

# SW MI Materials Management Planning Committee Agenda

January 13, 2025

1:00 p.m.

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

1. **Call to Order & Roll Call** Kalli Marshall, Chair
2. **Approval of Agenda**
3. **Approval of Minutes**
4. **Communications**
5. **Old Business**
  - Work Program Extension Bekah Schrag, DPA
6. **Hearings**
  - Recycling Programs – Berrien County Jill Adams, Director of Parks Dept.
  - Recycling Programs – Cass County Roseann Marchetti, Cass Co.
  - Recycling Programs – Van Buren County Kalli Marshall, VBCD
7. **New Business**
  - MRC Timeline Bekah Schrag, DPA
  - Demographics Bekah Schrag, DPA
  - EGLE Reports – Facilities, Services, Infrastructure Bekah Schrag, DPA
8. **Public Comment**
9. **Miscellaneous**
10. **Adjournment**

*Next meeting will be held **February 10 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](mailto:schragb@swmpc.org)



# Minutes

## SW MI Materials Management Planning Committee

Wednesday, November 20, 2024, at 9:00 a.m.

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

### **MEMBERS PRESENT:**

Baran, Bob  
Doroh, Jeff  
Egelhaaf, John  
Giczewski, John  
Huser, Amy  
Kanine, Jennifer  
Kras, Bob  
Kuhn, David  
Marchetti, Roseann  
Marshall, Kalli  
Muth, Deah  
Phillips, Christopher  
Vollrath, Dave

### **MEMBERS ABSENT:**

Psholka, Al  
Schincariol, Paul

### **PUBLIC PRESENT:**

Haneberg, Kim  
Palthe, Justin  
Thomson-Peterson, Angela

### **1. CALL TO ORDER**

Bekah Schrag, Associate Planner with the Designated Planning Agency (DPA), the Southwest Michigan Planning Commission (SWMPC) called the meeting to order at 9:04 am. Committee members introduced themselves and roll call was taken by Maria Vettrano, Office Manager of the DPA.

## **2. ACCEPTANCE AND/OR REVISION OF CONSENT AGENDA**

Kalli Marshall moved to “**ACCEPT THE CONSENT AGENDA.**” Bob Baran seconded the motion, which carried unanimously.

## **3. HEARING**

### *Presentation and Project Overview*

Bekah Schrag of the DPA presented the project overview. She began with updates to Part 115 and how the Solid Waste Management Plan mandate has been replaced with Materials Management Plan mandate. She shared the goals and responsibilities of the plan as defined by EGLE. Schrag then went over the criteria of the Materials Management Planning Committee, benchmarks of recycling standards, grants and incentives, and the planning process. She explained how the work program deadline submission to EGLE is December 30th and suggested we ask for an extension.

Roseann Marchetti asked if they will receive the slides of the presentation, to which Schrag responded she will email it to the Committee members.

## **4. NEW BUSINESS**

### *Bylaws Review & Approval*

Bekah Schrag went over the Bylaws and opened the floor for questions and comments.

Roseann Marchetti explained why she does not approve of the proxy participation. John Egelhaaf said the only intent of the proxy is to be able to report back to the Committee member on what transpired during the meeting.

Jeff Doroh asked if a Zoom option would be available. Schrag explained how members present virtually cannot vote per the Open Meetings Act.

The Committee discussed the future location of meetings and what Committee vacancies need to be filled. Marchetti stated she does not believe a member should be removed without cause. Schrag replied that “or without cause” can be taken out of Article III Section 7, Removal of a Member. Discussion then ensued regarding the

section language on quorum. The consensus was for the quorum to consist of a majority with the addition “of those seated and serving.”

Egelhaaf discussed the need for a recording secretary. Kalli Marshall shared that someone in her office might be interested. The Committee agreed to leave the proxy verbiage as is and to leave out an addition of video conferencing option in the bylaws.

Final changes to be made to the Bylaws were reviewed and included:

Article III Section 2, change Section 5 to Section 6.

Article III Section 7, remove “or without cause” regarding removal of a member.

Article III Section 8, remove “and” then add “regarding the topic.”

Article V Section 1, add “must comply with the Open Meetings Act.”

Article VIII Section 1, add “of those seated and serving” to the quorum.

Kallie Marshall moved to “**APPROVE MMPC BYLAWS WITH REVISIONS.**” Christopher Phillips seconded the motion, which carried unanimously by roll call vote.

### ***Appointment of Officers & Approval***

Bekah Schrag opened the floor to any members who would like to take an officer position. Kalli Marshall offered to be Chair, Christopher Phillips Vice Chair, and Roseann Marchetti Secretary provided there will be a recording secretary to take notes and minutes. David Kuhn suggested we record the meetings, granted the Committee is notified of the recording.

Roseann Marchetti moved to “**APPROVE APPOINTMENT OF OFFICERS.**” John Egelhaaf seconded the motion, which carried unanimously by roll call vote.

### ***Discuss 2025 Meeting Dates & Approval***

Schrag suggested the Committee meet every third Monday of the month from 1-3 pm. She will email meeting dates, presentation slides, and minutes. The Committee agreed to cancel the December meeting and meet again in January.

Kalli Marshall suggested to have future meetings at the Pokagon Band Community Center.

John Egelhaaf moved to “**APPROVE 2025 MEETING DATES.**” Roseann Marchetti seconded the motion, which carried unanimously by roll call vote.

## **5. PUBLIC COMMENT/PRIVILEGE OF THE FLOOR**

No public comment.

Kalli Marshall shared a sample logo for the Committee and suggested a name change from Materials Management Planning Committee to Materials Management Coalition.

## **6. ADJOURNMENT**

John Egelhaaf moved to adjourn the meeting. Bob Baran supported the motion. Bekah Schrag declared the meeting adjourned at 10:52 am.

Submitted by:  
Maria Vettraino

Date:  
November 20, 2024

# 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
<b>Berrien County</b>	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%
City of Benton Harbor	11,240	10,038	9,103	-19.01%
City of Bridgman	2,445	2,291	2,096	-14.27%
City of Buchanan	4,921	4,456	4,300	-12.62%
City of Coloma	1,619	1,483	1,465	-9.51%
City of New Buffalo	2,200	1,883	1,708	-22.36%
City of Niles	12,105	11,600	11,988	-0.97%
City of St. Joseph	8,671	8,365	7,856	-9.40%
City of Watervliet	1,855	1,735	1,669	-10.03%
Subtotal	89,973	83,701	80,370	-10.67%
<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%
Stevensville	1,190	1,142	1,147	-3.61%
Three Oaks	1,827	1,622	1,370	-25.01%
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%
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
<b>Cass County</b>	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%
City of Niles in Cass County	5	1	-	
Subtotal	6,152	6,208	5,721	-7.01%



*Census population figures for the following villages have been included in the figures (above) for the townships in which they are located.*

<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, Alma (+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
<b>Van Buren County, Overall</b>	76,263	76,258	75,587	-0.89%
<i>Townships</i>				
Alma 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%
<b>Subtotal</b>	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%
<b>Subtotal</b>	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
<b>Region</b>	289,820	285,364	281,492	-2.87%
<b>Michigan</b>	9,938,444	9,883,640	10,077,331	1.40%

## 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

The racial composition of Michigan shows greater diversity compared to the region, which is predominantly White (77.8%) with less representation of Black (9.3%) and Asian (1.4%) populations. Cass County stands out with the highest proportion of White residents (85.3%) and minimal racial diversity, while Berrien County is the most diverse, closely reflecting Michigan’s racial breakdown, particularly for Black (13.9%) and Asian (2.1%) populations. Van Buren County exhibits a notable presence of individuals identifying as "Some Other Race" (5.8%) and "Two or More Races" (8.2%), indicating diversity outside of major racial categories. 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: Racial Composition of Michigan, Berrien, Cass, Van Buren Counties, and Southwest Michigan Region (2020 Census Data)**

Race	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%	44005	85.3%	61345	81.2%	218958	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%

Source: US 2020 Decennial Census

Race can influence materials management in various ways due to disparities in access to resources, education, and infrastructure across different racial 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 or face economic

challenges. 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, are able to participate in and benefit from sustainable materials management practices.

## Migrant and Seasonal Workers

The table 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 7: Total Migrant Labor in Southwest Michigan by County in 2020**

		Berrien County	Cass County	Van Buren County	Region
<b>Total Migrant Workers</b>	Farms	74	14	75	163
	Workers	1,590	374	4,115	6,079
<b>Migrant farm labor on farms with hired labor</b>	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 8 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 8: 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 9: 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 10: 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 11: 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 12: 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 12) 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 13: 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		
<b>COMMUTING TO WORK</b>	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	
<b>HOUSEHOLD INCOME</b>	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)		
<b>INDUSTRY</b>	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 14: 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 15: 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 16: 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
<b>Households</b>								
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