Bekah Schrag mentioned a vacancy on the committee due to John Giczewski from Hydro no longer being with the company. An interested party from Hydro was mentioned to potentially replace him. The application process and approval by the County Board of Commissioners were discussed before the new member could join the committee.

5. OLD BUSINESS

Materials Management Planning Grant Draft

SWMPC discussed the planning process for the materials management grant, which includes a base of \$60,000 per county, an additional \$10,000 for a multi-county plan and a fifty-cent per cap for each county. The grant requires an approved work program, which will be approved at the next meeting. SWMPC then discussed the draft work program, which included topics of the planning committee formation, the planning grant application and reporting processes, the plan area profile, writing and drafting the plan, and additional tasks required to create the Materials Management Plan in Year 1. Year 1 is being defined as October 1, 2024 to September 30, 2025 to seek partial reimbursement for previous planning efforts. SWMPC also discussed the need for public participation and engagement with cities, villages, and townships.

Schrag mentioned that EGLE will only reimburse expenses dating back to October 1, 2024, and listed outreach to local congress members as an option for those who may want to advocate for expanding the reimbursement period.

The committee will be asked to approve the work program at the next MMPC meeting on March 17, 2025.

6. HEARINGS

Survey Findings

Schrag presented topics based on the MMPC survey findings in order to answer any questions or concerns the committee has about the planning process and overall goals of the Materials Management Plan (MMP). Schrag gave an overview of the Materials Management landscape in the State of Michigan, including that the tons per capita is 72.1% higher than the national average. Schrag then defined the roles of each member on the committee, stating that they each bring a unique perspective to the committee, and being actively involved in the planning process is crucial. The committee members were encouraged to share insights from their organizations, engage with public participation efforts, and help shape solutions for waste reduction and recycling. Schrag presented on the roles of local units of government and businesses in the planning process, and defined the process of the plan creation using the Michigan Recycling Coalition Timeline.

Diversion Programs – Pokagon Band

Justin Palthe presented on the existing diversion programs present at the Pokagon Band. The Pokagon Band offers a composting program and has successfully diverted 515 pounds of food waste since the start of it, which is used in the Medicine Garden and the Three Sisters Garden. The Kowabdanawa odë kè department is also working on expanding the composting program to casinos and tribal housing. There are challenges with commercial recycling services, as the current provider is not offering the same level of service as before. Alternative solutions are being explored. Palthe highlighted the household hazardous waste collection program and efforts to clean up dumping sites on Tribal properties. Additionally, the Pokagon Band has been conducting educational activities on recycling and composting. Marchetti mentioned there was an upcoming hazardous waste drop off event and the Tribe is welcome to bring materials in.

MMCE Reports

Daniel Schoonmaker discussed his organization's work with the Materials Management Community Engagement grants that brought together 8 counties in the Southwest region of Michigan to conduct surveys and provide reports relating to materials management, including waste management and recycling practices. Schoonmaker discussed the characterization of waste categories in Michigan, noting that the largest category is solid waste, followed by industrial waste and construction waste. He also highlighted the increase in food waste and the potential for more cardboard waste due to increased recycling efforts. Schoonmaker mentioned a

survey with industry members to determine the current recycling rates and the impact of contamination and quality on these rates. He also discussed the economic impact of not recycling, estimating a loss of 8 billion dollars over the next 10 years. Lastly, Schoonmaker emphasized the need for more recycling centers and the importance of implementing a materials management plan. Schoonmaker mentioned that they are working on an integrated solid waste management plan and an inventory of ways to serve it. He also expressed interest in sharing best practices with other organizations. The conversation ended with plans to revise and share their findings in the future.

7. NEW BUSINESS

Landfill Reports

Schrag discussed the State landfill reports, with the two landfills in the region, Orchard Hill and Southeast Berrien County Landfill, having 47 and 13 years of remaining capacity, respectively. Schrag discussed the characterization of waste categories in Michigan, noting that the largest category is solid waste, followed by industrial waste and construction waste. It was noted that 30% of waste comes from out of state or out of country, with some coming from as far as Massachusetts. SWMPC also mentioned that some companies are integrated and may bring their routes to cheaper facilities, even if it means a longer drive. Donovan, a district manager of recycling works in Indiana, added that a lot of Indiana's trash stays within Indiana landfills, especially those owned by Republic and WM. He also noted that the location of hauling routes determines where solid waste goes, with Michigan City being closer to a landfill on the border than one in Indianapolis. Schrag then presented findings based on each County as to the type and location of their waste being landfilled.

Recycling Reports

Schrag presented the findings from the State of Michigan recycling reports. She mentioned that only one organization in the region is providing data to the State, and realistically, most of the region's recycling is not being counted in these numbers. The SWMPC will research further methods for figuring out recycling rates for the region. The current recycling rate was discussed, with the consensus being that it is around 20-25%. The need for more industrial-scale recycling facilities was emphasized, with the current capacity being insufficient to achieve the 45% goal. The conversation ended with a discussion on the recycling facilities in the region, with the need for more data on the region's recycling practices being highlighted.

Waste Generation

Due to time, Schrag suggested moving the Waste Generation agenda item to the next meeting. The Committee agreed.

8. PUBLIC COMMENT

Lindsay Filkins, the owner of Filkins Vinyards in the Coloma area mentioned the ongoing odor issue with the Orchard Hill Landfill. She mentioned they have plans to expand their business with overnight accommodations, however they are worried that the odor may hurt business. They have sought recycling options though only residential bins are available at their location. They also mentioned that they believe the landfill causes groundwater and other health issues.

9. MISCELLANEOUS

Marshall shared information about the Michigan Recycling Coalition's compost event on February 27th and the Annual Recycling and Organics Conference on May 13th.

Schrag asked the committee about length of the meetings, and it was decided that the meetings should try to stay within a two hour timeframe.

10. ADJOURNMENT

Dave Vollrath moved to adjourn the meeting. Deah Muth supported the motion. Chair Marshall declared the meeting adjourned at 3:05pm.

Submitted by:
Bekah Schrag

Date:
March 10, 2025

SOUTHWEST MICHIGAN MATERIALS MANAGEMENT PLAN - WORK PROGRAM

BERRIEN COUNTY

CASS COUNTY

VAN BUREN COUNTY

Approved by the Southwest Michigan Multicounty Materials Management Planning
Committee on March 17, 2025

COUNTY APPROVAL AGENCIES

Berrien County Board of Commissioners

Contact: - Dave Vollrath

Email: DVollrath@berriencounty.org

Cass County Board of Commissioners

Contact: - Roseann Marchetti

Email: RoseannM@cassco.org

Van Buren County Board of Commissioners

Contact: - Paul Schincariol

Email: SchincariolP@vanburencountymi.gov

DESIGNATED PLANNING AGENCY

Southwest Michigan Planning Commission (SWMPC)

Designated Planning Agency Representative:

Bekah Schrag, Associate Planner

schragb@swmpc.org

(269) 925-1137 x 1521

MMP Grant Managers

Berrien County

Jill Adams, Director

Berrien County Parks Department

269-983-7111 x8234

jadams@berriencounty.org

Cass County

Jennifer Rentfrow, Interim County Administrator/Director of Finance

269-445-4437

JenniferR@cassco.org

Van Buren County

Kalli Marshall, Recycling & Materials Management Coordinator (Van Buren Conservation District)

269-657-4030 x5

resourcerecovery@vanburencd.org

MATERIALS MANAGEMENT PLANNING COMMITTEE MEMBERS

REGIONAL PLANNING AGENCY	WASTE HAULER
John Egelhaaf, Executive Director Southwest Michigan Planning Commission (SWMPC)	Christopher Phillips, Assistant Manager (Vice Chair) Best Way Disposal
COUNTY ELECTED OFFICIALS	BUSINESSES GENERATING MANAGED MATERIALS
Roseann Marchetti, Commissioner Cass County	Robert Baran, Owner ChewMax Pet Products
Paul Schincariol, Commissioner Van Buren County	Amy Huser, Sustainability & Outdoor Education Director Camp Friedenswald
Dave Vollrath, Commissioner Berrien County	Jeff Doroh, Business Director United Container Company
	Al Pscholka, Vice President Lake Michigan College
TOWNSHIP ELECTED OFFICIAL	MATERIAL RECOVERY FACILITY OPERATOR
David Kuhn, Treasurer Bertrand Township	Donovan Kelley, Site Manager Waste Connections
CITY OR VILLAGE ELECTED OFFICIAL	COMPOST FACILITY OPERATOR
Deah Muth, Mayor City of Watervliet	Kim Haneberg, Superintendent Department of Public Services, City of Dowagiac
ENVIRONMENTAL INTEREST GROUP	SOLID WASTE FACILITY OPERATOR
Kalli Marshall, Recycling & Materials Management Coordinator (Chair) Van Buren Conservation District	Bob Kras, Manager Southeast Berrien County Landfill
WASTE DIVERSION/REUSE OR REDUCTION	SOVEREIGN NATION
(To be approved) Sheila Bergen, HSE Director Hydro Aluminum	Jennifer Kanine, Director Kowabdanawa odë ké (DNR) Pokagon Band of Potawatomi

BACKGROUND

On January 8, 2024, the Director of the Michigan Department of Environment, Great Lakes & Energy (EGLE) initiated the process for each county to prepare a Materials Management Plan, under legislation changes to Michigan Public Act 451, Part 115, which became effective March 29, 2023 (the Act). After approved by EGLE, these plans will replace existing county Solid Waste Plans and transition from a solid waste disposal focus to a new materials management system geared toward seeking alternatives to landfilling, reducing environmental impacts, contributing to a circular economy, and identifying the highest and best use for all materials including recyclables, organics, and solid wastes.

The following Work Program complies with the Act and may be amended as needed.

TASKS

Pursuant to Part 115 (MCL 324.11587(4)(b)) and its Administrative Rules, the Designated Planning Agency shall prepare a Work Program that shall describe the activities for developing and implementing the Materials Management Plan and the associated costs covered by the county(ies) and the MMP grant program.

The Plan is required to be submitted to the Department of Environment, Great Lakes, and Energy by **July 3, 2027**. This Work Program addresses costs for activities in development and implementation of the plan between January 8, 2024 and July 3, 2027.

For tasks and their components, please see attached excel.

Tasks Completed Before October 1, 2024.

TASK 1 – PLANNING PROCESS INITIATION

The Planning Process Initiation Task contained multiple subtasks as shown in the attached table. These subtasks included all County Approval Agencies accepting responsibility for the plan, drafting an interlocal agreement for the three counties, and approving the interlocal agreement. Further tasks included appointing a designated planning agency, corresponding with adjacent counties regarding opportunities for multicounty plans,

submitting the notice of intent to EGLE, and distributing the notice of intent to cities, villages, and townships in the planning area. All subtasks have been completed as of the end of July 2024.

Public input opportunities during this task included public meetings at all Board of Commissioners meetings where actions were taken, and press releases of the notice of intent distribution.

For more detailed information please see the attached table.

TASK 2: MATERIALS MANAGEMENT PLANNING COMMITTEE

The Materials Management Planning Committee Task contains many subtasks. These subtasks included the creation of an online application for the MMPC, media releases for soliciting applications and reviewing and ranking applications based on criteria and expertise. All subtasks have been completed as of the end of September 2024.

Public input opportunities during this task include press releases for the MMPC appointment solicitation.

For more detailed information please see the attached table.

Costs accrued before October 1, 2024: \$36,848.36

Work beginning October 1, 2024. Year 1 begins here.

TASK 2: MATERIALS MANAGEMENT PLANNING COMMITTEE

The Materials Management Planning Committee Task contains many subtasks. These subtasks include recommending applicants to all three CAAs for approval. Further tasks include formal resolutions from all County BOCs to appoint the recommended applicants, as well as additional members as identified in the Interlocal Agreement. Once the MMPC members had been appointed, additional subtasks included drafting and approving bylaws for the MMPC, drafting and approving the work program, and submitting the work program to EGLE. All subtasks have been completed as of the end of March 2025.

Public input opportunities during this task include public meetings at all Board of Commissioners meetings where actions were taken, and MMPC meetings.

For more detailed information please see the attached table.

TASK 3: MATERIALS MANAGEMENT PLANNING GRANT

The Materials Management Planning Grant Task contains a few subtasks. These subtasks include the submittal of the grant application to EGLE, EGLE department review, and approvals from all County Board of Commissioners to accept the grant. All subtasks have been completed as of the submission of this work program but will need to be repeated with the grant cycle.

Public input opportunities during this task include public meetings at all Board of Commissioners meetings where actions were taken.

For more detailed information please see the attached table.

TASK 4: MATERIALS MANAGEMENT PLAN AREA PROFILE

The Materials Management Area Profile Task contains many subtasks. These subtasks include the review of the three Counties' previous Solid Waste Plans, compiling regional demographics for the planning area, exploring existing recycling and composting programming, researching and understanding of inventory, location, and capacity at solid waste disposal facilities, materials management facilities, and composting facilities. Additional subtasks include compiling existing hauling services in the area, infrastructure, and analyzing reports from landfills, composting facilities, and recycling facilities. All subtasks are expected to be completed by the end of Spring 2025.

Public input opportunities during this task include public meetings at all MMPC meetings.

For more detailed information please see the attached table.

TASK 5: ANALYSIS AND OPPORTUNITIES

The Analysis and Opportunities Task contains many subtasks. These subtasks include the assessment of gaps and system needs through reviewing market reports and survey of CVTs; exploring priorities of services, programs, and infrastructure; evaluation and

recommending best management practices based on benchmark recycling standards and surrounding opportunities; exploring funding mechanisms; and drafting any desired ordinances or policies. All subtasks are expected to be completed by the end of Fall 2025.

Public input opportunities during this task include public meetings at all MMPC meetings, and a survey of cities, villages, and townships in the planning area.

For more detailed information please see the attached table.

TASK 6: PREPARE DRAFT MATERIALS MANAGEMENT PLAN

The Prepare Draft Materials Management Plan Task contains subtasks. These subtasks include preparing and releasing a public survey and beginning to write the draft plan.

The public survey is expected to be released in Summer 2025. The writing of the draft plan will continue into previous years.

Public input opportunities during this task include public meetings at all MMPC meetings, and a public survey that will be advertised widely.

For more detailed information please see the attached table.

ADDITIONAL PUBLIC PARTICIPATION

Public participation not only includes membership of the three-county Materials Management Planning Committee, but also includes notifying interested parties and all local units of government of the planning process. The various components are:

- The County Board of Commissioners in each county, acting as County Approval Agency (CAA), is responsible for establishing and maintaining a 17-member materials management planning committee. This committee has been established under an intergovernmental agreement enabled by PA 7 of 1967 (The Urban Cooperation Act). SWMPC aids the Counties in the administration of the committee. A regular meeting schedule has been established and is available at www.swmpc.org Meetings for the Materials Management Planning Committee generally take place on the third Mondays of the month at 1:00 p.m.

- Meeting notices or other materials management planning activity information will regularly be sent by email to all local units of government and requesting members of the public in the method requested.
- Members of the public are invited to attend regular meetings of the planning committee, and a public comment component has been incorporated into the regular meeting agenda format.
- Committee meeting notices and agendas will be distributed to each County for posting. Meeting notices will be posted in accordance with the Open Meetings Act.
- Public notices of the 60-day local review period and public hearing will be published in the local paper, on the county websites and the DPA website.

COSTS

Please see attached Budget Form with Narrative for costs of the individual elements and the total cost of plan preparation in Year 1.

The SWMPC incurred \$36,848.36 in expenses prior to October 1, 2024, and understand that while EGLE may allow reimbursement, requesting it now could delay the grant application. To avoid any holdups, we will proceed without seeking immediate reimbursement but may explore options later if feasible.

STAFFING

Please describe staffing needs and responsibilities for plan preparation in Year 1.

Position	FTE	Responsibilities
Berrien County		
Cass County		
Van Buren County		

Tasks	Sub Tasks	Description	Responsible Party	Public Participation	Status	Timeline									
						Completion Date	2024				2025				
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Work done previous to October 1, 2024															
TASK 1: PLANNING PROCESS INITIATION	Plan Initiation	Initiation of planning began January 8, 2024	EGLE	N/A	Completed	1/8/24	x								
	Accept Role as County Approval Agencies	Formal Resolutions passed to accept CAA responsibilities	CAAs	Public Meeting(s)	Completed	7/3/2024	x	x							
	Draft Interlocal Agreement	Write interlocal agreement that includes MMPC appointment process, DPA payment, MMP approval process, and more.	DPA, County Staff	N/A	Completed	5/31/24	x	x							
	Approve Interlocal Agreement	Formal resolutions from all three Counties	CAAs	Public Meeting(s)	Completed	7/3/24	x	x							
	Appoint Designated Planning Agency	Formal resolutions from all three Counties	CAAs	N/A	Completed	7/3/24	x	x							
	Correspond with Adjacent Counties	Each County sent letters to adjacent counties regarding their plan to create a multicounty plan	DPA, CAAs	Public Meeting(s)	Completed	7/3/24	x	x							
	Submit Notice of Intent to EGLE	All Counties completed the Survey Monkey to submit the Notice of Intent	CAAs	Public Meeting(s)	Completed	7/3/24	x	x							
	Distribute Notice of Intent	All Counties notified CVTs via press releases and emails	DPA, CAAs	Press Releases	Completed	8/2/24	x	x							
TASK 2: MATERIALS MANAGEMENT PLANNING COMMITTEE	Identify Candidates for MMPC	Created Online Application for MMPC	DPA	N/A	Completed	6/1/24		x							
		Drafted and published media releases for soliciting applications	DPA, County Staff	Press Releases	Completed	6/1/24		x							
		Reviewed and ranked applications based on criteria, employment, education, and skills	DPA	N/A	Completed	9/5/24			x						
Work beginning October 1, 2024. Year 1 begins here															
TASK 2: MATERIALS MANAGEMENT PLANNING COMMITTEE	Identify Candidates for MMPC	Recommended appointments for each seat on the MMPC were sent to all County BOCs	DPA	N/A	Completed	10/3/24				x					
	Appoint MMPC Members	Formal Resolutions passed to appoint MMPC members	CAAs	Public Meeting(s)	Completed, Ongoing as needed	11/7/24				x	x	x			
	Administer MMPC	Setting meeting dates, preparing agendas, preparing and sending all required public notices	DPA	Public Meeting(s)	Ongoing	November 2024-July 2027				x	x	x	x	x	
	Creation and Approval of MMPC Bylaws	Drafted Bylaws		DPA	N/A	Completed	11/13/24				x				
		Approval of MMPC Bylaws		MMPC	Public Meeting(s)	Completed	11/20/24				x				
		Draft a MMP Work Program		DPA	N/A	Completed	3/17/25				x	x			

	Draft and Seek Approval for the MMP Work Program	<i>Work Program Approval</i>	MMPC	Public Meeting(s)	Completed	3/17/25					x					
		<i>Work Program submittal to EGLE</i>	DPA	N/A	Completed	3/31/25					x					
		<i>Deadline: Extension through March 31, 2025</i>				3/31/25										
TASK 3: MATERIALS MANAGEMENT PLANNING GRANT	Submit Grant Application	<i>Seek approval from all CAAs to apply for grant</i>	CAA, County Staff	Public Meetings (s)	Completed	3/31/25					x					
		<i>DPA submit grant application with approved work program</i>	DPA	N/A	Completed	3/31/25					x					
	Department Grant Review		EGLE	N/A	Not Started							x				
	Seek BOC Approvals	<i>Formal Resolutions from each County to accept MMP Grant</i>	CAAs	Public Meeting(s)	Not Started								x			
TASK 4: MATERIALS MANAGEMENT PLAN AREA PROFILE	Analyze Existing Conditions	<i>Previous Plan Review</i>	DPA	N/A	In Progress					x	x					
		<i>Regional Demographics</i>	DPA, MMPC	Public Meeting(s)	In Progress					x	x					
		<i>Existing programming</i>	MMPC	Public Meeting(s)	In Progress	1/13/25						x				
		<i>Solid Waste Disposal Facilities: Inventory and Capacity</i>	DPA, MMPC	Public Meeting(s)	In Progress							x	x			
		<i>Materials Management Facilities: Inventory and Capacity</i>	DPA, MMPC	Public Meeting(s)	In Progress							x	x			
		<i>Composting Facility Operations: Capacity, Locations</i>	DPA, MMPC	Public Meeting(s)	In Progress							x	x			
		<i>Hauling services provided and infrastructure</i>	DPA, MMPC	Public Meeting(s)	In Progress							x	x			
	Analyze Existing Generation and Diversion	<i>Reports from landfills, recycling facilities</i>	DPA, MMPC	Public Meeting(s)	In Progress							x	x			
TASK 5: ANALYSIS AND OPPORTUNITIES	Analyze Gaps and System Needs	<i>Review market reports</i>	DPA	N/A	Not Started								x	x		
	Explore Priorities	<i>Service, program, and infrastructure priorities</i>	DPA, MMPC	Public Meeting(s)	Not Started									x	x	
		<i>Maximization of MM options</i>	DPA, MMPC	Public Meeting(s)	Not Started									x	x	
	Evaluate and Recommend Best Management Practices	<i>Goals, best practices, and benchmark recycling standard options</i>	DPA, MMPC	Public Meeting(s)	Not Started									x	x	
	Explore Solutions for Existing Gaps	<i>Engage Consultant for feasibility studies of MM facilities that may be needed.</i>	DPA, MMPC	Public Meeting(s)	Not Started									x	x	
	Explore Supporting Policy and Funding Mechanisms	<i>Explore funding mechanisms</i>	DPA, MMPC	Public Meeting(s)	Not Started										x	x
		<i>Draft Model Ordinances/Policies</i>	DPA, MMPC	Public Meeting(s)	Not Started										x	x
TASK 6: PREPARE DRAFT MATERIALS MANAGEMENT PLAN	Public Input and Drafting	<i>Prepare and Release Public Survey</i>	DPA, MMPC	Public Survey, Press Release, Public Meeting (s)	Not Started									x	x	
		<i>Write draft plan</i>	DPA	N/A	In Progress							x	x	x	x	

Demographics

Population

Berrien County

Between 2000 and 2020, Berrien County's population declined by -5.01%, from 162,453 to 154,316 residents. Among the townships, Royalton Township experienced the largest growth (+32.23%), while Chikaming Township faced the steepest decline (-24.47%). City populations decreased overall by -10.67%, with the City of New Buffalo (-22.36%) and Benton Harbor (-18.59%) seeing significant losses. Villages showed mixed results; Grand Beach grew the most (+36.56%), while Three Oaks experienced a major decline (-25.01%). Overall, the county's population losses were driven by significant declines in cities, smaller townships, and some rural areas, despite growth in select areas like Royalton Township and Grand Beach Village.

Table 1: Berrien County Total Population by Municipality from 2000 to 2020

Jurisdiction	2000 Population	2010 Population	2020 Population	% Change 2000-2020
Berrien County	162,453	156,813	154,316	-5.01%
<i>Townships</i>				
Bainbridge Township	3,132	2,850	2,682	-14.37%
Baroda Township	2,880	2,801	2,835	-1.56%
Benton Charter Township	16,404	14,749	14,374	-12.38%
Berrien Township	5,075	5,084	4,868	-4.08%
Bertrand Township	2,380	2,657	2,611	9.71%
Buchanan Township	3,510	3,523	3,436	-2.11%
Chikaming Township	3,678	3,100	2,778	-24.47%
Coloma Charter Township	5,217	5,020	5,051	-3.18%
Galien Township	1,611	1,452	1,412	-12.35%
Hagar Township	3,964	3,671	3,243	-18.19%
Lake Charter Township	3,148	2,972	3,316	5.34%
Lincoln Charter Township	13,952	14,691	14,929	7.00%
New Buffalo Township	2,468	2,386	2,455	-0.53%
Niles Township	13,325	14,164	14,417	8.20%
Oronoko Charter Township	9,843	9,193	9,226	-6.27%
Pipestone Township	2,474	2,312	2,177	-12.00%
Royalton Township	3,888	4,766	5,141	32.23%

Sodus Township	2,139	1,932	1,995	-6.73%
St. Joseph Charter Township	10,042	10,028	9,993	-0.49%
Three Oaks Township	2,949	2,574	2,324	-21.19%
Watervliet Township	3,392	3,102	3,036	-10.50%
Weesaw Township	2,065	1,936	1,832	-11.28%
Subtotal	117,536	114,963	114,131	-2.90%
<i>City</i>				
City of Benton Harbor	11,182	10,038	9,103	-18.59%
City of Bridgman	2,428	2,291	2,096	-13.67%
City of Buchanan	4,681	4,456	4,300	-8.14%
City of Coloma	1,595	1,483	1,465	-8.15%
City of New Buffalo	2,200	1,883	1,708	-22.36%
City of Niles	12,199	11,599	11,988	-1.73%
City of St. Joseph	8,789	8,365	7,856	-10.62%
City of Watervliet	1,843	1,735	1,669	-9.44%
Subtotal	44,917	41,850	40,185	-10.53%
<i>Census population figures for the following villages have been included in the figures (above) for the townships in which they are located.</i>				
<i>Village</i>				
Baroda	867	873	875	0.92%
Berrien Springs	1,864	1,800	1,910	2.47%
Eau Claire	671	625	552	-17.73%
Galien	581	549	513	-11.70%
Grand Beach	227	272	310	36.56%
Michiana	184	182	200	8.70%
Shoreham	835	862	844	1.08%
Shorewood-Tower Hills-Harbert CDP	1,631	1,344	1,249	-23.42%
Stevensville	1,190	1,142	1,147	-3.61%
Three Oaks	1,827	1,622	1,370	-25.01%
Watervliet	1,855	1,735	1,669	-10.03%
Subtotal	11,732	11,006	10,639	-9.32%
Source: US Decennial Census				

Cass County

Between 2000 and 2020, Cass County experienced a slight population growth of 0.95%, increasing from 51,104 to 51,589 residents. Among the townships, Ontwa Township (+17.72%) and Milton Township (+18.22%) saw the most significant growth, while Silver Creek Township (-12.60%) and Marcellus Township (-11.47%) faced the steepest declines.

The City of Dowagiac saw a population decrease of -6.93%, contributing to an overall city decline of -7.01%. In the villages, Cassopolis experienced a minor population decrease of -1.61%. While most townships contributed to modest growth, declines in specific rural and urban areas tempered the county's overall population trends.

Table 2: Cass County Total Population by Municipality from 2000 to 2020

Jurisdiction	2000 Population	2010 Population	2020 Population	% Change 2000-2020
Cass County	51,104	52,293	51,589	0.95%
<i>Townships</i>				
Calvin Township	2,041	2,037	1,993	-2.35%
Howard Township	6,309	5,879	6,275	-0.54%
Jefferson Township	2,401	2,945	2,590	7.87%
Lagrange Township	3,340	3,500	3,787	13.38%
Marcellus Township	2,712	2,541	2,401	-11.47%
Mason Township	2,514	2,539	2,841	13.01%
Milton Township	2,646	3,878	3,128	18.22%
Newberg Township	1,703	1,632	1,602	-5.93%
Ontwa Township	5,865	6,549	6,904	17.72%
Penn Township	1,902	1,774	1,755	-7.73%
Pokagon Township	2,199	2,029	2,119	-3.64%
Porter Township	3,794	3,798	3,750	-1.16%
Silver Creek Township	3,491	3,218	3,051	-12.60%
Volinia Township	1,174	1,112	1,096	-6.64%
Wayne Township	2,861	2,654	2,576	-9.96%
Subtotal	44,952	46,085	45,868	2.04%
<i>Cities</i>				
City of Dowagiac	6,147	6,207	5,721	-6.93%
Subtotal	6,152	6,207	5,721	-6.93%
<i>Census population figures for the following villages have been included in the figures (above) for the townships in which they are located.</i>				
<i>Villages</i>				
Cassopolis	1,740	1,774	1,712	-1.61%
Edwardsburg	1,147	1,259	1,304	13.69%
Marcellus	1,162	1,198	1,074	-7.57%
Vandalia	429	301	318	-25.87%
Source: US Decennial Census				

Van Buren County

As of 2020, Van Buren County had a population of 76, 263. Between 2000 and 2020, Van Buren County experienced a slight overall population decline of -0.89%, dropping from 76,263 to 75,587 residents. Among the townships, Almena (+25.60%) and Antwerp (+24.16%) saw the highest growth, while Keeler (-24.34%) and Hamilton (-23.76%) faced the steepest declines. City populations decreased by -8.74%, with the City of South Haven experiencing a significant drop (-21.01%), though smaller cities like Gobles (+4.42%) and Bangor (+4.29%) grew modestly. Village populations varied, with Mattawan growing slightly (+0.55%) and Decatur seeing a notable decline (-10.17%). Overall, the county's townships showed marginal growth (+0.33%), but this was offset by declines in cities and some rural areas.

Table 3: Van Buren County Total Population by Municipality from 2000 to 2020

Jurisdiction	2000 Population	2010 Population	2020 Population	% Change 2000-2020
Van Buren County, Overall	76,263	76,258	75,587	-0.89%
<i>Townships</i>				
Almena Township	4,226	4,992	5,308	25.60%
Antwerp Township	10,813	12,182	13,425	24.16%
Arlington Township	2,075	2,073	1,958	-5.64%
Bangor Township	2,121	2,147	1,939	-8.58%
Bloomington Township	3,364	3,103	2,930	-12.90%
Columbia Township	2,714	2,588	2,546	-6.19%
Covert Township	3,141	2,888	2,510	-20.09%
Decatur Township	3,916	3,726	3,575	-8.71%
Geneva Township	3,975	3,573	3,416	-14.06%
Hamilton Township	1,797	1,489	1,370	-23.76%
Hartford Township	3,159	3,274	3,021	-4.37%
Keeler Township	2,601	2,169	1,968	-24.34%
Lawrence Township	3,341	3,259	3,289	-1.56%
Paw Paw Township	7,091	7,041	6,881	-2.96%
Pine Grove Township	2,773	2,949	2,994	7.97%
Porter Township	2,406	2,466	2,568	6.73%
South Haven Township	4,046	3,983	4,041	-0.12%
Waverly Township	2,467	2,554	2,506	1.58%
Subtotal	66,026	66,456	66,245	0.33%
<i>Cities</i>				
City of Bangor	1,933	1,885	2,016	4.29%
City of Gobles	815	829	851	4.42%

City of Hartford	2,476	2,688	2,515	1.58%
City of South Haven	5,013	4,400	3,960	-21.01%
Subtotal	10,237	9,802	9,342	-8.74%
<i>Census population figures for the following villages have been included in the figures (above) for the townships in which they are located.</i>				
<i>Villages</i>				
Bloomington	528	454	513	-2.84%
Decatur	1,838	1,819	1,651	-10.17%
Lawrence	1,059	996	964	-8.97%
Lawton	1,859	1,900	1,850	-0.48%
Mattawan	2,536	1,997	2,550	0.55%
Paw Paw	3,363	3,534	3,362	-0.03%
Source: US Decennial Census				

Between 2000 and 2020, the regional population declined by -2.87%, dropping from 289,820 to 281,492 residents, while Michigan's state population grew by 1.40%, rising from 9,938,444 to 10,077,331. In comparison, Van Buren County experienced a slight population decline of -0.89%, from 76,263 to 75,587, performing better than the overall region but falling short of the state's growth. Berrien County faced a larger decline of -5.01%, from 162,453 to 154,316, which was worse than both the regional and state trends. Cass County showed modest growth of 0.95%, increasing from 51,104 to 51,589, outperforming the region and coming closer to Michigan's statewide growth.

Overall, while the region's population shrank, Cass County stood out for positive growth, Van Buren County performed relatively well with minimal decline, and Berrien County experienced the most significant losses. Compared to Michigan, all three counties combined lagged behind the state's modest population gains over the two decades.

Fluctuations in population will directly affect the future of materials management in the region as more or less materials will be generated based on population changes. Areas experiencing population growth, are likely to see an increase in waste generation, necessitating expanded infrastructure for collection and disposal of various materials. Conversely, areas with declining populations may face challenges such as increased costs per capita for service and difficulties maintaining economies of scale. Understanding these trends is essential for developing adaptive materials management strategies that address the needs of both growing and shrinking communities.

Table 4: Regional and State Total Population from 2000 to 2020

	2000 Population	2010 Population	2020 Population	% Change 2000-2020
Region	289,820	285,364	281,492	-2.87%
Michigan	9,938,444	9,883,640	10,077,331	1.40%

Southwest Michigan has experienced a slow but steady population decline over the past two decades, with forecasts indicating a continued downward trend. Van Buren County has seen minimal fluctuation, with its population remaining relatively stable between 2000 and 2020, declining slightly from 76,263 in 2000 to 75,587 in 2020. ESRI forecasts suggest this trend will persist, with an estimated population of 75,365 by 2029 (Figures 1 & 2).

Berrien County has experienced the most significant decline in the region. In 2000, the county had 162,453 residents, but by 2020, that number had dropped to 154,316. Forecasts indicate further decline, with the population expected to fall below 150,000 by 2029 (Figures 1 & 2).

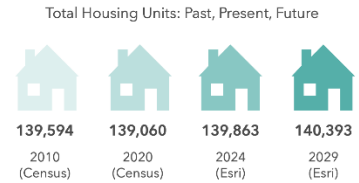
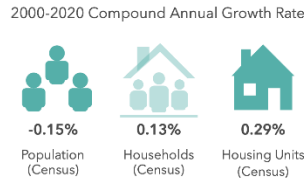
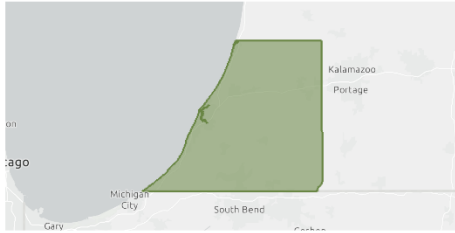
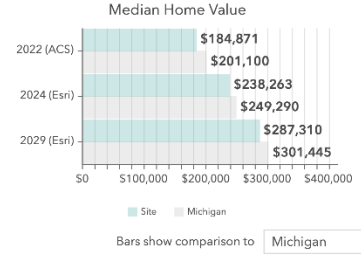
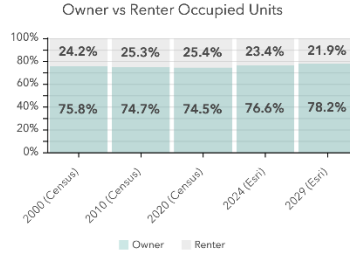
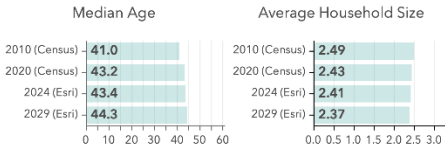
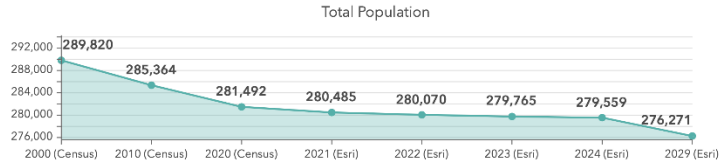
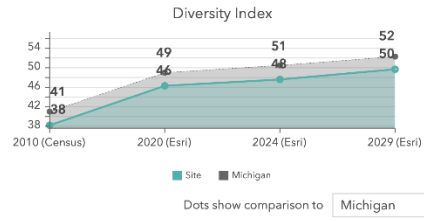
Cass County presents a slightly different pattern. The population grew modestly from 51,104 in 2000 to 52,293 in 2010 but has since declined, falling to 51,589 in 2020. Forecasts suggest this downward trend will continue, with the county reaching approximately 50,976 residents by 2029 (Figures 1 & 2).

As a region, Southwest Michigan (Van Buren, Berrien, and Cass counties) had a combined population of 289,820 in 2000, declining to 285,364 in 2010 and further to 281,492 in 2020. By 2029, ESRI forecasts estimate the region's population will drop to 276,271, reflecting broader demographic shifts, including aging populations, economic factors, and migration patterns (Figures 1 & 2).

Figure 1: Community Changes in Southwest Michigan from 2010 to 2029

Community Change Snapshot

Community Change Snapshot Southwest Michigan



Source: This infographic contains data provided by U.S. Census (2000, 2010, 2020), Esri (2024, 2029), ACS (2018-2022). © 2025 Esri

Figure 2: Demographic and Income Profile for Southwest Michigan from 2010 to 2029



Demographic and Income Profile

Southwest Michigan
Berrien County, MI (26021) et al.
Geography: County

Prepared by Esri

Summary	Census 2010	Census 2020	2024	2029				
Population	285,364	281,492	279,559	276,271				
Households	112,586	114,172	114,587	115,132				
Families	76,562	74,689	73,031	72,712				
Average Household Size	2.49	2.43	2.41	2.37				
Owner Occupied Housing Units	84,104	85,111	87,741	89,978				
Renter Occupied Housing Units	28,482	29,061	26,846	25,154				
Median Age	41.0	43.2	43.4	44.3				
Trends: 2024-2029 Annual Rate	Area	State	National					
Population	-0.24%	-0.09%	0.38%					
Households	0.09%	0.27%	0.64%					
Families	-0.09%	0.08%	0.56%					
Owner HHs	0.50%	0.69%	0.97%					
Median Household Income	3.43%	2.84%	2.95%					
Households by Income	Census 2020		2024	2029				
	Number	Percent	Number	Percent				
<\$15,000	10,448	9.1%	9,095	7.9%				
\$15,000 - \$24,999	9,148	8.0%	7,290	6.3%				
\$25,000 - \$34,999	10,185	8.9%	8,719	7.6%				
\$35,000 - \$49,999	14,006	12.2%	12,251	10.6%				
\$50,000 - \$74,999	19,609	17.1%	18,642	16.2%				
\$75,000 - \$99,999	13,938	12.2%	14,425	12.5%				
\$100,000 - \$149,999	18,586	16.2%	21,258	18.5%				
\$150,000 - \$199,999	10,060	8.8%	13,096	11.4%				
\$200,000+	8,607	7.5%	10,356	9.0%				
Median Household Income	\$65,149		\$77,104					
Average Household Income	\$93,505		\$108,086					
Per Capita Income	\$38,382		\$45,099					
Population by Age	Census 2010		Census 2020		2024		2029	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0 - 4	17,465	6.1%	14,969	5.3%	14,728	5.3%	14,516	5.3%
5 - 9	18,586	6.5%	17,353	6.2%	16,226	5.8%	14,506	5.3%
10 - 14	19,690	6.9%	18,334	6.5%	17,526	6.3%	16,092	5.8%
15 - 19	20,290	7.1%	17,933	6.4%	16,966	6.1%	15,883	5.7%
20 - 24	15,426	5.4%	14,943	5.3%	16,126	5.8%	15,087	5.5%
25 - 34	30,938	10.8%	30,845	11.0%	30,561	10.9%	31,710	11.5%
35 - 44	35,280	12.4%	32,060	11.4%	32,971	11.8%	32,608	11.8%
45 - 54	44,343	15.5%	34,625	12.3%	33,235	11.9%	32,947	11.9%
55 - 64	38,919	13.6%	42,772	15.2%	39,169	14.0%	35,010	12.7%
65 - 74	24,241	8.5%	34,270	12.2%	36,010	12.9%	37,506	13.6%
75 - 84	14,283	5.0%	17,055	6.1%	19,420	6.9%	22,891	8.3%
85+	5,903	2.1%	6,333	2.2%	6,621	2.4%	7,515	2.7%
Race and Ethnicity	Census 2010		Census 2020		2024		2029	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
White Alone	235,429	82.5%	218,958	77.8%	215,745	77.2%	209,869	76.0%
Black Alone	29,958	10.5%	26,169	9.3%	25,415	9.1%	25,681	9.3%
American Indian Alone	2,007	0.7%	2,359	0.8%	2,392	0.9%	2,389	0.9%
Asian Alone	3,103	1.1%	3,894	1.4%	4,102	1.5%	4,435	1.6%
Pacific Islander Alone	145	0.1%	171	0.1%	188	0.1%	193	0.1%
Some Other Race Alone	7,397	2.6%	9,615	3.4%	10,377	3.7%	11,010	4.0%
Two or More Races	7,325	2.6%	20,326	7.2%	21,340	7.6%	22,694	8.2%
Hispanic Origin (Any Race)	16,382	5.7%	20,337	7.2%	21,740	7.8%	23,147	8.4%

Data Note: Income is expressed in current dollars.

Source: Esri forecasts for 2024 and 2029. U.S. Census Bureau 2020 decennial Census in 2020 geographies.

February 24, 2025

Age Distributions

The age distribution comparison between Michigan, the region, and the three counties (Berrien, Cass, and Van Buren) reveals interesting demographic trends. Michigan and the region have similar proportions of children under 5 years (5.4% and 5.3%), but Van Buren County stands out with a higher percentage (5.7%), while Cass County has the lowest (4.9%). Van Buren County also consistently has higher proportions in the 5 to 9 (6.4%) and 10 to 14 (6.8%) age groups, surpassing both the region and state averages. Cass County shows slightly higher proportions for the 10 to 14 age group (6.6%) but aligns with the state average for 15 to 19 years.

Michigan has a stronger representation in the 20 to 24 (6.7%) and 25 to 29 (6.6%) age groups compared to the region and counties, with Van Buren being the lowest for 20 to 24 years (5.0%) and Cass for 25 to 29 years (4.7%). Age groups between 35 and 54 years show similar trends across the state, region, and counties, with slight variations; Van Buren has a slightly higher proportion in the 35 to 39 age group (5.9%) compared to the region and Michigan.

The region and counties generally have higher proportions of older adults (55 to 74 years) compared to the state, reflecting aging populations. Cass and Van Buren have the highest percentages in the 55 to 59 (7.8% and 7.6%) and 60 to 64 (7.9% each) age groups, outpacing Michigan and the region. Cass County also stands out in the 65 to 69 (7.0%) and 70 to 74 (5.9%) brackets. Michigan and the region align closely for those aged 75 to 84 years, but Berrien and Cass show slightly higher percentages in the 75 to 79 range. Van Buren lags slightly in these age groups (3.4% and 2.1%, respectively). Berrien County has a higher proportion of residents aged 85 and over (2.6%) compared to Cass (1.9%) and Van Buren (1.8%).

Overall, Van Buren County has a younger demographic, particularly in the under-15 and 15 to 19 age groups, with fewer young adults. Cass County has a higher proportion of older adults (55 to 74 years), indicating an aging population. Berrien County shows a balance but leads in the proportion of elderly individuals aged 85 and over. The region as a whole skews older than Michigan, reflecting the trend of aging populations in the counties.

Table 5: Age Cohorts in Southwest Michigan in 2020

Age Group	Michigan	Region	Berrien	Cass	Van Buren
Under 5 years	5.4%	5.3%	5.3%	4.9%	5.7%
5 to 9 years	5.9%	6.2%	6.1%	5.9%	6.4%
10 to 14 years	6.2%	6.5%	6.3%	6.6%	6.8%
15 to 19 years	6.6%	6.4%	6.3%	6.5%	6.5%
20 to 24 years	6.7%	5.3%	5.4%	5.4%	5.0%
25 to 29 years	6.6%	5.3%	5.5%	4.7%	5.2%
30 to 34 years	6.4%	5.7%	5.8%	5.2%	5.8%
35 to 39 years	6.0%	5.8%	5.8%	5.4%	5.9%
40 to 44 years	5.7%	5.6%	5.6%	5.6%	5.7%
45 to 49 years	6.0%	5.9%	5.8%	6.2%	5.8%
50 to 54 years	6.4%	6.4%	6.3%	6.8%	6.3%
55 to 59 years	7.1%	7.5%	7.4%	7.8%	7.6%
60 to 64 years	7.0%	7.7%	7.5%	7.9%	7.9%
65 to 69 years	6.0%	6.8%	6.7%	7.0%	6.8%
70 to 74 years	4.7%	5.4%	5.4%	5.9%	5.1%
75 to 79 years	3.2%	3.7%	3.7%	4.0%	3.4%
80 to 84 years	2.0%	2.3%	2.5%	2.3%	2.1%
85 years and over	2.1%	2.2%	2.6%	1.9%	1.8%

Source: US 2020 Decennial Census

The age distribution within a population impacts materials management, influencing waste generation, recycling, and composting needs. Younger populations like young children typically generate higher volumes of household waste, including disposable diapers, wipes, and school-related materials. Middle-aged demographics, which often represent families and working professionals, may contribute to higher levels of recyclables such as cardboard, plastics, and electronic waste. Conversely, older populations may generate a greater proportion of medical and pharmaceutical waste that requires specialized disposal. Understanding these age-related trends is critical for tailoring materials management strategies to the specific needs of each demographic group, ensuring sustainability and efficiency across the region.

Race and Ethnicity

The racial and ethnic composition of Southwest Michigan reflects both regional and local variations. White residents make up the majority (77.8%), with Cass County (85.3%) having the highest proportion and Berrien County (73.6%) the lowest. Berrien County is the most

racially diverse, closely mirroring the statewide distribution with Black or African American residents making up 13.9% of its population, compared to just 4.5% in Cass County and 3.2% in Van Buren County. The American Indian and Alaska Native population remains a small but present group across the counties, ranging from 0.6% to 1.2% of the total population.

Van Buren County stands out for its racial diversity beyond the traditional White/Black categories. It has the highest percentage of residents identifying as "Some Other Race" (5.8%) and "Two or More Races" (8.2%), suggesting a broader mix of racial identities. The Hispanic population is most prominent in Van Buren County (11.9%), significantly exceeding the regional (9.3%) and state (5.6%) averages. This sizable Hispanic community is also present in Berrien County (6.0%), while Cass County has a smaller Hispanic population (4.2%). Overall, the region is less diverse than the state, with Cass County being the least diverse and Berrien County showing the most variation.

Table 6: Race and Ethnicity Composition of Michigan, Berrien, Cass, Van Buren Counties, and Southwest Michigan Region (2020 Census Data)

Race and Ethnicity	Michigan		Berrien		Cass		Van Buren		Region	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
White	7,444,974	73.9%	113,608	73.6%	44,005	85.3%	61,345	81.2%	218,958	77.8%
Black or African American	1,376,579	13.7%	21,420	13.9%	2,321	4.5%	2,428	3.2%	26,169	9.3%
American Indian and Alaska Native	61,261	0.6%	943	0.6%	597	1.2%	819	1.1%	2,359	0.8%
Asian	334,300	3.3%	3,189	2.1%	319	0.6%	386	0.5%	3,894	1.4%
Native Hawaiian and Other Pacific Islander	3,051	0.0%	120	0.1%	11	0.0%	40	0.1%	171	0.1%
Some Other Race	221,851	2.2%	4,291	2.8%	927	1.8%	4,397	5.8%	9,615	3.4%
Two or More Races	635,315	6.3%	10,745	7.0%	3,409	6.6%	6,172	8.2%	20,326	7.2%
Hispanic Origin (Any Race)	564,22	5.6%	9,210	6.0%	2,161	4.2%	8,966	11.9%	20,337	9.3%

Source: US 2020 Decennial Census

Race and ethnicity can influence materials management in various ways due to disparities in access to resources, education, and infrastructure across different racial and ethnic groups. Historically marginalized communities may face barriers in participating fully in

recycling, materials diversion, and sustainable materials management practices due to factors such as limited access to materials management services, lower levels of community investment, or environmental justice concerns. These disparities can lead to unequal opportunities for resource recovery, particularly in communities that are underserved. Materials management services should work to ensure equitable access, education, and support, tailoring solutions to address the unique needs of communities and reducing disparities in materials management outcomes across racial lines. This approach can help foster inclusivity and ensure that all residents, regardless of race and ethnicity, are able to participate in and benefit from sustainable materials management practices.

Language

English is the dominant language across Berrien County, Cass County, and Van Buren County, with the highest percentage of English-only speakers in Cass County (97%) and the lowest in Van Buren County (91%). Spanish is the most widely spoken non-English language, with Van Buren County (8%) having a significantly higher Spanish-speaking population than the state average (2.9%). Other languages, including German, French, Polish, Chinese, and Arabic, are spoken in much smaller percentages, with "All Other Languages" collectively making up 9%. Of the 9% of all other languages spoken in the region, 5.9% of the regions population speaks English less than “very well.”

Table 7: Languages Spoken in Michigan, Berrien, Cass, and Van Buren Counties (2020 Census Data)

Language	State of Michigan	Berrien County	Cass County	Van Buren County
English Only	90.10%	92%	97%	91%
Spanish/Spanish Creole	2.90%	4%	1%	8%
German	0.44%	1%	<1%	<1%
French (incl. Patois, Cajun)	0.31%	<1%	<1%	<1%
Polish	0.29%	<1%	<1%	<1%
Chinese	0.36%	<1%	<1%	<1%
Arabic	1.04%	<1%	<1%	<1%
All Other Languages	4.46%	3%	2%	4%

For materials management planning, this linguistic landscape has important implications. Educational materials should be available in both English and Spanish, particularly in areas like Van Buren County, where Spanish speakers represent a more substantial portion

of the population. Localized assessments may help determine whether specific communities need translated materials for additional languages.

Migrant and Seasonal Workers

Table 8 highlights the distribution of migrant workers across Berrien, Cass, and Van Buren Counties within the region, revealing their significant contribution to the agricultural workforce. Based on 2020 Census data, Van Buren County employs the highest number of migrant workers (4,115), followed by Berrien County (1,590), while Cass County employs comparatively fewer (374). Farms with hired labor reflect similar trends, with Van Buren County employing 3,678 workers and Berrien County employing 1,495. The regional total of 6,079 workers underscores the critical role of migrant labor in sustaining agricultural operations. However, these numbers may be highly undercounted due to challenges in accurately capturing transient populations, language barriers, and hesitancy among workers to participate in the census.

Seasonal workers significantly impact materials generation patterns, particularly in areas like Van Buren and Berrien Counties with higher concentrations of migrant labor. During peak agricultural seasons, the influx of workers increases the demand for temporary housing and associated services, resulting in heightened waste production. Common waste streams include packaging waste from disposable goods, organic waste from food preparation, and increased recyclable materials. Additionally, temporary housing for workers may lack access to recycling or composting programs, leading to challenges in waste diversion. Addressing these fluctuations requires tailored strategies, such as providing accessible recycling and composting options at worker housing sites and integrating multilingual waste education for seasonal employees. Accurate data collection and culturally sensitive outreach programs are also essential to effectively manage the waste impacts of this important workforce.

Table 8: Total Migrant Labor in Southwest Michigan by County in 2020

		Berrien County	Cass County	Van Buren County	Region
Total Migrant Workers	Farms	74	14	75	163
	Workers	1,590	374	4,115	6,079
Migrant farm labor on farms with hired labor	Farms	63	13	68	144
	Workers	1,495	(D)	3,678	5,173

Poverty

Poverty levels in the region reveal a higher percentage of individuals living below key poverty thresholds compared to Michigan as a whole. Across all counties, the proportion of individuals below 50% of the poverty level is slightly higher in Berrien County (7.0%) than the state average (6.1%). The disparity widens at higher poverty thresholds, with 34.4% of individuals in Berrien County and 32.2% in Van Buren County below 200% of the poverty level, compared to 29.5% statewide. By 300% of the poverty level, over half of the population in the region (50.9%) falls below this threshold, exceeding the state rate (46.3%). Cass County, despite its relatively lower numbers of extreme poverty, has 77.4% of its population under 500% of the poverty level, indicating persistent economic challenges across income tiers. Overall, poverty is more prevalent in the region than in Michigan, with notable disparities in higher poverty thresholds.

Table 9 presents the 2024 poverty guidelines for the 48 contiguous states and the District of Columbia, outlining the annual income thresholds that determine poverty status based on household size. The table shows the poverty guideline for households ranging from 1 to 8 persons, with an additional \$5,380 added for each person beyond 8.

Table 9: Poverty Rates for the United States

2024 POVERTY GUIDELINES FOR THE 48 CONTIGUOUS STATES AND THE DISTRICT OF COLUMBIA	
Persons in family/household	Poverty guideline
1	\$15,060
2	\$20,440
3	\$25,820
4	\$31,200
5	\$36,580
6	\$41,960
7	\$47,340
8	\$52,720
For families/households with more than 8 persons, add \$5,380 for each additional person.	
Source: 2024 US Department of Health and Human Services	

Table 10: Poverty Rates for Michigan, Berrien, Cass, Van Buren Counties, and the Region

ALL INDIVIDUALS WITH INCOME BELOW THE FOLLOWING POVERTY RATIOS	Michigan		Berrien County		Cass County		Van Buren County		Region	
	Count	Rate	Count	Rate	Count	Rate	Count	Rate	Count	Rate
	9,845,242		151,178		51,125		74,828		277,131	
50 percent of poverty level	599,404	6.1%	10,634	7.0%	3,212	6.3%	4,347	5.8%	18,193	6.6%
125 percent of poverty level	1,672,930	17.0%	30,378	20.1%	8,478	16.6%	13,488	18.0%	52,344	18.9%
150 percent of poverty level	2,071,419	21.0%	38,966	25.8%	10,240	20.0%	17,583	23.5%	66,789	24.1%
185 percent of poverty level	2,648,466	26.9%	48,603	32.1%	13,661	26.7%	21,966	29.4%	84,230	30.4%
200 percent of poverty level	2,906,413	29.5%	51,974	34.4%	15,185	29.7%	24,119	32.2%	91,278	32.9%
300 percent of poverty level	4,562,174	46.3%	77,701	51.4%	25,159	49.2%	38,288	51.2%	141,148	50.9%
400 percent of poverty level	6,000,841	61.0%	97,293	64.4%	33,744	66.0%	50,623	67.7%	181,660	65.6%
500 percent of poverty level	7,124,642	72.4%	112,389	74.3%	39,593	77.4%	59,147	79.0%	211,129	76.2%

Source: 2022 ACS Data

Poverty directly impacts materials management and waste generation, as lower-income households often have limited access to waste diversion programs, such as recycling and composting, due to financial constraints or lack of infrastructure. These households may also face difficulties in affording sustainable products, leading to higher consumption of disposable goods and increased waste generation. In addition, those living below the poverty line often live in neighborhoods that lack the resources or services necessary to manage waste effectively, exacerbating challenges related to waste diversion and environmental sustainability. Addressing these disparities through equitable waste management strategies can help promote more participation in recycling and composting programs.

Households

In terms of households, Michigan has a total of 4,009,253 households, with an average household size of 2.45. Berrien County has 63,512 households, with an average household size of 2.38. Cass County has 20,779 households, with a slightly larger average household size of 2.46. Van Buren County has 29,609 households, with the largest average household size at 2.51. The region as a whole consists of 113,900 households, with an average household size of 2.43.

In terms of the types of housing units, 77.3% of Michigan's housing is in single-unit structures, with 79.3% in Berrien County, 85.4% in Cass County, and 78.2% in Van Buren County. The percentage of housing in multi-unit structures (2 or more units) is 18.0% for Michigan, 16.2% for Berrien, 6.7% for Cass, and 9.3% for Van Buren. Mobile homes and other types of units account for 4.7% of Michigan's housing, with Berrien at 4.5%, Cass at 7.9%, and Van Buren at 12.6%.

Table 11: Household Composition and Types of Housing Structures in Michigan, Berrien, Cass, Van Buren Counties, and the Region

HOUSEHOLDS	Michigan	Berrien	Cass	Van Buren	Region
Total households	4,009,253	63,512	20,779	29,609	113,900
Average household size	2.45	2.38	2.46	2.51	2.43
UNITS IN STRUCTURE					
1-unit structures	77.3%	79.3%	85.4%	78.2%	
2-or-more-unit structures	18.0%	16.2%	6.7%	9.3%	
Mobile homes and all other types of units	4.7%	4.5%	7.9%	12.6%	

Household size and types of housing structures directly influence materials management, particularly in terms of waste generation and diversion efforts. Larger households, such as those in Van Buren County with an average size of 2.51, typically generate more waste, including higher volumes of food waste, recyclables, and household goods. This increased waste production may require larger bins or more frequent waste collection services to accommodate a greater volume. Single-unit structures, which dominate the region, often have more ease of access to waste management services, improving overall waste diversion rates. In contrast, multi-unit housing complexes are often more challenging to provide individual waste management solutions. Typically, multi-family units are offered trash and recycling dumpsters and require households to walk farther distances to dispose of the materials. This can lead to lower recycling participation and less efficient waste disposal. Addressing these disparities requires tailored strategies to improve waste

management practices and ensure all housing types, regardless of size or structure, have access to effective materials management systems.

Housing Stock

The housing data for Michigan, Berrien, Cass, Van Buren counties, and the region reveals notable differences in occupancy, vacancy rates, and homeownership patterns. Michigan has an occupancy rate of 88.4%, with slightly lower rates in Berrien (83.3%), Cass (81.9%), and Van Buren (79.9%), likely due to more seasonal or second homes in these counties. Vacancy rates are higher in rural areas, with Van Buren and Cass showing high percentages of seasonal homes. Homeownership is stronger in Cass (80.1%) and Van Buren (77.8%), compared to the state average of 70.9%, reflecting a more traditional homeownership market in these areas. Berrien has a larger rental market (28.7%) than the others, with fewer owner-occupied homes. Overall, rural counties show higher vacancy rates and more owner-occupied homes, while urbanized Berrien has a more mixed housing market with more rental units.

Seasonal visitors, especially those in short-term rentals or large vacation homes designed for parties and gatherings, contribute to significant seasonal fluctuations in waste generation. These homes can produce a high volume of waste during peak vacation seasons, putting pressure on materials management systems to accommodate the increased volume. In contrast, vacant homes, which are more prevalent in rural areas like Van Buren and Cass counties, can increase waste management logistics. The higher vacancies in these regions mean that waste services may require more costly operations, such as longer distances between service pickups. Owner-occupied homes, on the other hand, generate more stable and predictable waste streams. By understanding these occupancy trends, materials management services can be better tailored to address the specific needs of seasonal and vacant properties, ensuring that collection schedules and infrastructure are optimized.

Table 12: Housing Occupancy and Vacancy Rates in Michigan, Berrien, Cass, Van Buren Counties, and the Region

HOUSING OCCUPANCY	Michigan		Berrien		Cass		Van Buren		Region	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Total housing units	4,570,173		76,821		25,291		36,948		139,060	
Occupied housing units	4,041,760	88.4%	63,955	83.3%	20,707	81.9%	29,510	79.9%	114,172	82.1%
Vacant housing units	528,413	11.6%	12,866	16.7%	4,584	18.1%	7,438	20.1%	24888	17.9%
For rent	100,095	2.2%	1,814	2.4%	247	1.0%	581	1.6%	2,642	1.9%
Rented	11,186	0.002%	205	0.003%	69	0.003	92	0.002%	366	0.002632
For sale only	38,276	0.8%	653	0.9%	218	0.9%	379	1.0%	1,250	0.9%
Sold	19,708	0.4%	413	0.5%	128	0.5%	113	0.3%	654	0.5%
For seasonal	242,831	5.3%	7,543	9.8%	3,173	12.5%	5,037	13.6%	15,753	11.3%
All other vacant	116,317	0.025	2,238	0.029	749	0.03	1,236	0.033	4223	0.030368
Owner-occupied housing units	2,865,305	70.9%	45,580	71.3%	16,581	80.1%	22,950	77.8%	85,111	74.5%
Renter-occupied housing units	1,176,455	29.1%	18,375	28.7%	4,126	19.9%	6,560	22.2%	29,061	25.5%
Source: 2020 US Decennial Census										

Table 13: Monthly Housing Costs by Occupancy Type for Michigan and Southwest Michigan Counties (2022)

MONTHLY HOUSING COSTS	Michigan			Berrien County			Cass County			Van Buren County			Region		
	Occupied Housing	Owner Occupied	Renter Occupied	Occupied Housing	Owner Occupied	Renter Occupied	Occupied Housing	Owner Occupied	Renter Occupied	Occupied Housing	Owner Occupied	Renter Occupied	Occupied Housing	Owner Occupied	Renter Occupied
Less than \$300	154,852	113,748	41,104	3,651	2,808	843	1,313	1,069	244	1,227	961	266	6,191	4,838	1,353
\$300 to \$499	427,415	372,123	55,292	8,707	6,852	1,855	2,786	2,668	118	4,217	3,500	717	15,710	13,020	2,690
\$500 to \$799	770,454	586,708	183,746	13,646	9,623	4,023	4,513	3,432	1,081	6,193	4,832	1,361	24,352	17,887	6,465
\$800 to \$999	525,340	318,904	206,436	9,073	5,263	3,810	2,617	1,880	737	4,042	2,711	1,331	15,732	9,854	5,878
\$1,000 to \$1,499	1,044,808	658,917	385,891	15,205	10,247	4,958	4,972	4,108	864	6,963	5,755	1,208	27,140	20,110	7,030
\$1,500 to \$1,999	534,511	418,004	116,507	6,658	6,009	649	2,106	1,969	137	3,348	3,003	345	12,112	10,981	1,131
\$2,000 to \$2,499	241,137	208,686	32,451	2,764	2,612	152	932	906	26	1,592	1,535	57	5,288	5,053	235
\$2,500 to \$2,999	114,687	104,717	9,970	1,233	1,215	18	414	414	0	639	635	4	2,286	2,264	22
\$3,000 or more	138,336	124,663	13,673	1,750	1,730	20	497	497	0	833	799	34	3,080	3,026	54
No cash rent	57,713	(X)	57,713	825	(X)	825	629	(X)	629	555	(X)	555			
Median (dollars)	1,041	1,044	1,037	923	950	885	916	947	835	942	990	843			

Source: 2022 ACS 5 Year Estimates

Housing Costs

The housing cost data for Michigan, Berrien, Cass, Van Buren counties, and the region (Table 13) shows varying trends between owner-occupied and renter-occupied housing. In general, the majority of households in Michigan and the region pay less than \$1,000 per month for housing. Michigan's median monthly housing cost is \$1,041, with owner-occupied homes costing slightly more (\$1,044) compared to renter-occupied homes (\$1,037). In Berrien County, the median cost is significantly lower for renters (\$885), reflecting more affordable rental prices, while owner-occupied housing costs are \$950. Cass County and Van Buren County show similar patterns, with lower median housing costs for renters (\$835 and \$843, respectively) compared to owners (\$947 and \$990). Both counties also have fewer rental units at higher price points, with costs peaking at \$3,000 or more for a small number of renters. The data indicates that Berrien County has a larger proportion of renters paying between \$500 to \$799 and \$800 to \$999 compared to other counties in the region. The higher costs in Van Buren and Cass suggest a greater number of owner-occupied households in these areas paying lower-than-state-average monthly rents.

Housing costs play a crucial role in determining how much disposable income households have for participating in materials management services, such as waste collection, recycling, and composting. Higher housing costs in areas like Van Buren and Cass counties mean that households have less financial flexibility to invest in services or practices that support the circular economy. These residents may prioritize basic living expenses over the adoption of sustainable materials management solutions. Higher housing costs can also mean that households may have less time or energy to dedicate to separating waste streams, as individuals in higher-cost areas often face longer work hours or multiple jobs to manage their financial burdens. In contrast, areas with lower housing costs, such as Berrien County, may provide more financial leeway for households to take part in programs for waste diversion. Additionally, higher housing costs could also affect service frequency and the type of waste management options available, particularly in rural areas where larger distances between homes could increase service fees or make it harder to maintain efficient waste pickup systems.

Employment and Income

The labor force participation data for Michigan, Berrien, Cass, Van Buren counties, and the region shows that Michigan has a labor force participation rate of 61.5%, with 5 million people in the labor force. Berrien County has a similar participation rate at 61.1%, with 76,167 individuals in the labor force. Cass County and Van Buren County have slightly lower participation rates at 59.3% and 60.0%, respectively. Cass County has 25,183 individuals in the labor force, while Van Buren County has 36,133. The region as a whole

has a participation rate of 60.5%, with 137,483 people in the labor force. The unemployment rate in these areas varies, with Michigan at 6.0%, Berrien County at 6.6%, Cass County at 5.0%, and Van Buren County at 4.7%, indicating some regional variability in labor market conditions.

The commuting patterns for Michigan, Berrien County, Cass County, Van Buren County, and the region show that the majority of workers use personal vehicles. In Michigan, 77.1% of workers drive alone, while 8.1% carpool, and 1.1% use public transportation. Berrien County follows similar trends, with 78.4% driving alone and 8.7% carpooling. Cass County has the highest percentage of workers driving alone at 80.6%, while Van Buren County has 78.3% driving alone and 10.4% carpooling. Public transportation use is very low across all areas, ranging from 0.2% in Van Buren County to 0.4% in Berrien County. Walking to work is more common in Berrien County (2.8%) compared to other areas. A notable percentage of workers in these areas work from home, with Michigan at 10.2%, Berrien County at 8.6%, Cass County at 4.9%, and Van Buren County at 8.1%. The mean travel time to work varies, with Michigan at 24.5 minutes, and counties like Berrien and Van Buren having travel times of 21.5 minutes and 24.1 minutes, respectively, while Cass County has the highest travel time at 25 minutes.

The household income data for Michigan, Berrien County, Cass County, Van Buren County, and the region reveals some key trends. In Michigan, the median household income is \$68,505, while the mean is \$92,835. The income distribution shows that 17.2% of households earn between \$50,000 and \$74,999, and 16.5% earn between \$100,000 and \$149,999. Berrien County has a median household income of \$60,379, lower than Michigan's overall, with the highest percentage of households (17.5%) earning between \$50,000 and \$74,999. Cass County has a slightly higher median income of \$65,183, with 9.5% of households earning between \$25,000 and \$34,999. Van Buren County has a median income of \$65,531, with a higher proportion (14.5%) of households earning between \$75,000 and \$99,999. For the region, the median income is close to \$62,672, with significant percentages of households earning in the \$50,000-\$74,999 and \$35,000-\$49,999 ranges.

The industry data for Michigan, Berrien County, Cass County, Van Buren County, and the region highlights several key employment trends. In Michigan, the largest sector is Educational services, health care, and social assistance, which employs 23.2% of the civilian labor force. Manufacturing follows closely with 18.6% of workers. The construction industry employs 5.8%, while retail trade accounts for 10.8%. In Berrien County, manufacturing is the largest sector, employing 19.0% of workers, followed by educational services and health care at 23.2%. Cass County has a strong presence in manufacturing

(25.6%) and construction (9.2%), while Van Buren County shows a similar distribution, with manufacturing (22.9%) and educational services (20.2%) being significant sectors. The region as a whole follows similar patterns, with a notable proportion in manufacturing (21.3%) and educational services (21.9%). Other sectors like transportation and public administration represent smaller shares across the counties.

The labor force participation, commuting patterns, household income, and industry data for the region have direct implications for materials management. High labor force participation, particularly in manufacturing and construction, suggests a significant volume of industrial and commercial waste, which requires efficient collection and disposal services and options. In areas like Berrien and Cass counties, where manufacturing is a leading industry, the demand for raw or recycled materials is likely to be higher.

Additionally, commuting patterns, with a large percentage of workers driving alone, could result in longer travel times, leaving less time and energy for residents to engage in sustainable materials management practices, such as separating recyclables and compostables. This time constraint may lead to a heavier reliance on trash collection services and potential contamination of recyclable materials. To address these challenges, materials management services must promote education on sustainable practices and offer more efficient, user-friendly recycling systems for communities.

Household income trends also play a role; areas with lower median incomes, such as Berrien County, may face challenges in adopting sustainable materials management practices, like separating recyclables and compostables, due to lack of time and resources. This could result in a heavier reliance on trash collection services or lead to contamination of recyclable materials. Materials management services must therefore adapt to these local conditions by focusing on streamlining waste collection processes, educating residents and businesses about materials management practices, and ensuring efficient recycling and disposal systems that accommodate both high-demand industrial sectors and residential areas with limited resources.

Table 14: Employment, Commuting, Household Income, and Industry Data by County

	Michigan		Berrien County		Cass County		Van Buren County		Region	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Population 16 years and over	8,166,427		124,573		42,486		60,246		227,305	
In labor force	5,018,590	1	76,167	1	25,183	1	36,133	1	137,483	1
Not in Labor Force	3,147,837	0	48,406	0	17,303	0	24,113	0	89,822	0
Unemployment Rate		0		0		0		0		
COMMUTING TO WORK	Michigan		Berrien County		Cass County		Van Buren County		Region	
Workers 16 years and over	4,613,166		69,571		23,505		33,874			
Car, truck, or van --drove alone	3,557,290	1	54,549	1	18,939	1	26,529	1	100,017	1
Car, truck, or van -- carpooled	375,519	0	6,028	0	2,483	0	3,512	0	12,023	0
Public transportation (excluding taxicab)	50,639	0	297	0	90	0	84	0	471	0
Walked	96,130	0	1,914	0	572	0	756	0	3,242	0
Other means	62,105	0	812	0	266	0	241	0	1,319	0
Worked from home	471,483	0	5,971	0	1,155	0	2,752	0	9,878	0
Mean travel time to w	25 (X)		22 (X)		25 (X)		24 (X)		71	
HOUSEHOLD INCOME	Michigan		Berrien County		Cass County		Van Buren County		Region	
Total households	4,009,253		63,512		20,779		29,609		113,900	
Less than \$10,000	202,166	0	3,469	0	1,072	0	1,434	0	5,975	0
\$10,000 to \$14,999	165,381	0	3,221	0	651	0	1,264	0	5,136	0
\$15,000 to \$24,999	301,401	0	6,049	0	1,510	0	2,328	0	9,887	0
\$25,000 to \$34,999	327,120	0	5,978	0	1,974	0	3,079	0	11,031	0
\$35,000 to \$49,999	484,737	0	7,777	0	2,863	0	3,263	0	13,903	0
\$50,000 to \$74,999	689,069	0	11,125	0	3,632	0	5,302	0	20,059	0
\$75,000 to \$99,999	539,098	0	7,411	0	2,608	0	4,288	0	14,307	0
\$100,000 to \$149,999	660,499	0	9,734	0	3,252	0	5,143	0	18,129	0
\$150,000 to \$199,999	312,858	0	4,354	0	1,771	0	1,980	0	8,105	0

\$200,000 or more	326,924	0	4,394	0	1,446	0	1,528	0	7,368	0
Median household income (dollars)	68,505	(X)	60,379	(X)	65,183	(X)	65,531	(X)		
Mean household income (dollars)	92,835	(X)	86,184	(X)	90,773	(X)	81,574	(X)		
INDUSTRY	Michigan		Berrien County		Cass County		Van Buren County		Region	
Civilian employed population 16 years and over	4,711,444		71,098		23,921		34,382		129,401	
Agriculture, forestry, fishing and hunting, and mining	51,972	0	935	0	443	0	962	0	2,340	0
Construction	271,757	0	3,955	0	2,206	0	2,496	0	8,657	0
Manufacturing	874,789	0	13,534	0	6,117	0	7,864	0	27,515	0
Wholesale trade	103,734	0	1,330	0	588	0	631	0	2,549	0
Retail trade	508,440	0	7,709	0	2,496	0	3,758	0	13,963	0
Transportation and warehousing, and utilities	222,093	0	4,896	0	1,085	0	1,345	0	7,326	0
Information	56,642	0	825	0	260	0	297	0	1,382	0
Finance and insurance, and real estate and rental and leasing	269,943	0	3,138	0	1,053	0	1,654	0	5,845	0
Professional, scientific, and management, and administrative and waste management services	464,757	0	5,644	0	1,557	0	2,952	0	10,153	0
Educational services, and health care and social assistance	1,094,366	0	16,500	0	4,882	0	6,943	0	28,325	0
Arts, entertainment, and recreation, and accommodation and food services	417,897	0	6,592	0	1,710	0	2,890	0	11,192	0
Other services, except public administration	211,900	0	3,823	0	916	0	1,590	0	6,329	0
Public administration	163,154	0	2,217	0	608	0	1,000	0	3,825	0
Source: 2020 US Decennial Census										

The data for Cass, Berrien, and Van Buren counties in Southwest Michigan, compared to national statistics, offers some valuable insights:

- Cass County has a population of 51,604 with a Per Capita Income (PCI) of \$36,851 and a total value produced of \$1.9 billion.
- Berrien County, with a larger population of 153,938, has a PCI of \$36,764 and a significantly higher total value produced of approximately \$5.66 billion.
- Van Buren County has a population of 75,636, a PCI of \$32,361, and a total value produced of \$2.45 billion.

When these counties are combined, the Southwest Michigan region (population of 281,178) has a per capita income (PCI) of \$35,595.57, with a total value produced of about \$10.01 billion. Compared to the national average PCI of \$41,261, the regional values are slightly lower. Additionally, the 24-month average unemployment rate for Southwest Michigan stands at 4.5%, which might be an indicator of regional employment trends.

Table 15: Economic Indicators for Cass, Berrien, and Van Buren Counties in Southwest Michigan

	Population	Per Capita Income	Total Value Produced	24-month avg unemployment rate
Cass	51,604	\$36,851	1,901,659,004	
Berrien	153,938	\$36,764	5,659,376,632	
Van Buren	75,636	\$32,361	2,447,656,596	
SW Michigan	281,178	\$35,596	10,008,692,232	4.5
USA		\$41,261		3.8

Urban and Rural

The housing data for Michigan and its counties—Berrien, Cass, and Van Buren—reveals significant urban-rural divides. Michigan has a total of 4,570,173 housing units, with 71.6% in urban areas and 28.4% in rural areas. In Berrien County, 71.8% of housing units are located in urban areas, while 28.2% are in rural areas. In stark contrast, Cass County has only 24.7% of its housing units in urban areas, with a majority of 75.3% in rural areas. Van Buren County follows a similar trend to Cass, with 25.3% of its housing units in urban areas and 74.7% in rural areas. Overall, in the Southwest Michigan region, which encompasses all three counties, 50.9% of housing units are urban, while 49.1% are rural, reflecting a nearly even split. This urban-rural distinction can influence factors such as housing availability, infrastructure, and regional economic activities, which may in turn affect local materials management strategies.

In terms of materials management, the urban-rural divide also has a significant impact on materials collection and recycling efforts. Urban areas, with higher population densities, tend to have more accessible materials management services and greater opportunities for recycling and composting initiatives. In contrast, rural areas, like those in Cass and Van Buren counties, may face challenges such as fewer collection points and longer distances to recycling centers. These disparities can lead to decreased participation in material diversion methods in rural areas and may require different strategies for educating residents about sustainable practices. Materials management services in the region must address these challenges by implementing tailored solutions that accommodate the unique needs of both urban and rural households, ensuring efficient materials diversion and resource recovery across diverse communities.

Table 16: Urban vs Rural Housing Units in Michigan and Southwest Michigan Counties

Urban vs Rural Housing Units	Michigan		Berrien County		Cass County		Van Buren County		Region	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Total:	4,570,173		76,821		25,291		36,948		139,060	
Urban	3,273,190	71.6%	55,144	71.8%	6,236	24.7%	9,346	25.3%	70,727	50.9%
Rural	1,296,983	28.4%	21,677	28.2%	19,055	75.3%	27,602	74.7%	68,335	49.1%

Transportation

The data on vehicle availability and commuting across Michigan, as well as Berrien, Cass, and Van Buren counties, provides valuable insights into the region’s transportation dynamics. Statewide, Michigan has an aggregate of 3,726,495 vehicles used for commuting, with Berrien, Cass, and Van Buren counties accounting for 57,305, 20,085, and 28,105 vehicles, respectively. In terms of gender, Michigan’s commuting population includes 1,991,425 males and 1,735,070 females. Within the counties, Berrien has 30,250 male commuters and 27,055 female commuters, Cass has 10,735 males and 9,355 females, and Van Buren has 15,290 males and 12,815 females.

When examining vehicle availability in households, 287,851 households in Michigan have no vehicle, including 4,976 in Berrien, 852 in Cass, and 1,620 in Van Buren. Households with one vehicle are more common, with 1,370,116 statewide, including 22,320 in Berrien, 6,204 in Cass, and 9,194 in Van Buren. Two vehicles are available in 1,541,338 households across Michigan, with Berrien accounting for 24,394, Cass for 8,273, and Van Buren for 11,851. Meanwhile, 553,224 Michigan households have three vehicles, including 7,962 in Berrien, 3,522 in Cass, and 4,425 in Van Buren. Finally, households with four or more

vehicles number 256,724 statewide, with 3,860 in Berrien, 1,928 in Cass, and 2,519 in Van Buren.

This data underscores the region’s heavy reliance on personal vehicles for commuting. Most households have access to one or two vehicles, while a smaller proportion own three or more, reflecting varied levels of vehicle availability across the region.

The data on vehicle availability and household transportation across Michigan, Berrien, Cass, and Van Buren counties highlights a significant portion of the population that does not have access to personal vehicles, which has direct implications for materials management services. These households may face greater barriers to participating in recycling and waste diversion programs due to the lack of transportation options for transporting recyclables to collection centers. Without access to a vehicle, residents may be less able to make trips to recycling facilities, leading to lower recycling rates. Materials management services must account for these challenges by offering alternative solutions, such as curbside pickup or providing additional neighborhood drop-off points. Additionally, outreach and education efforts should focus on making materials management practices more accessible and convenient for households without vehicles, ensuring they can contribute to sustainability efforts despite transportation limitations.

Table 17: Vehicle Usage and Availability for Commuting in Michigan and Southwest Michigan Counties

	Michigan		Berrien County		Cass County		Van Buren County	
	Estimate	Margin Of Error	Estimate	Margin Of Error	Estimate	Margin Of Error	Estimate	Margin Of Error
Aggregate number of vehicles (car, truck, or van) used in commuting:								
Male	3,726,495	12,059	57,305	1,309	20,085	716	28,105	838
Female	1,991,425	7,727	30,250	977	10,735	474	15,290	600
	1,735,070	7,000	27,055	789	9,355	449	12,815	454
Households								
Total:	4,009,253	7,688	63,512	661	20,779	386	29,609	494
No vehicle available	287,851	3,975	4,976	536	852	191	1,620	259
1 vehicle available	1,370,116	7,756	22,320	770	6,204	419	9,194	680
2 vehicles available	1,541,338	8,570	24,394	864	8,273	481	11,851	558
3 vehicles available	553,224	4,796	7,962	533	3,522	381	4,425	424
4 or more vehicles available	256,724	3,329	3,860	367	1,928	319	2,519	344