

TRANSPORTATION SYSTEM PERFORMANCE INDICATORS

INTRODUCTION

This narrative presents a set of system performance indicators and the base data relevant to the indicators. The purpose of the performance indicators is to provide some quantitative evaluation of the ability of the Sheboygan metropolitan planning area to move toward the goals stated in the *Year 2045 Sheboygan Area Transportation Plan (SATP)*; these goals can be found in Chapter 4 of the plan (Mission Statement, Goals and Objectives). At this time, the majority of the indicators are not tied to any specific performance goals, and are only intended as a planning tool. Over time, it will become possible and/or desirable to compile realistic performance goals; however, some experience and trend data would be necessary to develop such quantitative goals.

PERFORMANCE INDICATORS

Safety

Streets and Highways

Indicators: Fatalities, Fatality Rates, Serious Injuries and Serious Injury Rates

Data Source: Traffic Operations and Safety Laboratory, University of Wisconsin – Madison; and National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS) Encyclopedia

Base Data:

Table 1: Fatalities and Serious Injuries in Sheboygan Metropolitan Planning Area: 2012 – 2016

	2012	2013	2014	2015	2016	Average Annual 2012 - 2016
Fatalities	3	5	2	5	2	3.4
Fatality Rate	0.539	0.895	0.369	0.902	0.360	0.615
Serious Injuries	30	32	12	13	17	20.8
Serious Injury Rate	5.391	5.731	2.217	2.345	3.063	3.760

Figure 1: Fatalities

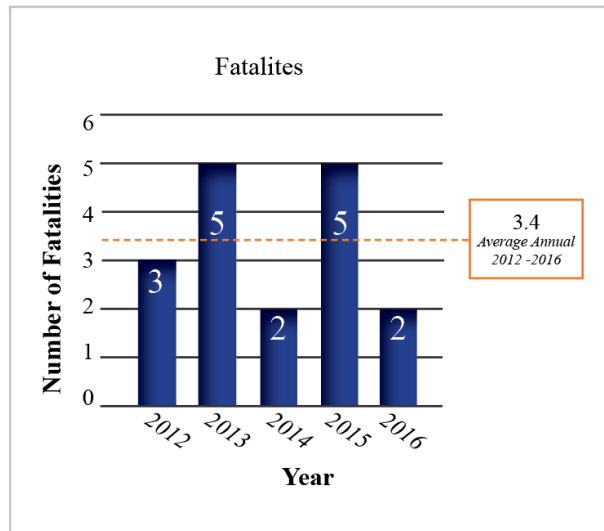


Figure 2: Fatality Rate

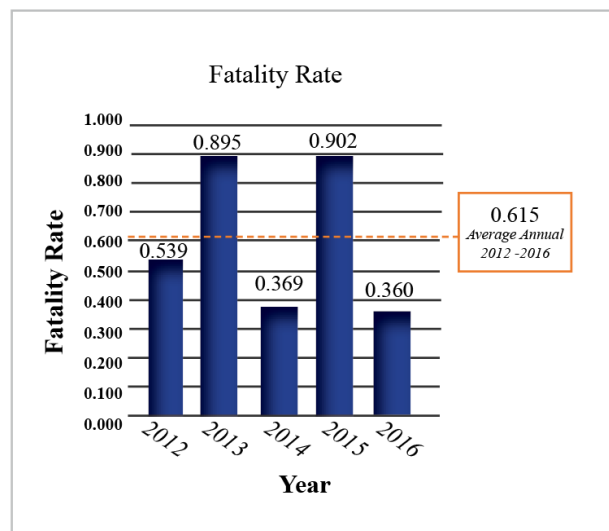


Figure 3: Serious Injuries

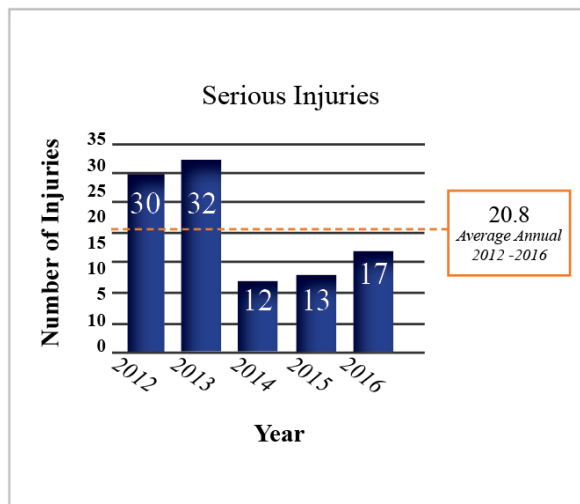
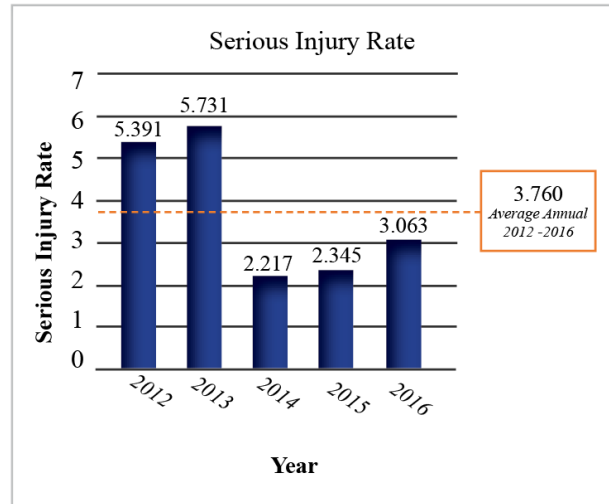


Figure 4: Serious Injury Rate



Indicator: Reportable Crashes by Crash Type

Data Source: Traffic Operations and Safety Laboratory, University of Wisconsin – Madison; and National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS) Encyclopedia

Base Data:

Table 2: Reportable Crashes by Crash Type in the Sheboygan Metropolitan Planning Area: 2012 – 2016

	2012	2013	2014	2015	2016
Total Crashes	1,170	1,215	1,193	1,150	1,535
Class A (Serious Injury) Crashes	29	28	12	12	15
Class B (Moderate Injury) Crashes	116	124	103	115	125
Class C (Minor Injury) Crashes	153	127	127	156	185
Class K (Fatality) Crashes	3	4	2	5	2
Property Damage Only Crashes	869	932	949	862	1,208

Figure 5A: Reportable Crashes by Type: Fatality and Injury Crashes

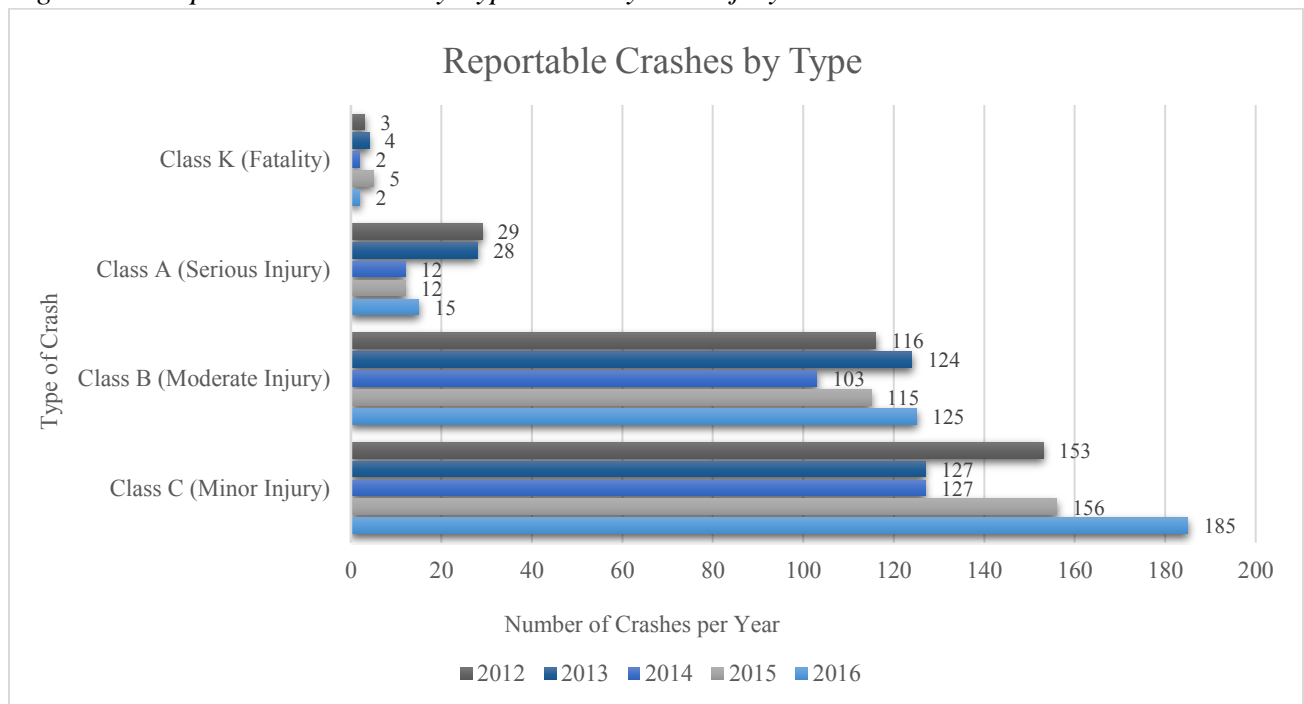
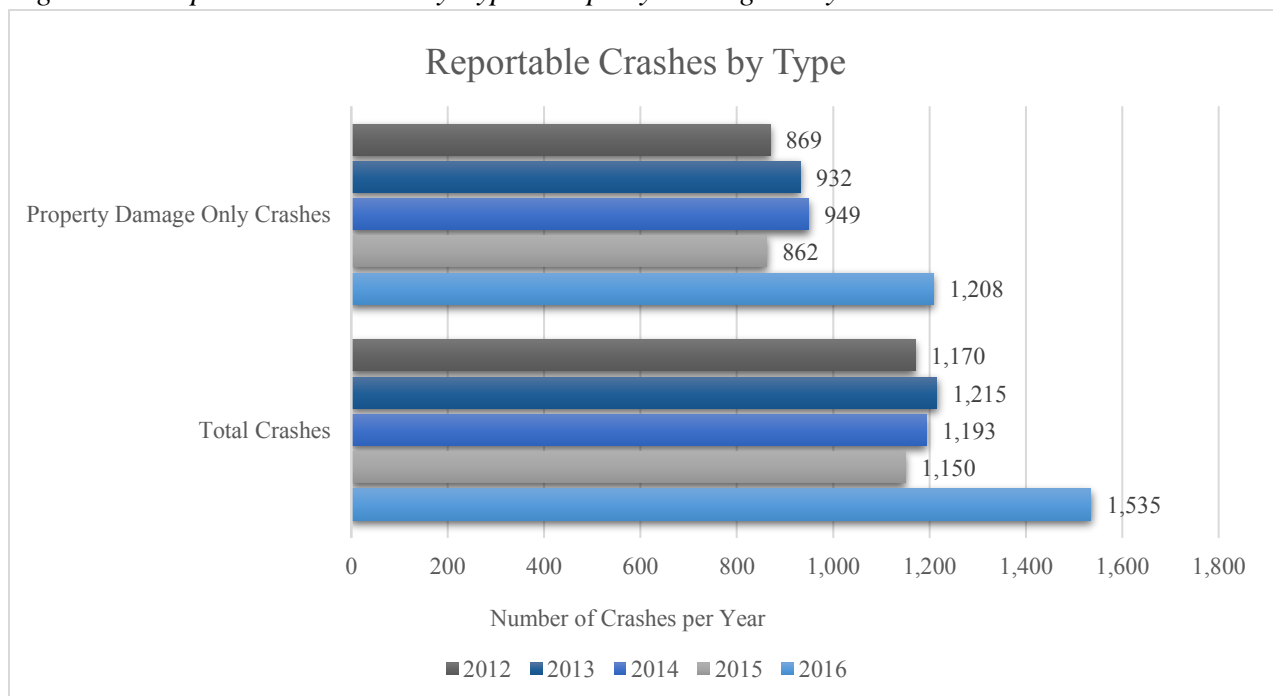


Figure 5B: Reportable Crashes by Type: Property Damage Only and Total Crashes



Transit

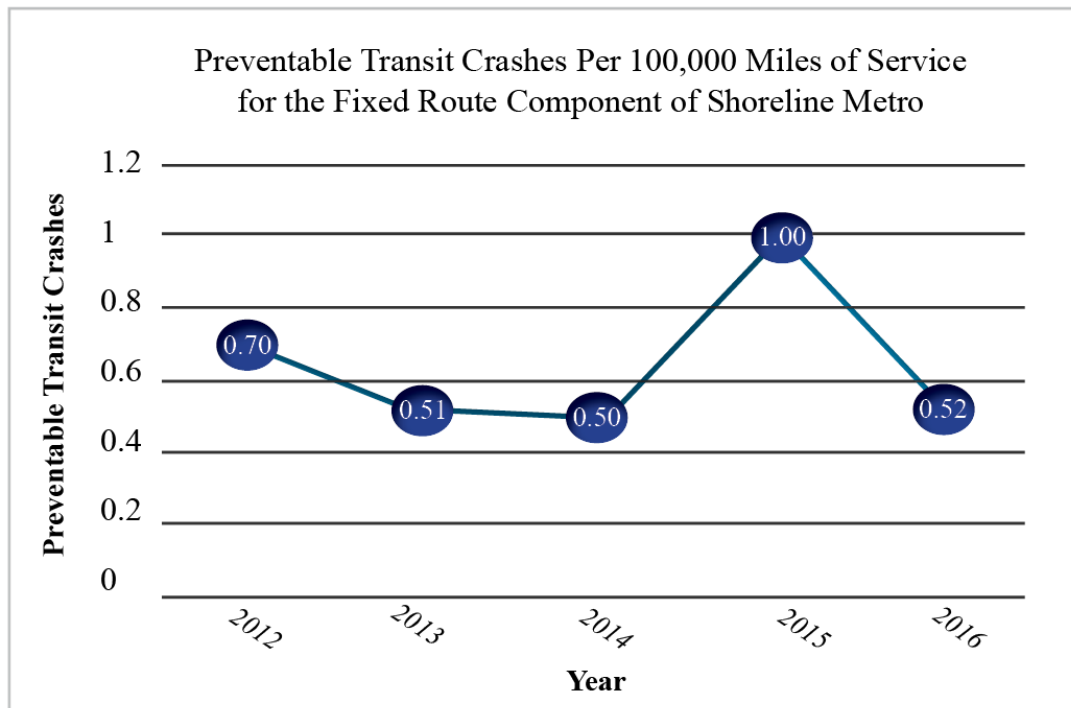
Indicator: Transit crashes per 100,000 miles of service

Data source: Shoreline Metro, 2016

Base Data:

With three preventable crashes and 577,826 vehicle revenue miles, there were **0.52** preventable transit crashes per 100,000 miles of service for the fixed-route component of Shoreline Metro in 2016.

Figure 6: Preventable Transit Crashes per 100,000 Miles of Service for the Fixed Route Component of Shoreline Metro



Non-Motorized Travel

Indicator: Non-Motorized Fatalities and Serious Injuries

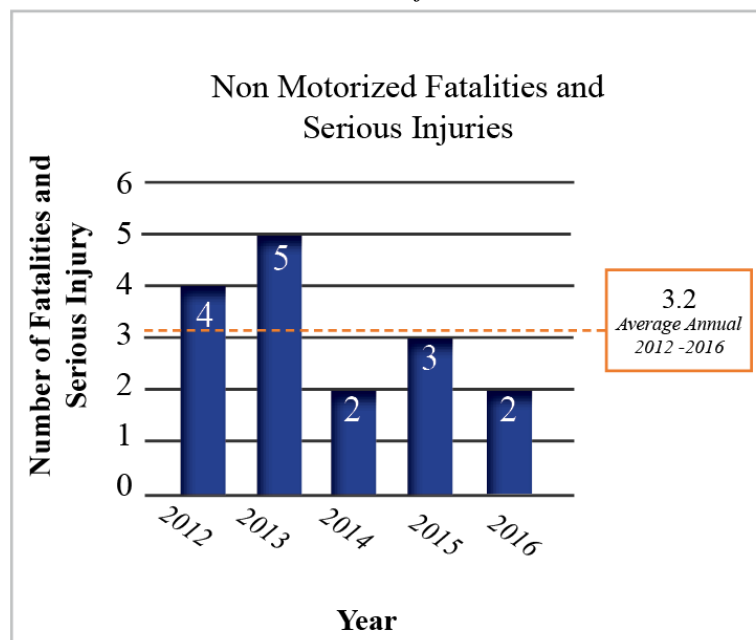
Data source: Traffic Operations and Safety Laboratory, University of Wisconsin – Madison; and National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS) Encyclopedia

Base Data:

Table 3: Non-Motorized Fatalities and Serious Injuries in Sheboygan Metropolitan Planning Area: 2012 – 2016

	2012	2013	2014	2015	2016	Average Annual 2012 - 2016
Bicycle Fatalities	1	1	0	1	0	
Bicycle Serious Injuries	0	0	0	1	0	
Pedestrian Fatalities	0	1	0	0	0	
Pedestrian Serious Injuries	3	3	2	1	2	
Total	4	5	2	3	2	3.2

Figure 7: Non-Motorized Fatalities and Serious Injuries



Security

There are no security measures at this time.

Accessibility and Mobility of People and Freight

Streets and Highways

Indicator: Level of Service

Data Source: WisDOT – Traffic Counts – Wisconsin Highway Traffic Volume Data Publication (Last full publication for Sheboygan County for data collected in 2014, with some preliminary data available for 2017).

Base Data:

Traffic counts can be found at the following website:

<https://trust.dot.state.wi.us/roadrunner/> (Note: This is a statewide interactive map; zoom in to the Sheboygan metropolitan planning area is required).

Indicator: System Mileage/Lane Miles

Data Source: WisDOT, Lane Miles in Model Base Year of 2010

Base Data: There was a total of **1,563.788** lane miles in Sheboygan County according to the WisDOT Northeast Region travel demand forecast model in the base year of 2010.

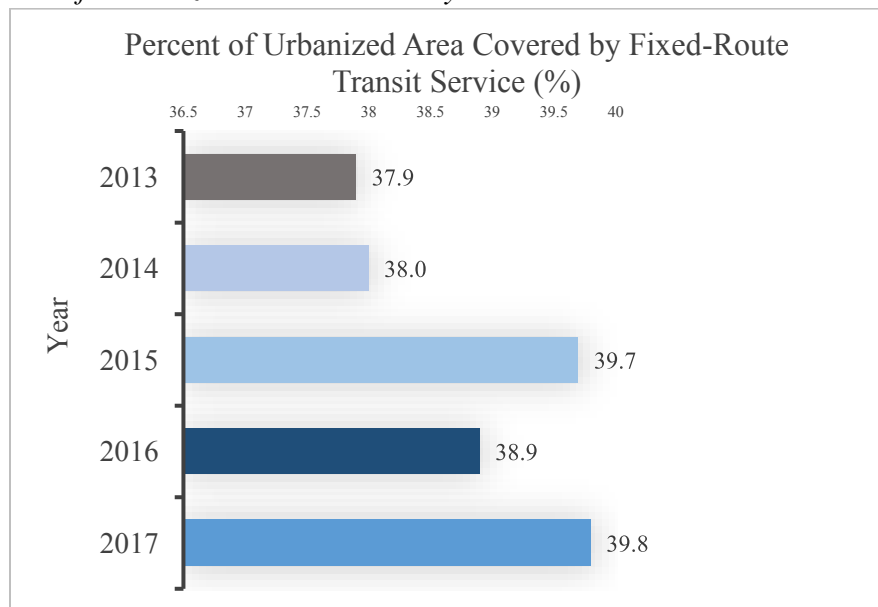
Transit

Indicator: Percentage of Urbanized Area Served by Transit

Data Source: Shoreline Metro and Bay-Lake Regional Planning Commission (GIS, 0.25 mile buffer around Shoreline Metro fixed routes).

Base Data: The “transit service area” (0.25 mile buffer around Shoreline Metro fixed routes) is currently 19.73 square miles in total, but is 19.38 square miles in the Sheboygan Urbanized Area. The Sheboygan Urbanized Area is 48.69 square miles. Some **39.8** percent of the urbanized area is covered by fixed-route transit service.

Figure 8: Percent of Urbanized Area Covered By Fixed-Route Transit Service



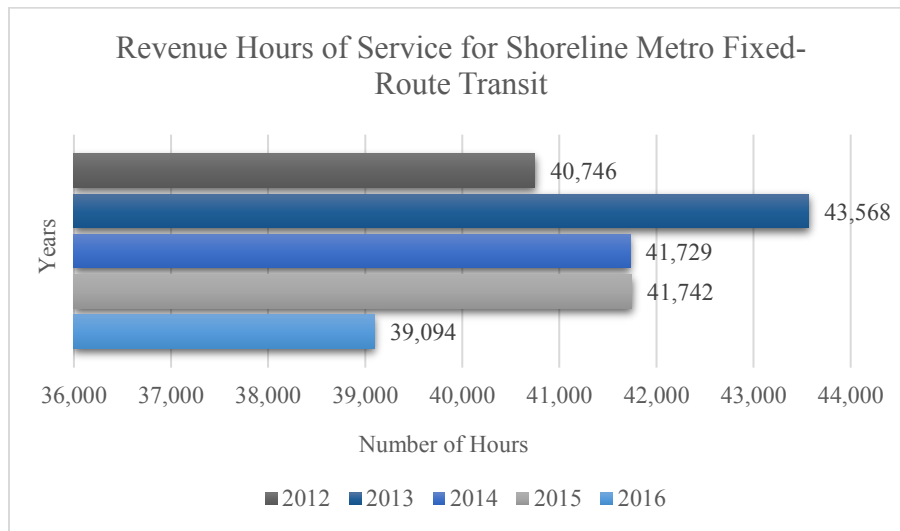
There is no shared-ride taxi service in the Sheboygan Urbanized Area.

Indicator: Revenue Hours of Service

Data Source: National Transit Database (NTD) or Transit Operator

Base Data: There were **39,094** revenue hours of service for Shoreline Metro fixed-route transit in 2016.

Figure 9: Revenue Hours of Service for Shoreline Metro Fixed-Route Transit

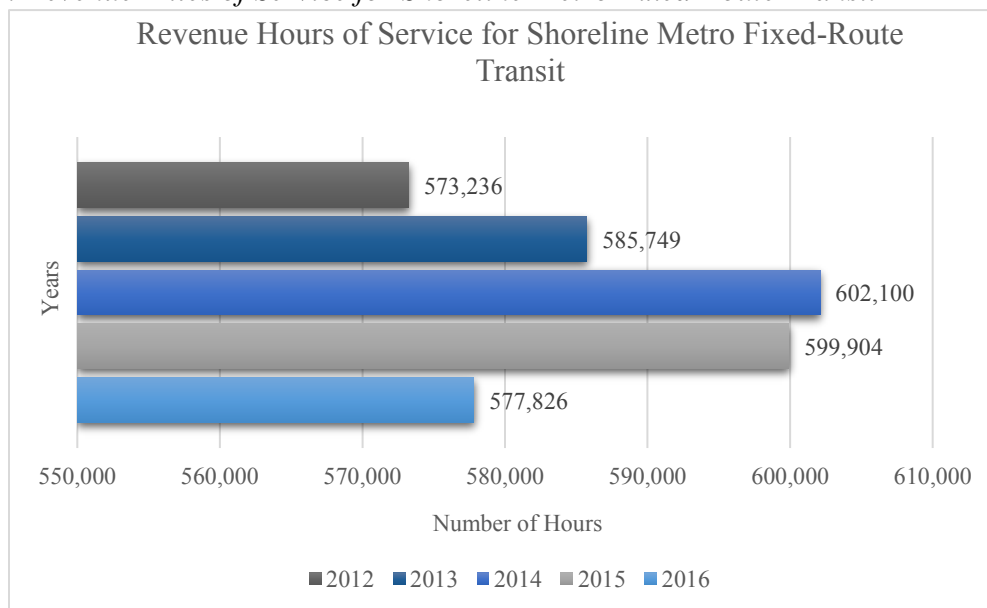


Indicator: Revenue Miles of Service

Data Source: National Transit Database (NTD) or Transit Operator

Base Data: There were **577,826** revenue miles of service for Shoreline Metro fixed-route transit in 2016.

Figure 10: Revenue Miles of Service for Shoreline Metro Fixed-Route Transit



Other Passenger Transit Services

Indicator: Inventory of Other Passenger Transportation Serving the Sheboygan Metropolitan Planning Area

Data Source: 2016 Coordinated Public Transit – Human Services Transportation Plan for Sheboygan County, Wisconsin, Table Listing Private Transportation Providers in Sheboygan County

Base Data:

Table 4: Private Transportation Providers in Sheboygan County

Company	Type(s) of Service Provided
Airport Connection and GO Riteway 1817 Martin Avenue Sheboygan, WI 53083	Airport Limousine Service to and from Mitchell International Airport in Milwaukee and to and from Chicago's O'Hare and Midway Airports, and Service Connecting the City of Sheboygan to Lakeshore Technical College's Cleveland campus
All Star Taxi 1219 South 9th Street Sheboygan, WI 53081	Taxi Service
Custom Care and Transport Service, LLC N3803 Horace Mann Road Sheboygan Falls, WI 53085	Accessible Transportation
Discovery Coach, Inc. 1139 Pennsylvania Avenue Sheboygan, WI 53081	Charter, Tour and School Bus Services
Harms' Transportation N7940 State Highway 42 Howards Grove, WI 53083	School Bus Service
Heidenreiter Bus Service, Inc. 400 Cleveland Street Sheboygan Falls, WI 53085	School Bus Service
Indian Trails Bus Lines 828 Pennsylvania Avenue Sheboygan, WI 53081	Intercity Bus Service
Jefferson Lines 828 Pennsylvania Avenue Sheboygan, WI 53081	Intercity Bus Service
Johnson School Bus Service 808 Valley Road Plymouth, WI 53073 AND 220 North Commerce Street Cedar Grove, WI 53013	School Bus Service
Lakeshore Transportation 426B Factory Street Plymouth, WI 53073	Accessible Transportation

Table 4: Private Transportation Providers in Sheboygan County

Company	Type(s) of Service Provided
Lamers Bus Lines (Bought Otte Bus Service) 2407 South Point Road Green Bay, WI 54313	Charter Bus Service, Weekend Transportation to and from UW Milwaukee and UW Green Bay, and School Bus Service in Some Locales
Luxury Limousine W5728 Emerald Lane Plymouth, WI 53073	Limousine Service
Oostburg Ambulance 20 South 11th Street Oostburg, WI 53070	Ambulance Service
Orange Cross Ambulance 1919 Ashland Avenue Sheboygan, WI 53081	Ambulance Service
Santana's Limousine 1019 Erie Avenue Sheboygan, WI 53081	Limousine Service
Sheboygan County Interfaith Organization 1251 Geele Avenue Sheboygan, WI 53081	Transportation (using volunteer drivers) in Sheboygan County for the elderly and disabled and for women with children, for medical and other trip purposes
Stardust Limousine 631 New York Avenue Sheboygan, WI 53081	Limousine Service
The Best Taxi 611 South 15th Street Sheboygan, WI 53081	Taxi Service
Transtar Medical Transport 120 West Main Street, PO Box 509 Campbellsport, WI 53010	Accessible Transportation
Wheelchair Taxi and Transportation 2516 Superior Avenue Sheboygan, WI 53081	Accessible Transportation
Yellow Cab 2917 North 15th Street Sheboygan, WI 53083	Taxi Service

In addition, the Sheboygan Metropolitan Planning Area is served by informal “taxi” style transportation services, such as Uber and Lyft. These services are not listed in Table 4 because they do not typically have a specific location (street address), but are accessed by using an application on one’s smart phone. Uber can be found at: <https://www.uber.com/ride/>, while Lyft can be found at: [https://www.lyft.com/\(.\)](https://www.lyft.com/(.)) There is also a newer taxi service in Sheboygan known

as Blue Cab; while this service does not list a business address, they can be contacted by phone and are also active on Facebook.

Bicycle Facilities

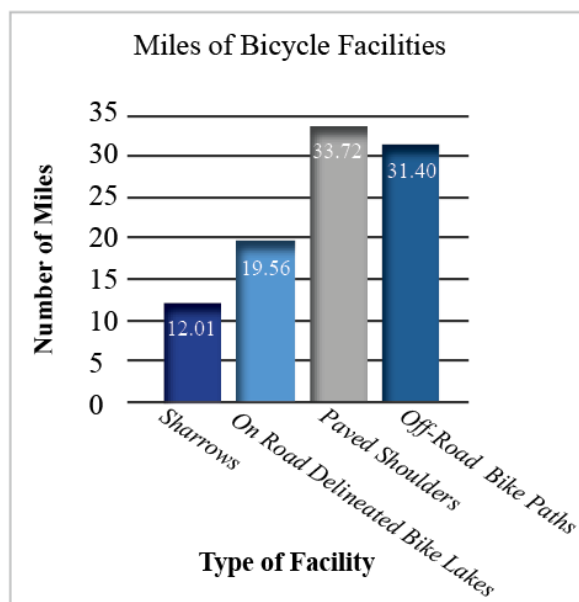
Indicator: Bicycle Facilities (Miles)

Data Source: Sheboygan County Planning and Conservation Department, *Sheboygan County Pedestrian and Bicycle Comprehensive Plan: 2045*, and Bay-Lake Regional Planning Commission (GIS Calculations)

Base Data: Within the Sheboygan metropolitan planning area, there are approximately:

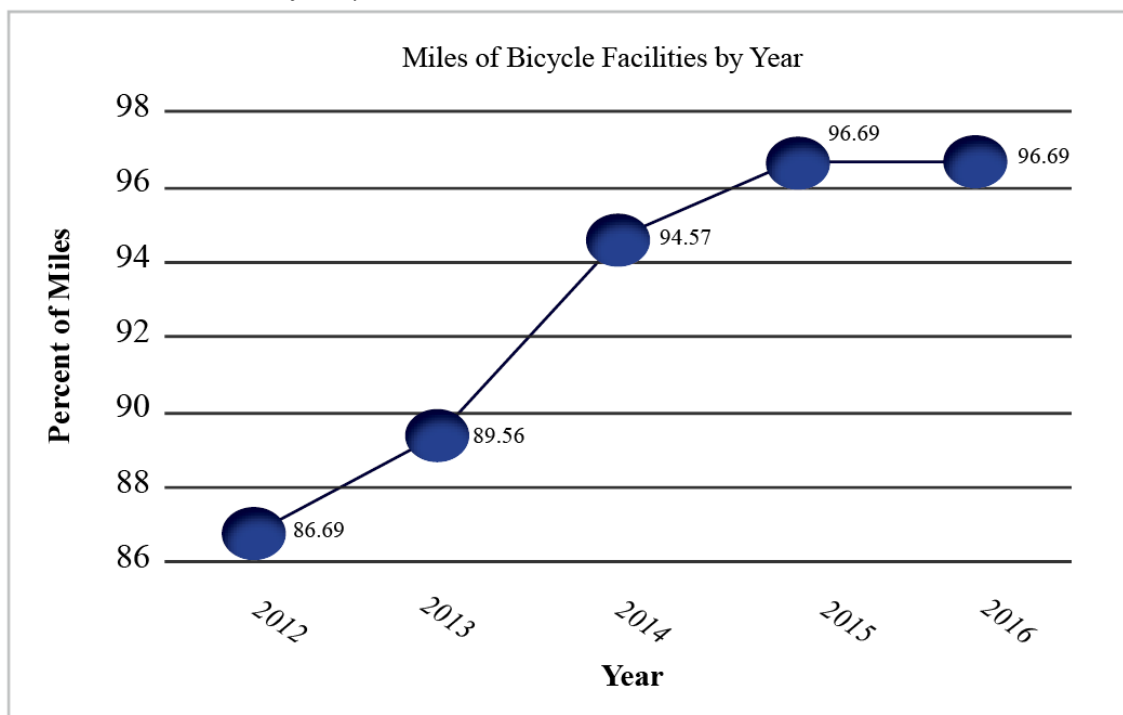
- 12.01 miles of “sharrows” (marked roadways where bicyclists use the road with motorists, with no separation of use for bicyclists);
- 19.56 miles of on-road delineated bike lanes;
- 33.72 miles of paved shoulders; and
- 31.40 miles of off-road bike paths (shared-use trails).

Figure 11: Miles of Designated Bicycle Facilities in the Sheboygan Metropolitan Planning Area



This involves a total of approximately 96.69 miles of bicycle facilities in the Sheboygan metropolitan planning area. Many facilities have been built since 2007 through the Sheboygan County Non-Motorized Transportation Pilot Program (NMTTPP), with the final projects to be built over the next three to four years. It should be noted that approximately 0.45 miles of sidewalk were built in 2016 as part of the Taylor Drive Bicycle and Pedestrian Trail project in the City of Sheboygan. No additional facilities were built in 2017.

Figure 12: Overall Miles of Bicycle Facilities 2012 - 2016



Freight

Indicators: Level of Service for Designated Truck Routes and for NHS Routes

Data Source: WisDOT – Traffic Counts – Wisconsin Highway Traffic Volume Data Publication (Last full publication for Sheboygan County for data collected in 2014, with some preliminary data available for 2017), and Maps 5.12 (Freight Routes and Terminals) and 5.16 (Enhanced National Highway Base System) of the *Year 2045 SATP*.

Traffic counts can be found at the following website:

<https://trust.dot.state.wi.us/roadrunner/> (Note: This is a statewide interactive map; zoom in to the Sheboygan metropolitan planning area is required).

Indicator: Truck Counts

Data Source: WisDOT – Vehicle Classification Data. Traffic Count Data – Wisconsin Vehicle Classification Data Publication

Environment

Air Quality

Indicator: Monitored levels of criteria pollutants: ozone, PM 2.5, etc.

Data Source: USEPA

The only pollutant for which data were available in Sheboygan County was ground-level ozone. Sheboygan County exceeds the 0.075 parts per million threshold for the 2008 “eight hour” standard based on 2013 through 2015 and 2014 through 2016 readings, and is expected to continue to exceed this standard based on 2015 through 2017 preliminary readings. Sheboygan

County is having sufficient difficulty in meeting the standard that it has been reclassified from a marginal to a moderate nonattainment area by USEPA. The Wisconsin Department of Natural Resources is constantly monitoring ozone concentrations, but violations of the “eight hour” standard persist.

Recognizing that ozone concentrations are a problem that primarily impacts the Lake Michigan shoreline, the Wisconsin Department of Natural Resources has been working with local officials and with the USEPA to attempt to decrease the size of the nonattainment area from the entire county to eastern Sheboygan County. The Wisconsin Department of Natural Resources has placed a monitor in the northwestern portion of the metropolitan planning area in an attempt to measure decreases in ozone concentrations away from Lake Michigan; this monitor has measured readings generally below the standard and significantly lower than the monitor at Kohler-Andrae State Parks adjacent to Lake Michigan.

The USEPA has lowered the “eight hour” standard from 0.075 to 0.070 parts per million; this is known as the 2015 “eight hour” standard. This is likely to keep the Sheboygan metropolitan planning area in nonattainment status for the foreseeable future.

Integration and Connectivity of the Transportation System, Across and Between Modes, For People and Freight

Streets and Highways

Indicator: Designated park-and-ride capacity and use

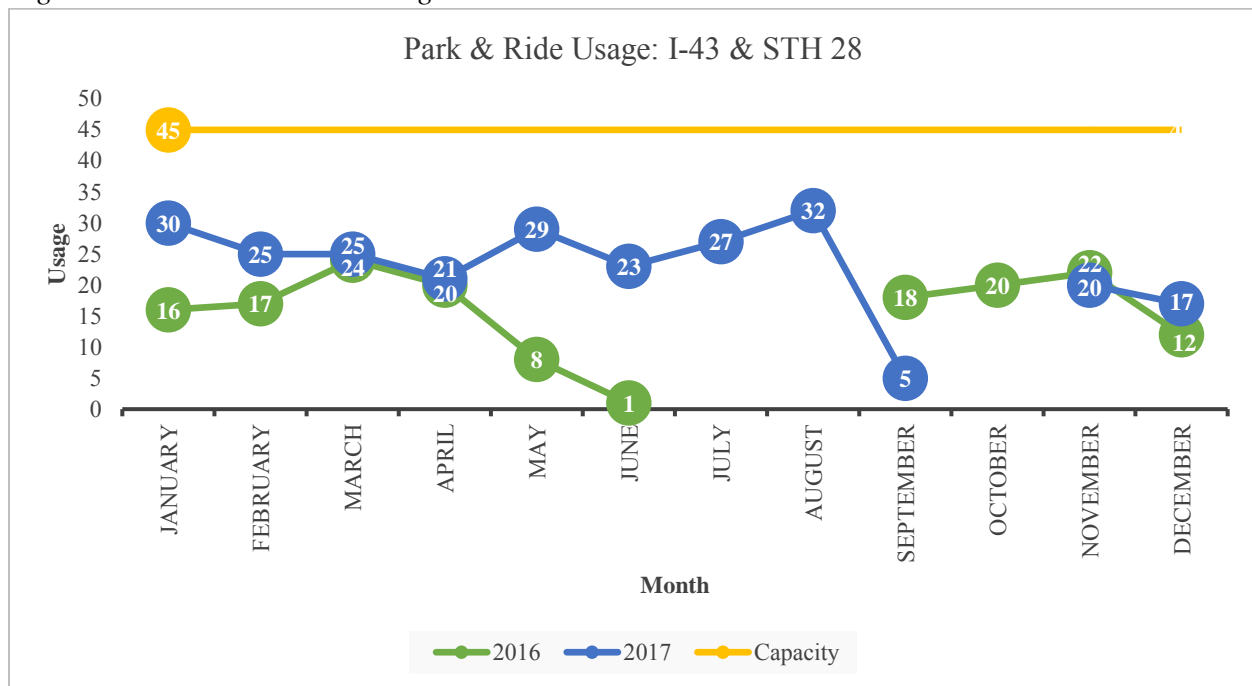
Data Source: WisDOT Northeast Region office – Park-and-ride capacity and use statistics (total spaces available per average weekday, spaces occupied per average weekday, and percent in use per average weekday)

Base Data:

There are two park-and-ride lots within the Sheboygan metropolitan planning area:

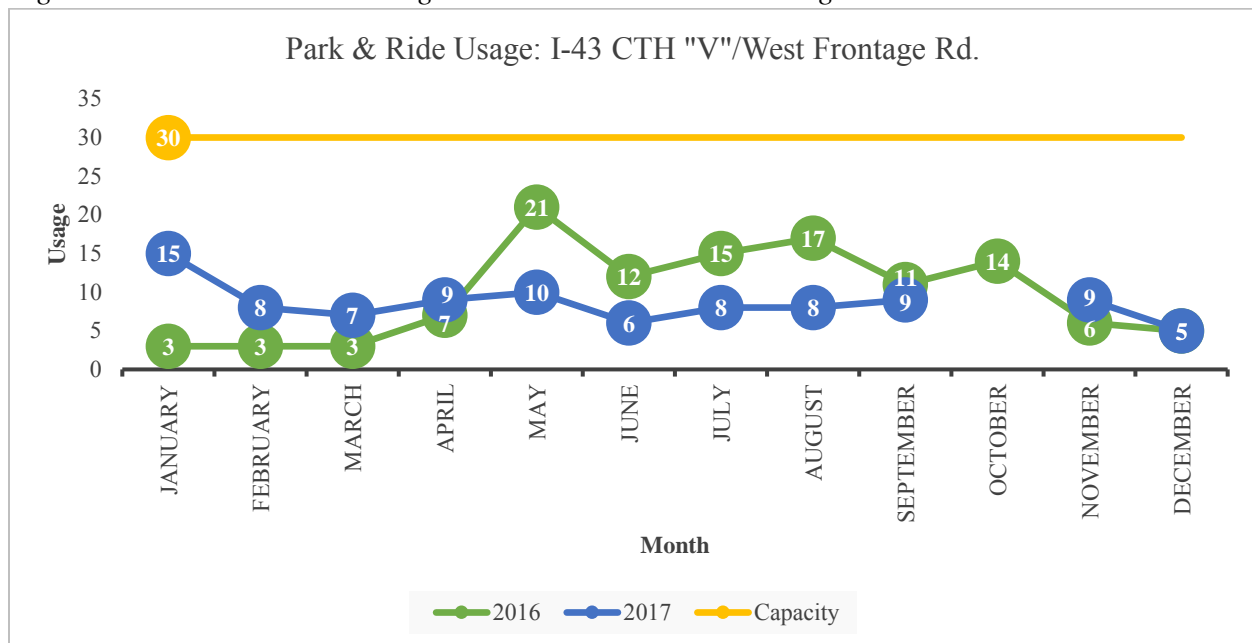
- The most used lot is the southwest quadrant of the interchange of Interstate Highway 43 and State Highway 28, and is situated east of County Highway A across from Deer Trace Shopping Center. This lot has a capacity of 45 motor vehicles. In 2016, this lot’s average volume was 19, giving this lot an average volume-to-capacity ratio of 0.42. This lot appeared to be below capacity every month in 2016, with the peak months in 2016 being March and November. It should be noted that in 2016, this lot was closed in July and August and may have been closed in portions of May and June based on reported underutilization of the lot; average volume was calculated based on averaging the months in which construction did not impact usage. In 2017, this lot’s average volume was 24, giving the lot an average volume-to-capacity ratio of 0.53. This lot was below capacity every month in 2017, with the peak months in 2017 being January, May and August. It should be noted that in 2017, data were not reported for this lot in October; average volume was calculated based on averaging the months in which data were available.

Figure 13A: Park and Ride Usage: I-43 & STH 28



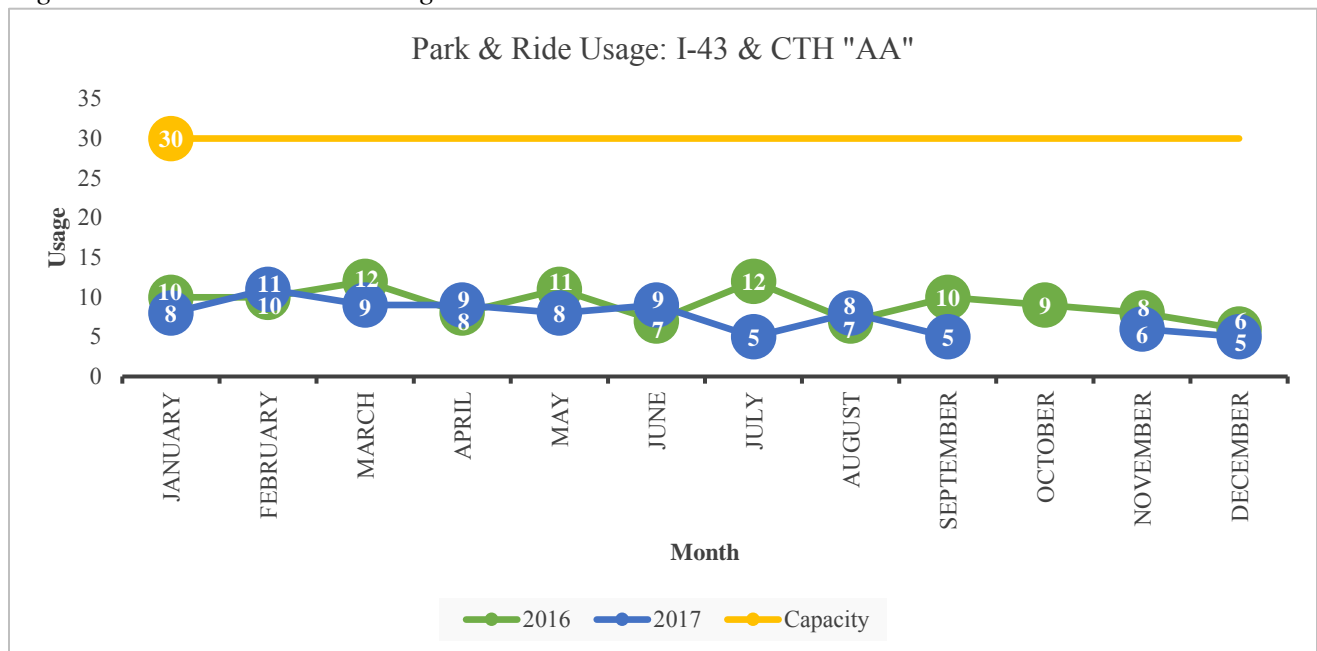
- A second lot is located in the northwest quadrant of the interchange of Interstate Highway 43 and County Highway V, and is situated along the Interstate's west frontage road. This lot has a capacity of 30 motor vehicles, and also includes bike racks for six bicycles. In 2016, this lot's average volume was 10, giving this lot an average volume-to-capacity ratio of 0.33. This lot appeared to be below capacity every month in 2016, with the peak months in 2016 being May, July, August and October. It appears that in 2016, the State Highway 28 construction project depressed demand at the Interstate Highway 43/State Highway 28 park-and-ride lot, but increased demand at the Interstate Highway 43/County Highway V park-and-ride lot. In 2017, this lot's average volume was 9, giving this lot an average volume-to-capacity ratio of 0.30. This lot was below capacity every month in 2017, with the peak month in 2017 being January. It should be noted that in 2017, data were not reported for this lot in October; average volume was calculated based on averaging the months in which data were available.

Figure 13B: Park and Ride Usage: I-43 & CTH V/West Frontage Rd.



- A third park-and-ride lot is located in Sheboygan County but outside the metropolitan planning area at the Interstate Highway 43/County Highway AA interchange around the Village of Oostburg. This lot has a capacity of 30 motor vehicles. In 2016, this lot's average volume was 9, giving this lot an average volume-to-capacity ratio of 0.30. This lot appeared to be below capacity every month in 2016, with the peak months in 2016 being March, May and July. In 2017, this lot's average volume was 8, giving this lot an average volume-to-capacity ratio of 0.27. This lot has been below capacity every month in 2017, with the peak month in 2017 being February. It should be noted that in 2017, data were not reported for this lot in October; average volume was calculated based on averaging the months in which data were available.

Figure 13C: Park and Ride Usage: I-43 & CTH AA



Intercity Bus

Indicator: Frequency of Service/Number of Departures per Day

Data Source: Bus Operators

Base Data:

- Indian Trails Bus Lines provides one northbound departure (10:00 p.m.) and one southbound departure (7:30 a.m.) each day.
- Jefferson Bus Lines also provides one northbound departure (9:50 a.m.) and one southbound departure (6:15 p.m.) each day.
- Lamers Connect provides weekend bus service (generally Friday and Sunday departures, with a few other days added on holiday weekends) to Green Bay and Milwaukee; departures for Milwaukee are at 10:45 a.m., while departures for Green Bay are at 4:20 p.m.

Each bus line's trips to Milwaukee serve the Amtrak intermodal station. Lamers Connect serves additional destinations in Milwaukee, including UW Milwaukee and General Mitchell International Airport.

Indicator: Demand for Intercity Bus Service

Data Source: WisDOT Bureau of Transit, Local Roads, Railroads and Harbors, Transit Section

Base Data:

- Indian Trails Bus Lines – Calendar Year 2016: For northbound trips, there were 48 boardings and 508 alightings in Sheboygan. For southbound trips, there were 341 boardings and 61 alightings in Sheboygan. There was a total of 5,427 trips provided on all northbound trips for the entire service corridor, while there was a total of 4,723 trips provided on all southbound trips for the entire service corridor.
- Indian Trails Bus Lines – January through September 2017: For northbound trips, there were 44 boardings and 616 alightings in Sheboygan. For southbound trips, there were 367 boardings and 51 alightings in Sheboygan. There was a total of 6,736 trips provided on all northbound trips for the entire service corridor, while there was a total of 5,349 trips provided on all southbound trips for the entire service corridor.
- Jefferson Bus Lines – Calendar Year 2016: For northbound trips, there were 165 boardings and 419 alightings in Sheboygan. For southbound trips, there were 234 boardings and 235 alightings in Sheboygan. There was a total of 8,895 trips provided on all northbound trips for the entire service corridor, while there was a total of 8,346 trips provided on all southbound trips for the entire service corridor.
- Jefferson Bus Lines – January through September 2017: For northbound trips, there were 170 boardings and 333 alightings in Sheboygan. For southbound trips, there were 176 boardings and 192 alightings in Sheboygan. There was a total of 7,752 trips provided on all northbound trips for the entire service corridor, while there was a total of 7,018 trips provided on all southbound trips for the entire service corridor.
- Lamers Connect: No data regarding demand are available. Indian Trails and Jefferson Bus Lines are subsidized by WisDOT (and therefore must submit quarterly ridership reports to that agency in order to receive the subsidy), while Lamers Connect is not subsidized by WisDOT, and therefore, its demand data are proprietary in nature and are not disclosed to the public.

Intercity Rail

Not applicable (although Indian Trails Bus Lines, Jefferson Bus Lines and Lamers Connect all connect Sheboygan to the intermodal station in Milwaukee served by Amtrak).

Air

Indicator: Airport volume – total operations

Data Source: Sheboygan County Memorial Airport and Federal Aviation Administration (FAA)

Base Data: The Sheboygan County Memorial Airport does not offer commercial air carrier service. However, there were approximately **65,000** total annual operations (takeoffs and landings) in the 12 month period that ended on August 25, 2017 (the last period in which data have been made available). Of these, about 59,500 operations involved general aviation (31,000 were local operations and 28,500 were itinerant operations), while about 5,000 operations involved air taxi services. In addition to the civilian operations, some 500 military air operations took place at the Sheboygan County Memorial Airport during that period.

Freight

Indicator: Tonnage by Mode, Sheboygan County

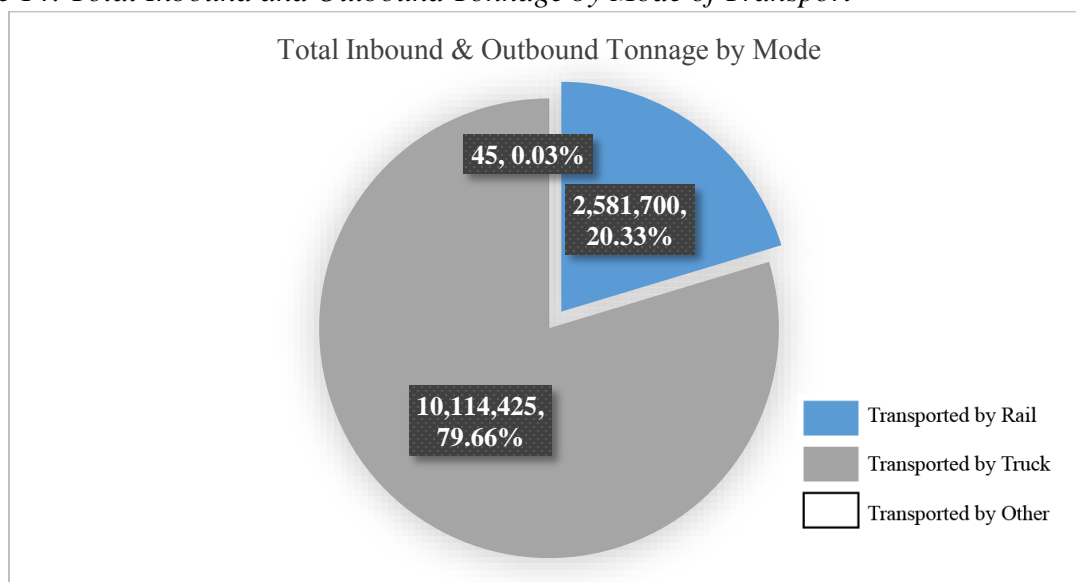
Data: Commodity Flow Survey, WisDOT (IHS TRANSEARCH, 2015)

Base Data:

For total inbound and outbound tonnage in 2015:

- 2,581,700 tons of freight (20.33 percent) were transported by rail;
- 10,114,425 tons of freight (79.67 percent) were transported by truck; and
- 45 tons of freight (negligible percentage) were transported by other modes.

Figure 14: Total Inbound and Outbound Tonnage by Mode of Transport



For inbound tonnage in 2015:

- 6,227,789 tons of freight (71.04 percent) were transported by truck;
- 2,538,880 tons of freight (28.96 percent) were transported by rail; and
- 14 tons of freight (negligible percentage) were transported by other modes.

For outbound tonnage in 2015:

- 42,820 tons of freight (1.09 percent) were transported by rail;
- 3,886,636 tons of freight (98.91 percent) were transported by truck; and
- 31 tons of freight (negligible percentage) were transported by other modes.

Efficient Management and Operations (System Operations and Usage)

Streets and Highways

Indicator: Traffic Volume

Data Source: WisDOT – Traffic Counts – Wisconsin Highway Traffic Volume Data Publication (Last full publication for Sheboygan County for data collected in 2014, with some preliminary data available for 2017).

Base Data:

Traffic counts can be found at the following website:

<https://trust.dot.state.wi.us/roadrunner/> (Note: This is a statewide interactive map; zoom in to the Sheboygan metropolitan planning area is required).

Indicator: Travel Speed

Data Source: WisDOT, Overall Average Travel Speed in Model Base Year of 2010

Base Data: Overall average travel speed was **46.54** miles per hour in the model base year of 2010.

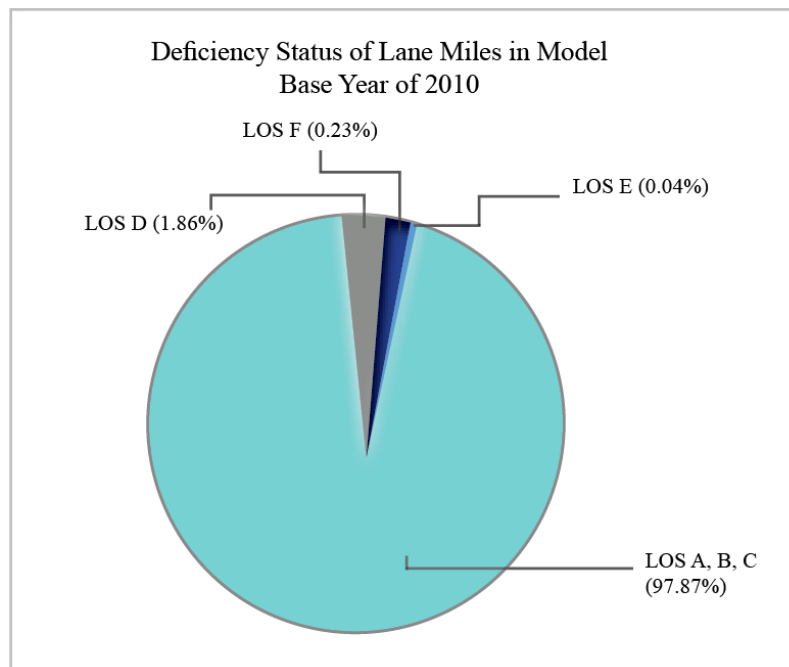
Indicator: Deficiency Status of Lane Miles

Data Source: WisDOT, Deficiency Status of Lane Miles in Model Base Year of 2010

Base Data: In the model base year of 2010, there were **1,563.788** lane miles. Of these:

- 1,530.440 lane miles (97.87 percent) were at levels of service (LOS) A, B or C;
- 29.130 lane miles (1.86 percent) were at LOS D;
- 0.584 lane miles (0.04 percent) were at LOS E; and
- 3.634 lane miles (0.23 percent) were at LOS F.

Figure 15: Deficiency Status of Lane Miles in Model Base Year of 2010 - Percentages



(Note: LOS statistics are subject to revision as the travel demand forecast model is further refined).

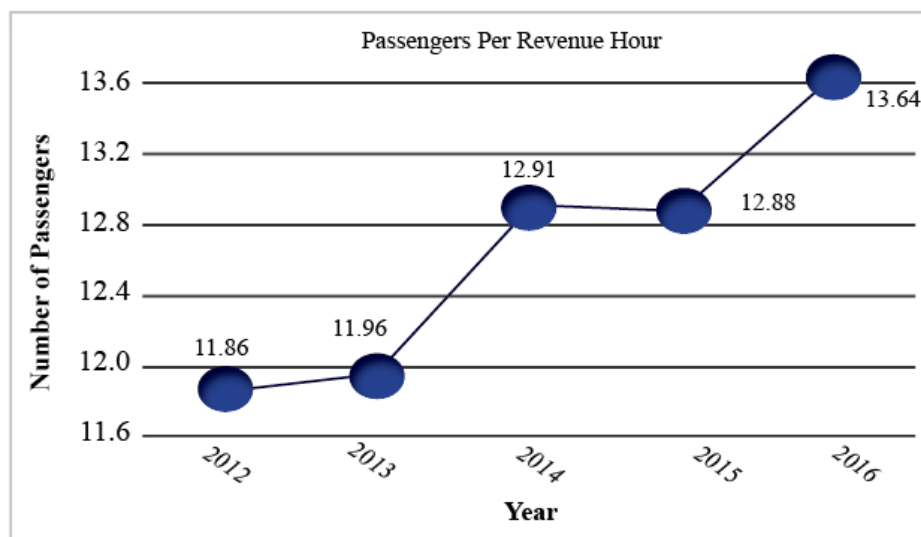
Transit

Indicator: Passengers per revenue hour of operation

Data Source: Shoreline Metro, 2016

Base Data: There were **13.64** passengers per revenue hour of operation for the fixed-route transit component of Shoreline Metro in 2016.

Figure 16: Passengers per Revenue Hour: Shoreline Metro Fixed-Route Service

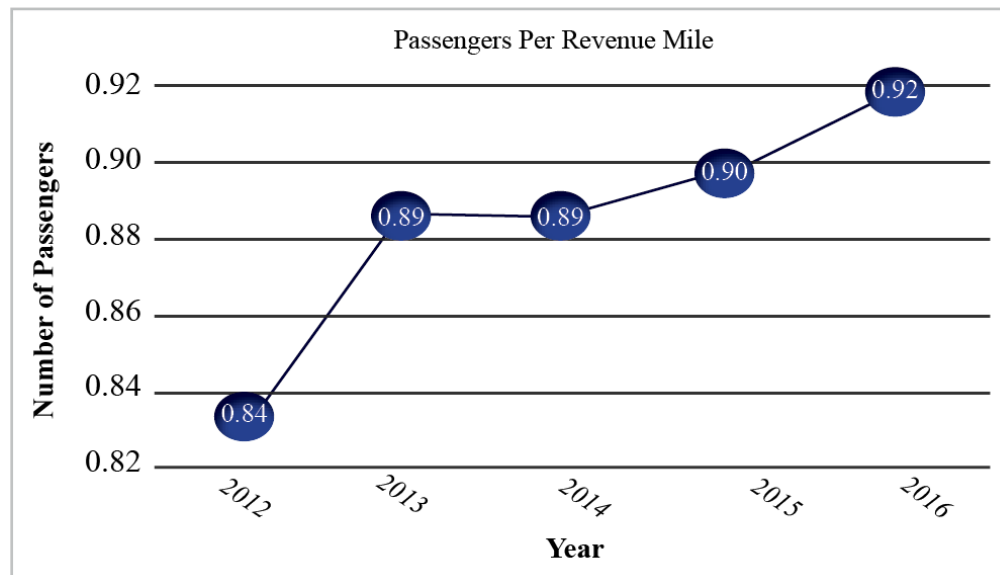


Indicator: Passengers per revenue mile of operation

Data Source: Shoreline Metro, 2016

Base Data: There were **0.92** passengers per revenue mile of operation for the fixed-route transit component of Shoreline Metro in 2016.

Figure 17: Passengers per Revenue Mile: Shoreline Metro Fixed-Route Service

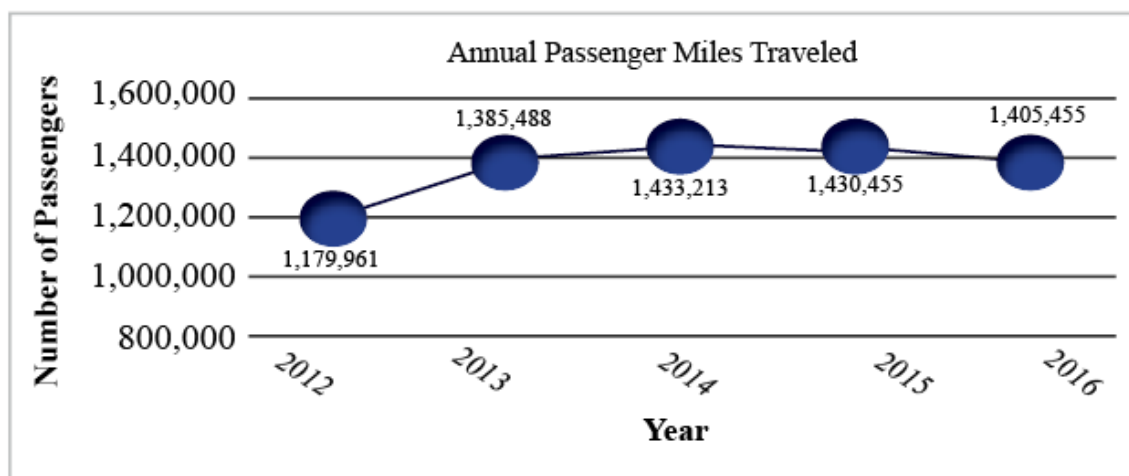


Indicator: Passenger miles traveled

Data Source: Shoreline Metro, 2016.

Base Data: There were **1,405,714** annual passenger miles traveled for the fixed-route transit component of Shoreline Metro in 2016.

Figure 18: Annual Passenger Miles Traveled: Shoreline Metro Fixed-Route Service

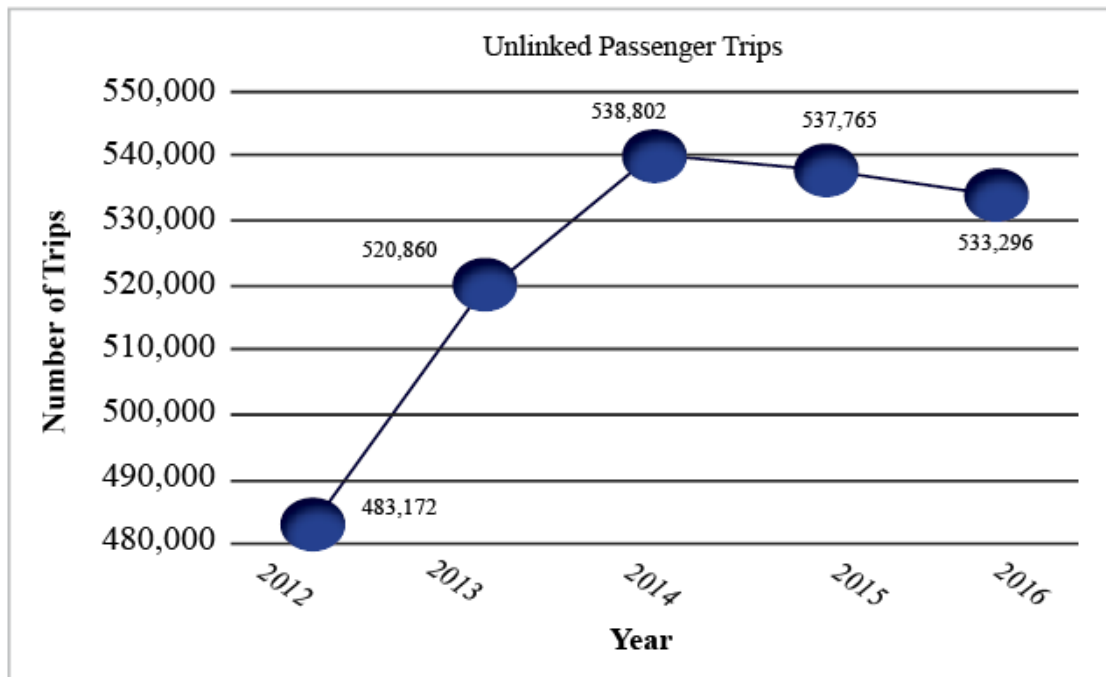


Indicator: Number of passenger trips

Data Source: Shoreline Metro, 2016

Base Data: There were **533,296** unlinked passenger trips for the fixed-route transit component of Shoreline Metro in 2016.

Figure 19: Unlinked Passenger Trips: Shoreline Metro Fixed-Route Service



System Preservation

Streets and Highways

Indicator: Pavement condition – number of miles and percentage of total miles in each category

Data Source: WISLR for local system (PASER ratings) and WisDOT for the state system (PCI ratings)

Base Data:

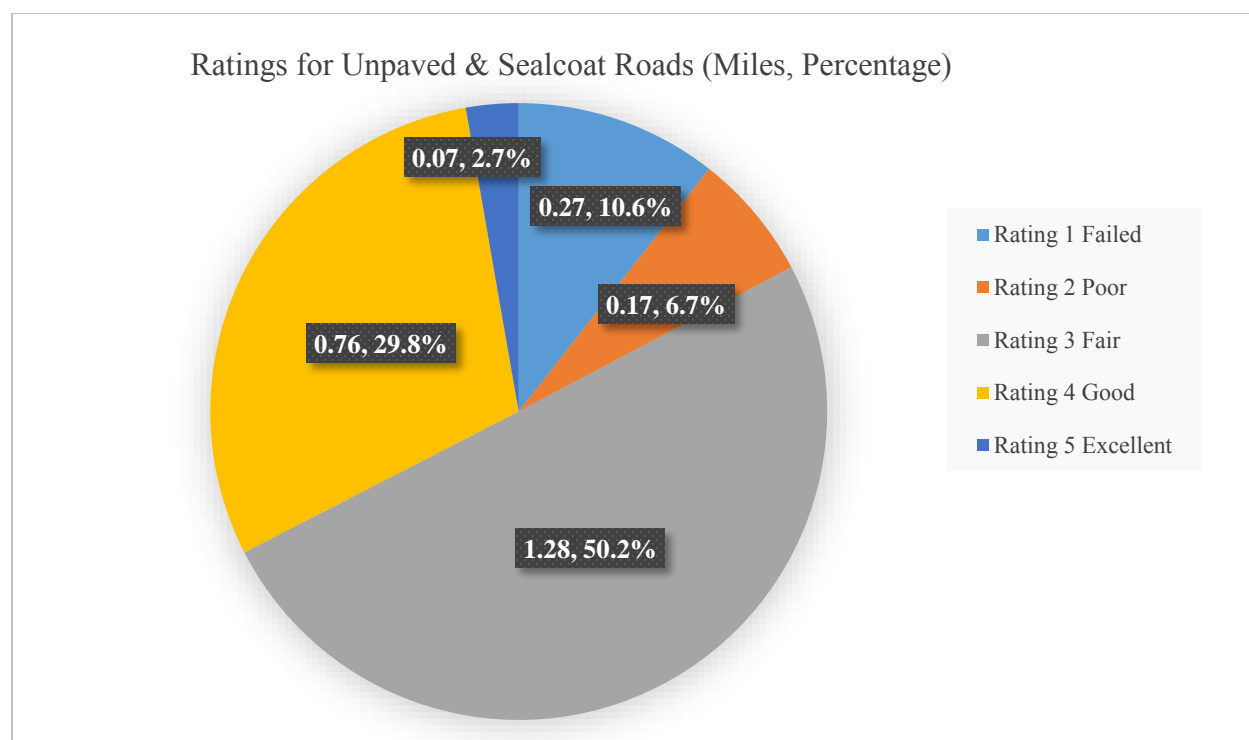
PASER data were compiled for the two cities, two villages and six towns and for the county trunk highway network in the Sheboygan metropolitan planning area. Nearly all local jurisdictions used 2017 as their base inventory, while Sheboygan County had a mix of 2015, 2016 and 2017 entries in its most current pavement ratings.

There was only one small segment (53 feet) of unimproved earthen road in the communities of the Sheboygan metropolitan planning area. On a scale from 1 to 4 (with “1” being poor and “4” being very good), this segment was rated a “2” (fair condition).

There were only a few small segments (total of 1,478 feet) of brick or block road in the communities of the Sheboygan metropolitan planning area. On a scale from 1 to 4 (with “1” being poor and “4” being very good), these segments were rated a “2” (fair condition).

There were approximately 3.32 miles of unpaved (gravel) and sealcoat roads in the communities of the Sheboygan metropolitan planning area. Of these, 2.55 miles were rated. These roads are rated on a scale from 1 to 5 (with “1” being failed and “5” being excellent). The distribution of ratings for unpaved and sealcoat roads in the communities of the Sheboygan metropolitan planning area was as follows:

Figure 20: Ratings for Unpaved & Sealcoat Roads, Communities of the Sheboygan Metropolitan Planning Area

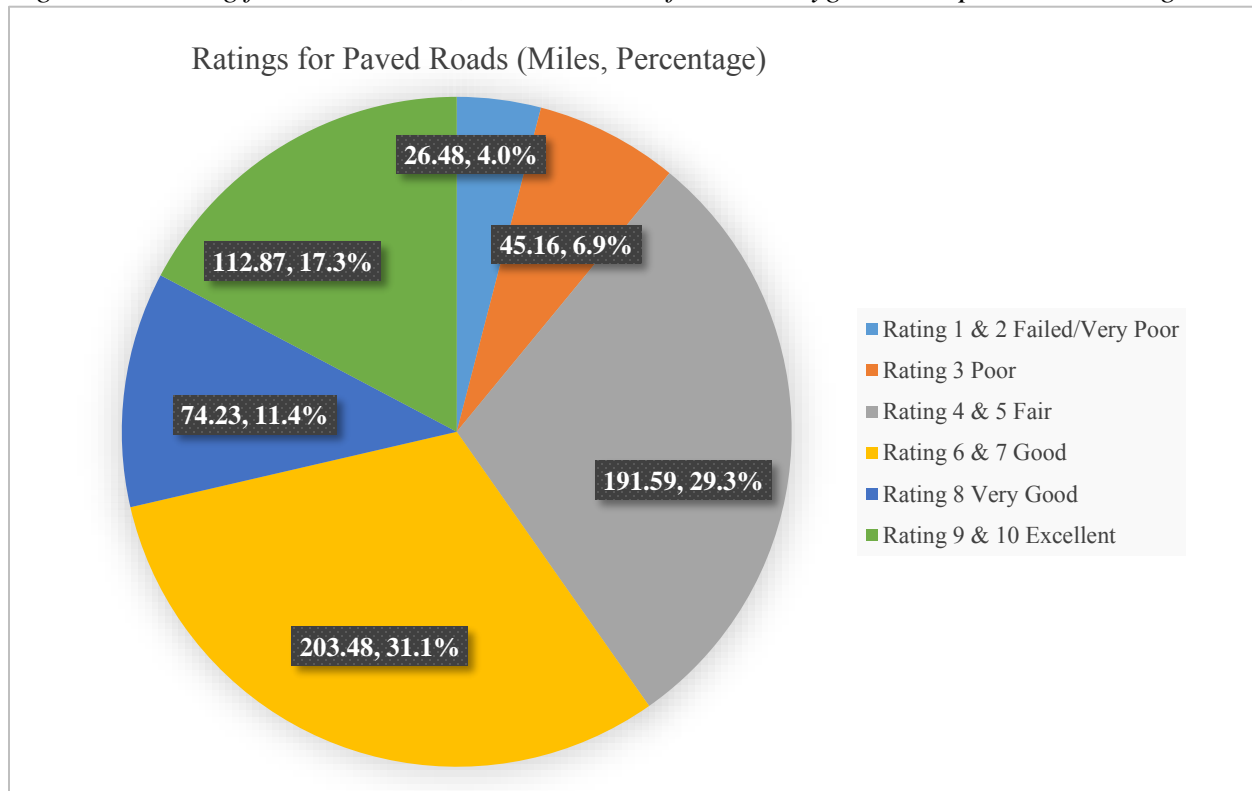


- Rating of 1 (Failed) = 1,426 feet, or 0.27 miles (10.6 percent);
- Rating of 2 (Poor) = 897 feet, or 0.17 miles (6.7 percent);
- Rating of 3 (Fair) = 6,757 feet, or 1.28 miles (50.2 percent);
- Rating of 4 (Good) = 4,013 feet, or 0.76 miles (29.8 percent); and
- Rating of 5 (Excellent) = 370 feet, or 0.07 miles (2.7 percent).

Average Rating = 3.07

There were approximately 656.30 miles of paved (typically asphalt and concrete) roads in the communities of the Sheboygan metropolitan planning area. Of these, 653.81 miles were rated. These roads are rated on a scale from 1 to 10 (with “1” being failed and “10” being excellent). The distribution of ratings for paved roads in the communities of the Sheboygan metropolitan planning area was as follows:

Figure 21: Rating for Paved Roads, Communities of the Sheboygan Metropolitan Planning Area



- Rating of 1 (Failed) = 39,601 feet, or 7.50 miles (1.1 percent);
- Rating of 2 (Very Poor) = 100,210 feet, or 18.98 miles (2.9 percent);
- Rating of 3 (Poor) = 238,444 feet, or 45.16 miles (6.9 percent);
- Rating of 4 (Fair) = 443,655 feet, or 84.03 miles (12.9 percent);
- Rating of 5 (Fair) = 567,922 feet, or 107.56 miles (16.4 percent);
- Rating of 6 (Good) = 546,614 feet, or 103.53 miles (15.8 percent);
- Rating of 7 (Good) = 527,784 feet, or 99.96 miles (15.3 percent);
- Rating of 8 (Very Good) = 391,927 feet, or 74.23 miles (11.4 percent);
- Rating of 9 (Excellent) = 410,761 feet, or 77.80 miles (11.9 percent); and
- Rating of 10 (Excellent) = 185,180 feet, or 35.07 miles (5.4 percent).

Average Rating = 6.15

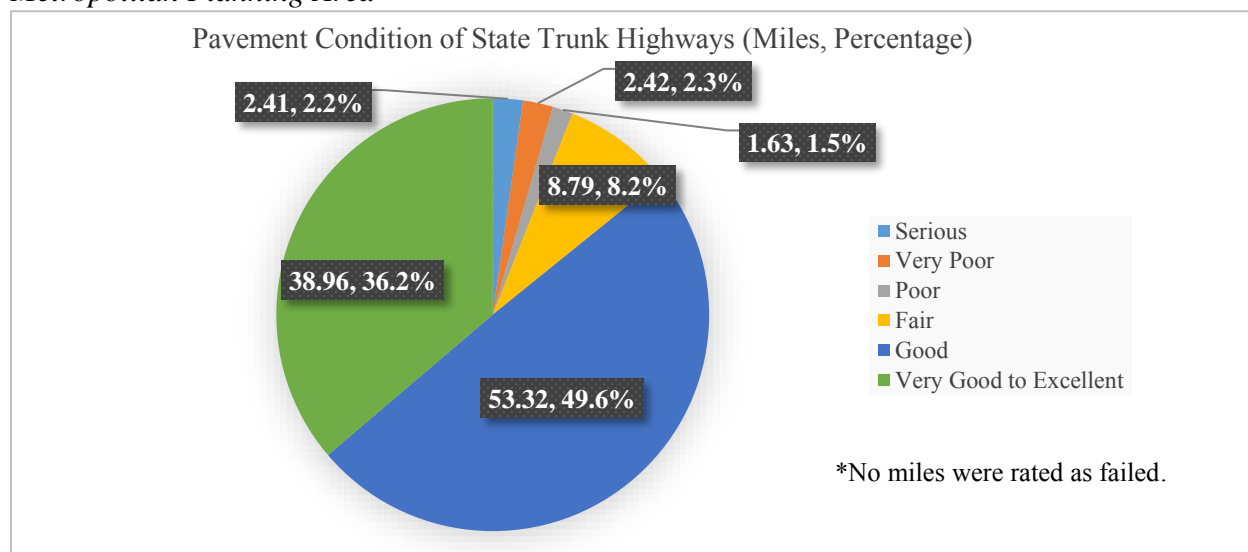
There were approximately 0.19 miles of facilities with an unknown pavement type in the communities of the Sheboygan metropolitan planning area. These roads were rated on a similar scale to paved roads (1 to 10). All of the facilities with an unknown pavement type also had no rating.

Analysis for individual communities and for the county highway network in the Sheboygan metropolitan planning area is also available upon request.

WisDOT has also supplied the MPO with Pavement Condition Index (PCI) data for the state trunk highway system. This information was last collected in October of 2017. MPO staff has tabulated a summary of the condition of state trunk highways that pass through the two cities, two villages and six towns in the Sheboygan metropolitan planning area. “A PCI is calculated based on the results of a detailed pavement distress survey that identifies pavement distress type, distress severity, and distress quantity. The PCI is a numerical rating that ranges from 0 for a totally failed pavement to 100 for a pavement in perfect condition.”

There are approximately 107.53 miles of state trunk highway in the communities of the Sheboygan metropolitan planning area. Of these:

Figure 22: State Trunk Highway Pavement Condition, Communities of the Sheboygan Metropolitan Planning Area



- No miles were rated as “failed” (0 to 9.99 points);
- 2.41 miles (2.2 percent) were rated as “serious” (10 to 24.99 points);
- 2.42 miles (2.3 percent) were rated as “very poor” (25 to 39.99 points);
- 1.63 miles (1.5 percent) were rated as “poor” (40 to 54.99 points);
- 8.79 miles (8.2 percent) were rated as “fair” (55 to 69.99 points);
- 53.32 miles (49.6 percent) were rated as “good” (70 to 84.99 points); and
- 38.96 miles (36.2 percent) were rated as “very good to excellent” (85 to 100 points).

Indicator: Structural condition of bridges

Data Source: WisDOT, Sufficiency Ratings

Base Data:

Bridges typically are assessed using a 0 to 100 point scale known as a “sufficiency rating.” WisDOT considers bridges with a sufficiency rating of 0 to 49.99 as being “deficient,” while bridges with a sufficiency rating of 50 to 79.99 are considered to be in “fair” condition, and bridges with a sufficiency rating of 80 and higher are “sufficient,” or in good condition.

There are 142 bridges identified within the communities of the Sheboygan metropolitan planning area. Of these, 101 bridges (71.1 percent) are “sufficient,” or in good condition. Another 24 bridges (16.9 percent) are in “fair” condition. Eight bridges (5.6 percent) were identified as being “deficient,” or in poor condition. Nine bridges (6.3 percent) were of “unknown” condition.

Figure 23: Bridge Conditions by Rating within the Communities of the Sheboygan Metropolitan Planning Area

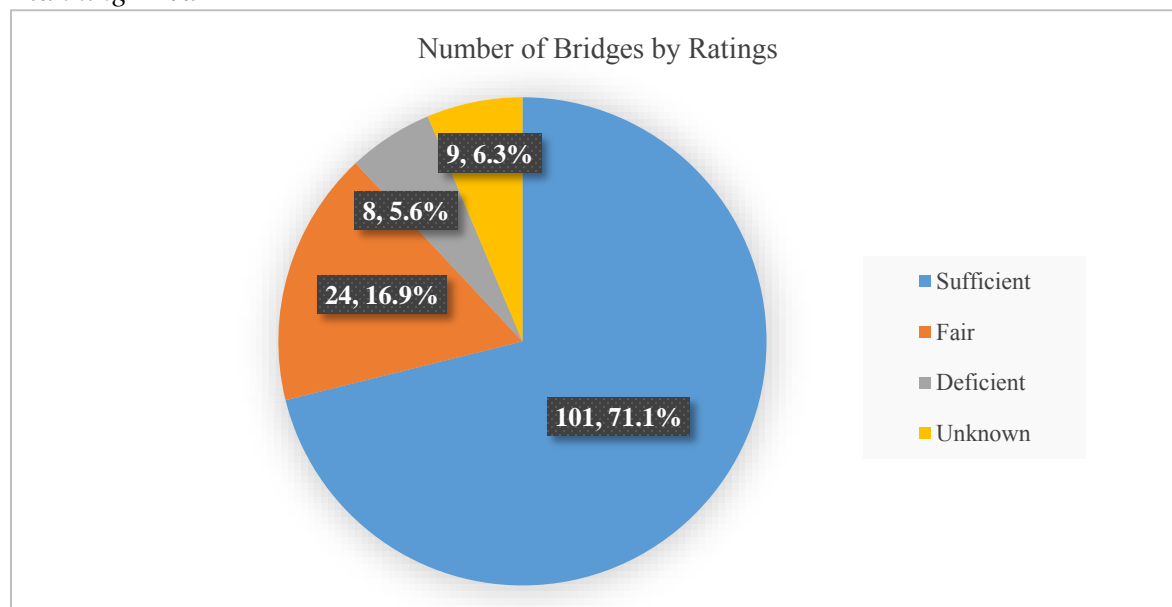


Table 5 identifies the bridges that are considered “deficient” (eligible for replacement). Bridges listed in bold in Table 5 are either programmed in the TIP/STIP or are in progress.

Table 5: Deficient Bridges: Communities of the Sheboygan Metropolitan Planning Area*

WisDOT Bridge ID Number	Street or Highway	Over (Stream/Road)	Location	Sufficiency Rating
P590133	Old Park Road	Black River	Town of Wilson (Kohler Andrae State Park)	26.3
P590116	Meadowlark Road	Sheboygan River	Town of Sheboygan Falls	31.4
P590091	County Highway FF	Sheboygan River	Town of Herman	35.8
P590068	County Highway O	Branch of the Sheboygan River	Town of Sheboygan Falls	40.2
P590924	Luelloff Road	Sevennmile Creek (westernmost crossing, just east of County Highway DL)	Town of Mosel	43.7
P590930	Woodland Road	Branch of the Sheboygan River	Town of Sheboygan Falls	46.3
B590064	Pennsylvania Avenue	Sheboygan River	City of Sheboygan	49.2
P590095	Meadowlark Road	Fischer Creek	Town of Herman	49.8

*Bridges listed in **bold** are either programmed in the TIP/STIP or are in progress.

Table 6 identifies bridges that are in “fair” condition (eligible for rehabilitation but not replacement). Bridges listed in bold are either programmed in the TIP or are in progress, while bridges listed in red are those recently completed bridges where MPO staff question the listed sufficiency rating of the bridge.

Table 6: Bridges in Fair Condition: Communities of the Sheboygan Metropolitan Planning Area*

WisDOT Bridge ID Number	Street or Highway	Over (Stream/Road)	Location	Sufficiency Rating
P590921	County Highway W	Branch of the Onion River	Town of Lima	52.3
P590069	County Highway OO	Onion River	Town of Lima	53.0
P590701	Roosevelt Avenue	Pigeon River	Village of Howards Grove	55.1
B590014	County Highway PP	Mullet River	City of Sheboygan Falls	56.1
P590112	Willow Road	Otter Creek	Town of Sheboygan Falls	57.0
P590705	Broadway Street	Onion River	City of Sheboygan Falls	60.1
B590100	South Business Drive	Rail Line	City of Sheboygan	61.1
P590124	County Highway TT	Sheboygan River	Town of Sheboygan Falls	65.0
B590009	Lakeshore Road (formerly County Highway LS)	Sevenmile Creek	Town of Mosel	66.3
P590114	Willow Road	Mullet River	Town of Sheboygan Falls	67.8
P590922	County Highway PP	Branch of the Mullet River	Town of Sheboygan Falls	68.3
B590154	South 8th Street	Sheboygan River	City of Sheboygan	70.5
P590135	County Highway EE/Lakeshore Drive	Fisherman's Creek	Town of Wilson	70.6
P590118	Alpine Road	Sheboygan River	Town of Sheboygan Falls	73.8
P590139	Camp Riversite Road	Onion River	Town of Lima	73.8
B590096	Georgia Avenue	Old Rail Line	City of Sheboygan	74.3
B590105	State Highway 23/Erie Avenue	Rail Line	City of Sheboygan	74.8
B590030	County Highway J	Sheboygan River	Town of Sheboygan Falls	75.3
B590033	State Highway 28/North 14th Street	Sheboygan River	City of Sheboygan	76.5
B590034	Interstate Highway 43 (northbound only)	County Highway EE/Weeden Creek Road	Town of Wilson	76.7
P590914	Lakeshore Road (formerly County Highway LS)	Pigeon River	City of Sheboygan	76.9
B590294	Interstate Highway 43	Old Plank Road Trail Tunnel	Town of Sheboygan	77.2
P590130	West Evergreen Drive	Black River	Town of Wilson	77.8
B590023	Mueller Road	Interstate Highway 43	Town of Sheboygan	77.9

*Bridges listed in **bold** are either programmed in the TIP/STIP or are in progress.

Culverts are rated on a scale from 0 to 9, with “0” meaning that the culvert has failed, with “1” or “2” meaning that the culvert is in critical condition, with “3” or “4” meaning that the culvert is in poor condition, with “5” or “6” meaning that the culvert is in fair condition, with “7” or “8” meaning that the culvert is in good condition, and with “9” mainly involving new culverts.

There are 19 culverts identified on various roads and highways within the communities of the Sheboygan metropolitan planning area. Of these, one culvert (5.3 percent) received a rating of “8,” eleven culverts (57.9 percent) received a rating of “7,” and three culverts (15.8 percent) received a rating of “5.” An additional four culverts (21.0 percent) were not rated.

Figure 24: Culvert Ratings by Rating and Percent

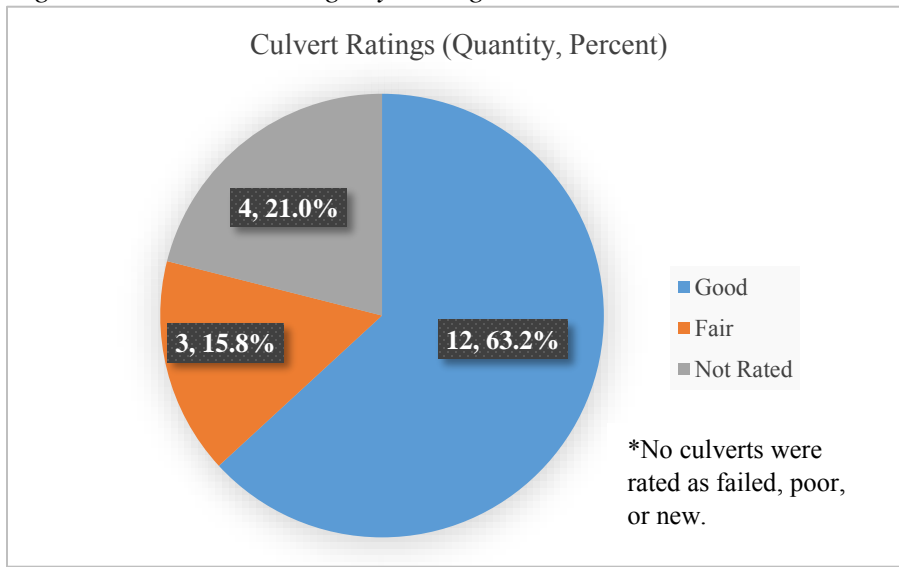


Table 7 identifies the 15 culverts that were rated in the Sheboygan metropolitan planning area.

Table 7: Condition of Rated Culverts: Communities of the Sheboygan Metropolitan Planning Area

WisDOT Structure ID Number	Street or Highway	Over (Stream)	Location	Culvert Rating
C590080	State Highway 32	Unnamed Creek	Town of Lima (1.37 miles North of County Highway V)	5 (Fair)
C592650	State Highway 32	Unnamed Creek	Town of Lima (0.36 miles North of County Highway W)	5 (Fair)
C592916	State Highway 32	Unnamed Creek	Town of Lima (0.38 miles North of County Highway OO)	5 (Fair)
C590032	Interstate Highway 43	Unnamed Creek	Town of Wilson (0.52 miles North of County Highway KK)	7 (Good)
C590038	Interstate Highway 43	Unnamed Creek	Town of Mosel (1.21 miles North of County Highway MM)	7 (Good)
C590041	Interstate Highway 43	Unnamed Creek	Town of Sheboygan (0.44 miles North of State Highway 42)	7 (Good)
C590048	Interstate Highway 43	Unnamed Creek	Town of Sheboygan (0.32 miles North of State Highway 42)	7 (Good)
C590049	Interstate Highway 43	Unnamed Creek	Town of Mosel (0.58 miles North of County Highway FF)	7 (Good)
C590051	State Highway 42	Unnamed Creek	Town of Herman (0.63 miles West of County Highway FF)	7 (Good)
C590069	State Highway 28	Tributary to Mullet River	Town of Lima (1.43 miles East of County Highway U)	7 (Good)
C590070	State Highway 32	Fischer Creek	Town of Herman (0.87 miles North of County Highway FF)	7 (Good)
C590071	State Highway 32	Drainage Way	Town of Sheboygan Falls (0.40 miles North of County Highway O)	7 (Good)
C590072	State Highway 32	Drainage Way	Town of Sheboygan Falls (0.80 miles North of County Highway O)	7 (Good)
C590073	State Highway 32	Drainage Way	Village of Howards Grove (1.90 miles North of County Highway J)	7 (Good)
C590016	Interstate Highway 43	Seven Mile Creek	Town of Mosel (0.47 miles North of County Highway FF)	8 (Good)

Transit

Indicator: Percentage of transit fleet beyond the Federal Transit Administration (FTA) Useful Life Age Benchmark (ULB)

Data Source: Shoreline Metro, 2017

Base Data:

Shoreline Metro evaluated the inventory of its vehicle capital items and divided all vehicle types into three categories: heavy duty bus; medium duty bus (cutaways); and light duty vehicles (auto, pickup truck, minivan, van, SUV, etc.). Shoreline Metro then used the FTA's ULB set in FTA 5010.D, page IV-17, to determine if the vehicles were beyond their useful life.

Table 8 shows the results of Shoreline: Metro's findings.

Table 8: Percentage of Shoreline Metro Transit Fleet beyond the FTA ULB, 2017

Vehicle Type	Vehicle Count	Useful Life Age Benchmark (ULB, in years)	Vehicles Beyond ULB	Percent of Fleet Beyond ULB
Heavy Duty Bus	23	12	13	57%
Medium Duty Bus (Cutaways)	10	7	4	40%
Light Duty Vehicles (Non-Revenue/Support Vehicles)	5	4	0	0%
Total	38		17	45%

Shoreline Metro set the transit asset management (TAM) performance target to allow for 61 percent of vehicles to pass beyond useful life. This target was set higher than the 45 percent listed in Table 5 because five additional heavy duty buses and one additional medium duty bus are expected to pass beyond their useful life in 2018. Shoreline Metro is aggressively attempting to replace its fleet through various grant programs in order to lower this performance target percentage over time.

Indicator: Age and Years of Remaining Useful Life of Significant Equipment

Data Source: Shoreline Metro, 2017

Base Data:

Shoreline Metro evaluated the inventory of its most significant equipment (items with a replacement cost of \$50,000 or more). These items include a scrubber, a hoist and a bus wash, all located at the Shoreline Metro bus garage. Shoreline Metro then used guidance from the FTA and from various reports that discuss useful life for these types of equipment to determine if these pieces of equipment were beyond their useful life. For the equipment types listed in Table 6, scrubbers have a useful life of five years, while hoists and bus washes have a useful life of 10 years.

Table 9 shows the results of Shoreline Metro's findings.

Table 9: Age and Years of Remaining Useful Life of Significant Equipment, Shoreline Metro, 2017

Equipment Type	Years of Remaining Useful Life	Age	Year Equipment Acquired
Scrubber	(17.00)	22.00	1995
Hoist	(32.00)	42.00	1975
Bus Wash	(6.00)	16.00	2001
Averages	(18.33)	26.67	

All of Shoreline Metro's most significant equipment is beyond its useful life. For now, Shoreline Metro is setting the TAM performance target to allow for 100 percent of its most significant equipment to pass beyond useful life. Shoreline Metro's 2018 TAM plan will

examine the condition of this equipment in greater detail; if the condition of this equipment is deemed beyond its “state of good repair” in the TAM plan, then steps will be taken to have Shoreline Metro work with the MPO to get replacement equipment programmed in the Transportation Improvement Program (TIP).

Indicator: Condition, Age and Years of Remaining Useful Life of Facilities

Data Source: Shoreline Metro, 2017

Base Data:

Shoreline Metro evaluated the condition of its facilities using the remaining useful life standards outlined in FTA 5010.1D, page IV-18, 2(f), as a guide. The guidance indicated that facilities generally have a useful life of forty (40) years.

Table 10 shows the results of Shoreline Metro’s findings

Table 10: Condition, Age and Years of Remaining Useful Life of Facilities, Shoreline Metro, 2017

Facility Type	Condition	Years of Remaining Useful Life	Age	Year of Completion	Condition
Administration, Maintenance and Storage (Bus Garage)	2	(2.00)	42.00	1975	Marginal
Transfer Facility/Station	4	15.00	25.00	1992	Good
Averages	3.00	6.50	33.50		

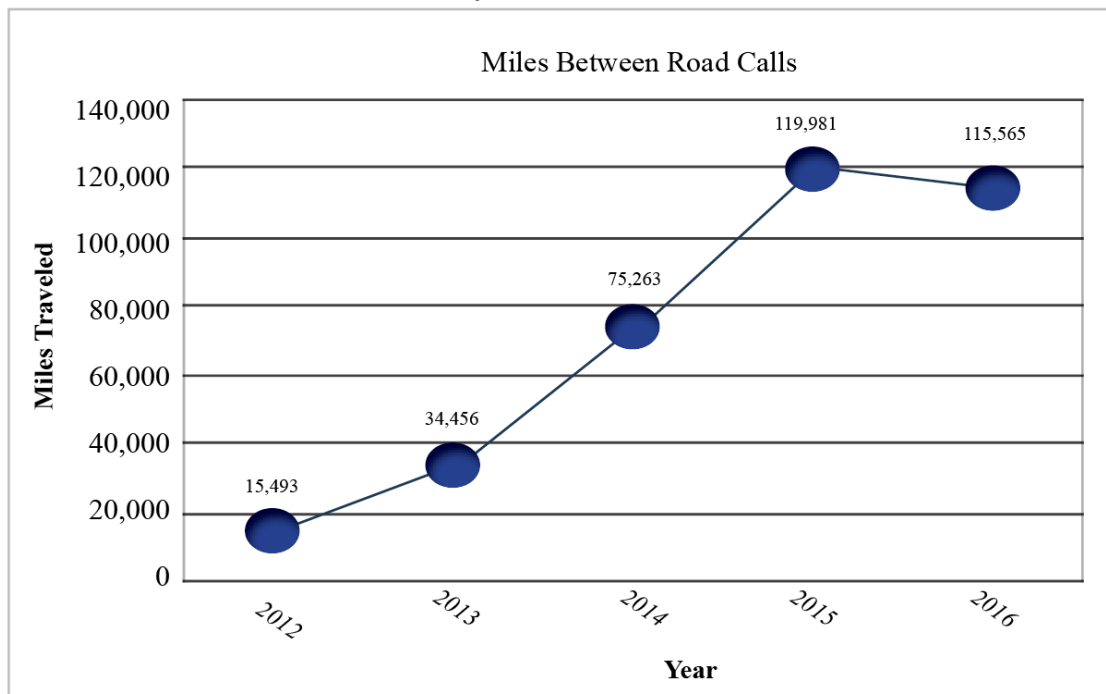
One of Shoreline Metro’s two facilities is beyond its useful life. Shoreline Metro set the TAM performance target to only allow 50 percent of the facilities to pass beyond useful life. Shoreline Metro’s TAM plan will address the condition of these facilities in greater detail in 2018.

Indicator: Number of road calls divided by revenue miles of service

Data Source: Shoreline Metro, 2016

Base Data: There were **five (5)** “major mechanical failures” (road calls) in 2016. There were **577,826** revenue miles in 2016. This translates to an average of **115,565** miles between road calls in 2016.

Figure 25: Miles between Road Calls (Major Mechanical Failures): Shoreline Metro



Regional Trends

Population

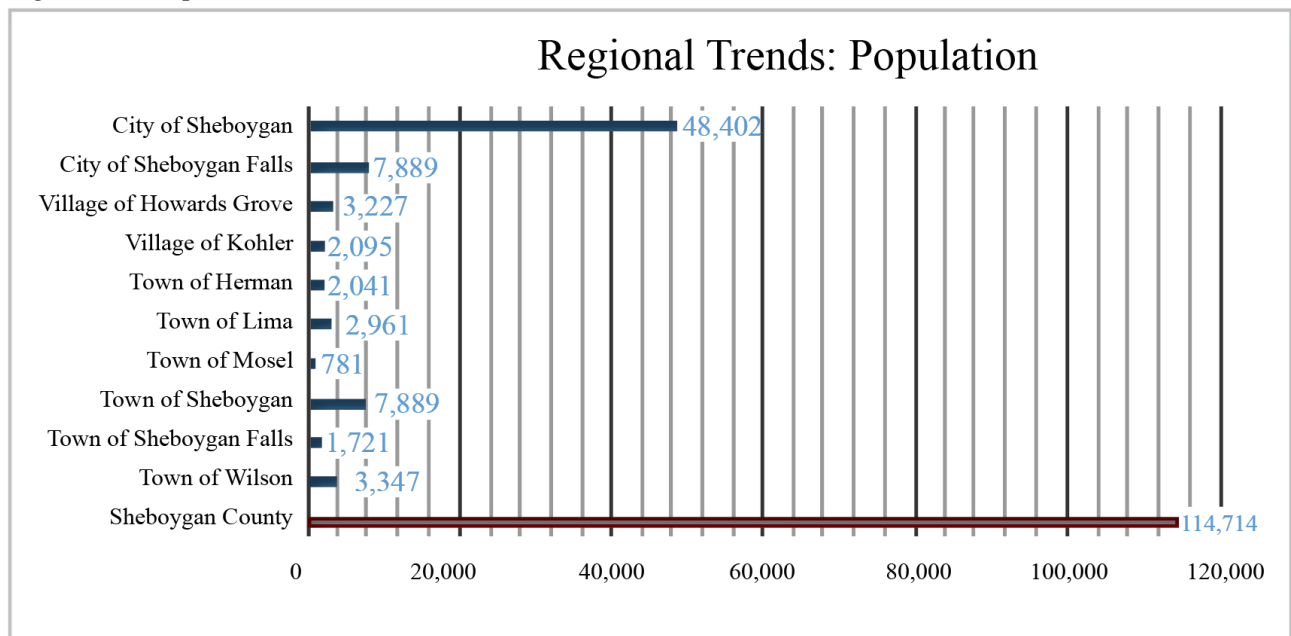
Data Source: Wisconsin Department of Administration, Demographic Services Center, 2017.

Base Data:

Table 11: Sheboygan Metropolitan Planning Area Municipalities Preliminary Population Estimates (January 1, 2017)

Jurisdiction	Estimated Population
Sheboygan County	114,714
City of Sheboygan	48,402
City of Sheboygan Falls	7,889
Village of Howards Grove	3,227
Village of Kohler	2,095
Town of Herman	2,041
Town of Lima	2,961
Town of Mosel	781
Town of Sheboygan	7,425
Town of Sheboygan Falls	1,721
Town of Wilson	3,347

Figure 26: Population Trends, 2017 Estimates



Households

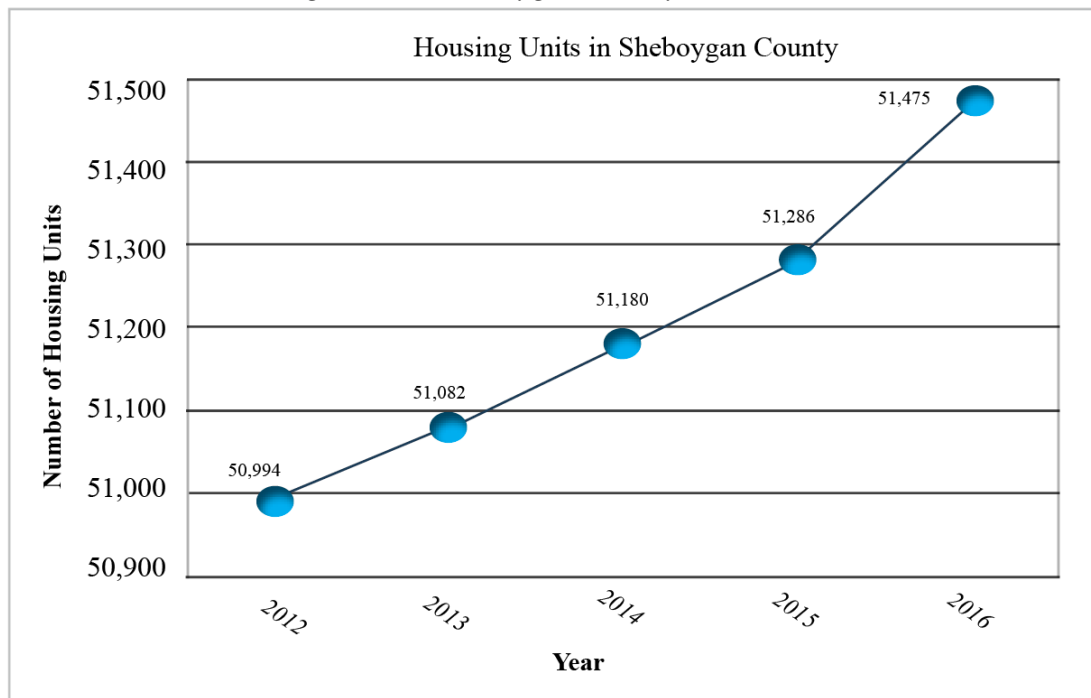
Indicator: Households

Data Source: U.S. Bureau of the Census, *2011 – 2015 American Community Survey 5-Year Estimates*; and Wisconsin Department of Administration, Demographic Services Center, 2016.

Base Data:

The Wisconsin Department of Administration's Demographic Services Center estimated that there were **51,475** housing units in Sheboygan County on April 1, 2016. A similar estimate for April 1, 2017, should be available in 2018. Estimates were not available below the county level.

Figure 27: Estimated Housing Units in Sheboygan County

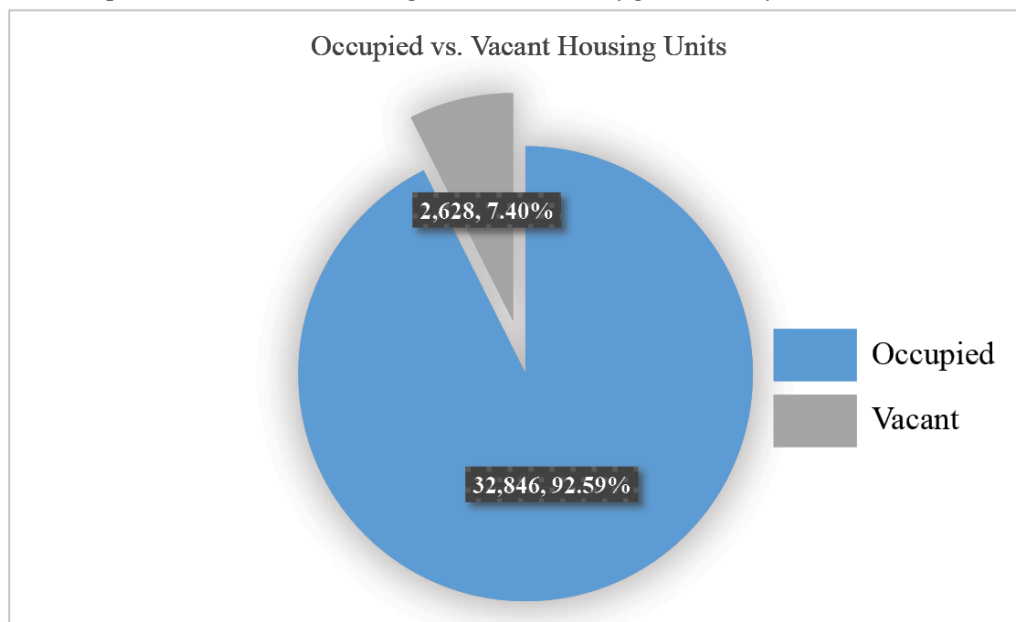


The U.S. Bureau of the Census reported the following total, occupied and vacant housing units in the communities of the Sheboygan metropolitan planning area in the 2011 – 2015 American Community Survey 5-Year Estimates:

Table 12: Sheboygan Metropolitan Planning Area Municipalities: Total, Occupied and Vacant Housing Units: 2011 – 2015 American Community Survey 5-Year Estimates

Jurisdiction	Total Housing Units	Occupied Housing Units	Vacant Housing Units
City of Sheboygan	21,994	20,183	1,811
City of Sheboygan Falls	3,640	3,410	230
Village of Howards Grove	1,259	1,234	25
Village of Kohler	940	902	38
Town of Herman	679	640	39
Town of Lima	1,145	1,047	98
Town of Mosel	333	315	18
Town of Sheboygan	3,242	3,033	209
Town of Sheboygan Falls	827	796	31
Town of Wilson	1,415	1,286	129
Total	35,474	32,846	2,628
Percent	100.00%	92.59%	7.41%

Figure 28: Occupied vs. Vacant Housing Units in Sheboygan County



Note: These statistics include five towns which have portions outside the Sheboygan metropolitan planning area. The two cities and two villages as well as the Town of Sheboygan are completely within the Sheboygan metropolitan planning area.

Employment

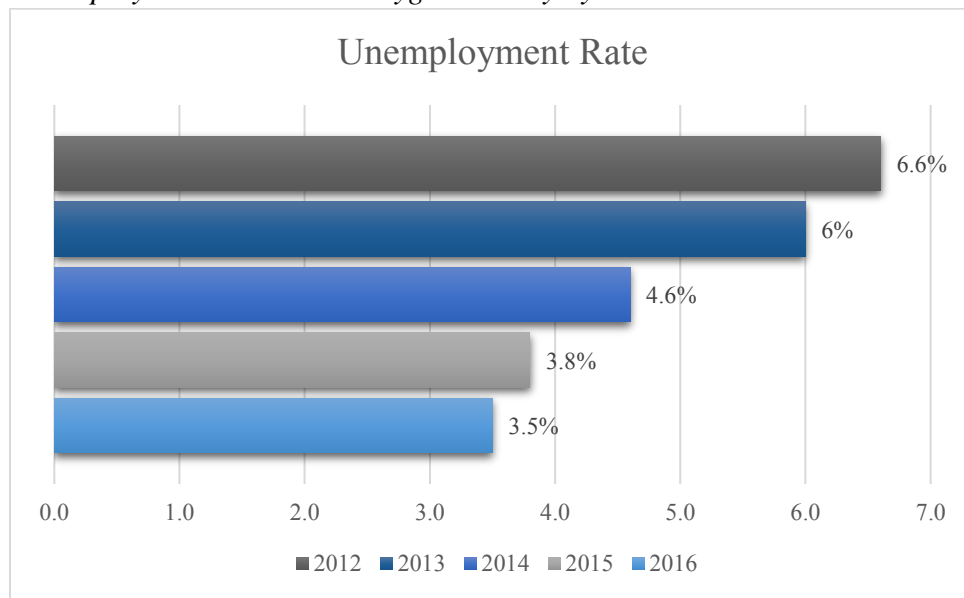
Indicator: Employment

Data Source: Wisconsin Department of Workforce Development, *Local Area Unemployment Statistics* (Labor force and employment estimates by county/Metropolitan Statistical Area, or MSA)

Base Data:

Sheboygan County (the Sheboygan MSA) had an average annual labor force of 61,961 in 2016. Of these, 59,790 were employed, while 2,171 (3.5 percent) were unemployed. These figures were not seasonally adjusted.

Figure 29: Unemployment Rate in Sheboygan County by Year



Economic Development

Indicator: Housing additions and deletions in 2016

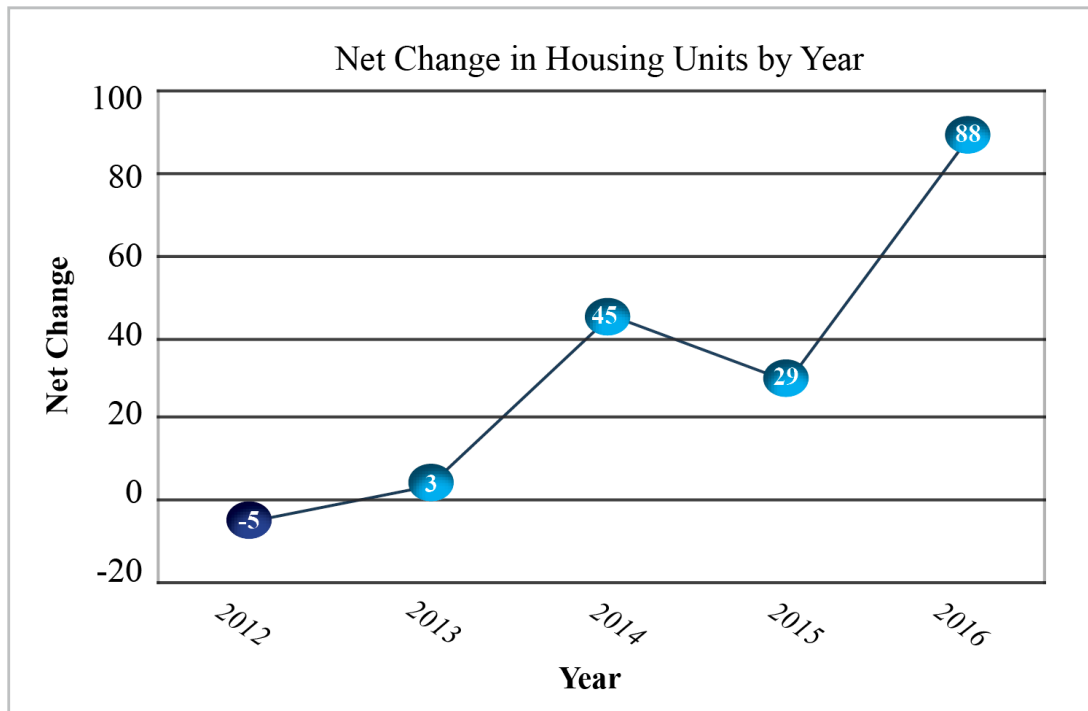
Data Source: Wisconsin Department of Administration, Demographic Services Center, *Housing Unit Additions and Deletions for Wisconsin Minor Civil Divisions*

Base Data:

Table 13: Sheboygan Metropolitan Planning Area Municipalities: Housing Unit Additions and Deletions: 2016

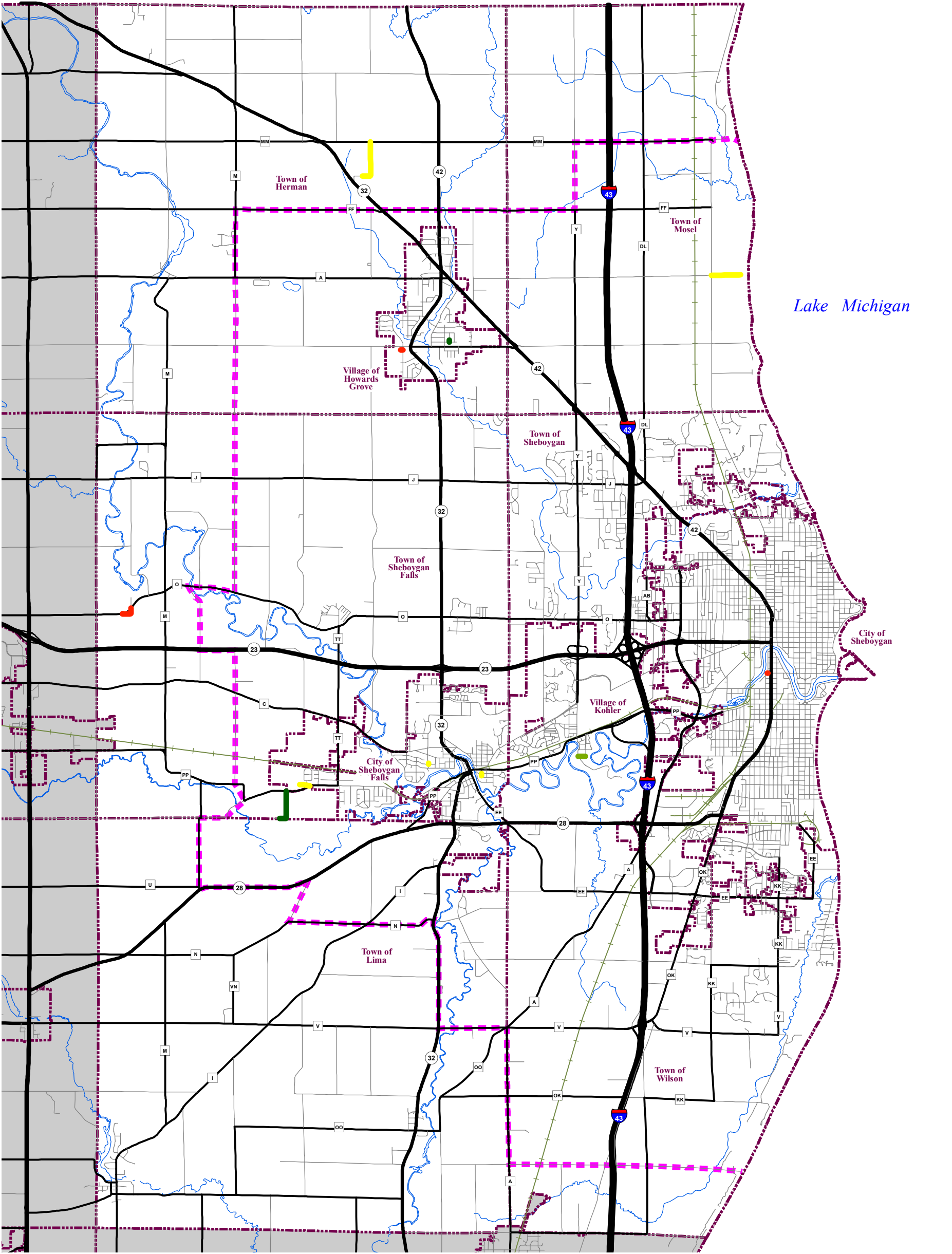
Jurisdiction	Added Housing Units	Deleted Housing Units	Net Change in Housing Units
City of Sheboygan	5	9	(4)
City of Sheboygan Falls	54	6	48
Village of Howards Grove	11	0	11
Village of Kohler	0	0	0
Town of Herman	1	0	1
Town of Lima	3	1	2
Town of Mosel	2	0	2
Town of Sheboygan	17	0	17
Town of Sheboygan Falls	6	0	6
Town of Wilson	5	0	5
Total	104	16	88

Figure 30: Net Change in Housing Units by Year in Sheboygan County



PASER Ratings of Gravel/Sealcoat Surfaces
Local Streets and Roads
Communities of the Sheboygan Metropolitan Planning Area

37

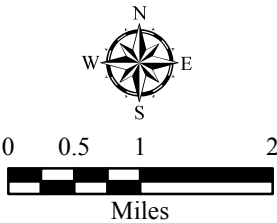
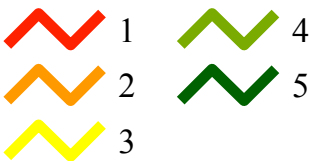


Sheboygan Metropolitan Planning Area Boundary



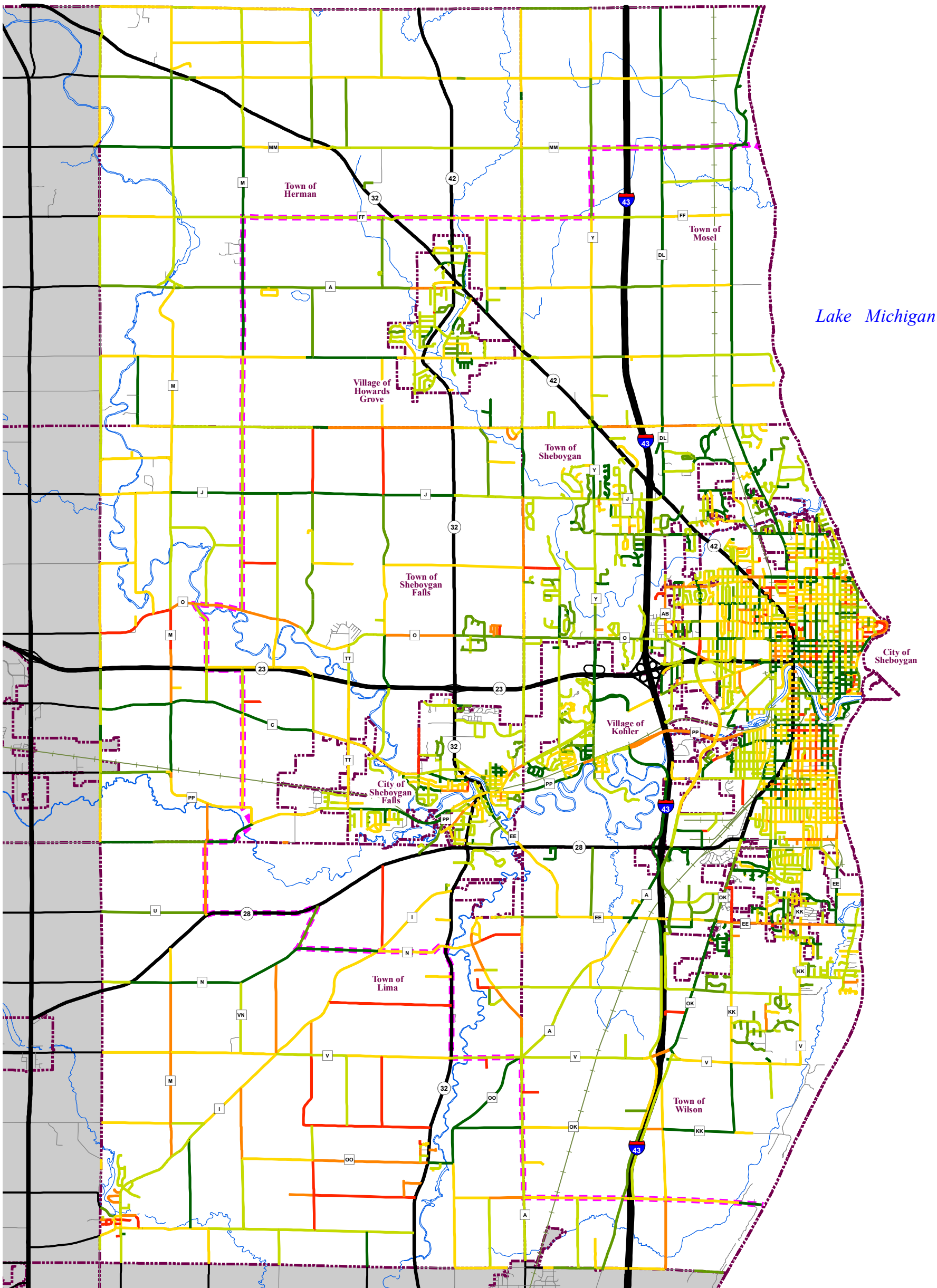
G:/Sheboygan/MPO/Long Range
Source: WDNr, 2009; WisDOT, 2014 - 2017; Sheboygan County, 2016; Bay-Lake Regional Planning Commission, 2018.

PASER Rating



PASER Ratings of Paved Surfaces
County and Local Streets and Roads
Communities of the Sheboygan Metropolitan Planning Area

39



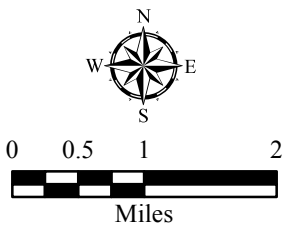
Sheboygan Metropolitan Planning Area Boundary



G:/Sheboygan/MPO/Long Range
Source: WDNr, 2009; WisDOT, 2014 - 2017; Sheboygan County, 2016; Bay-Lake Regional Planning Commission, 2018.

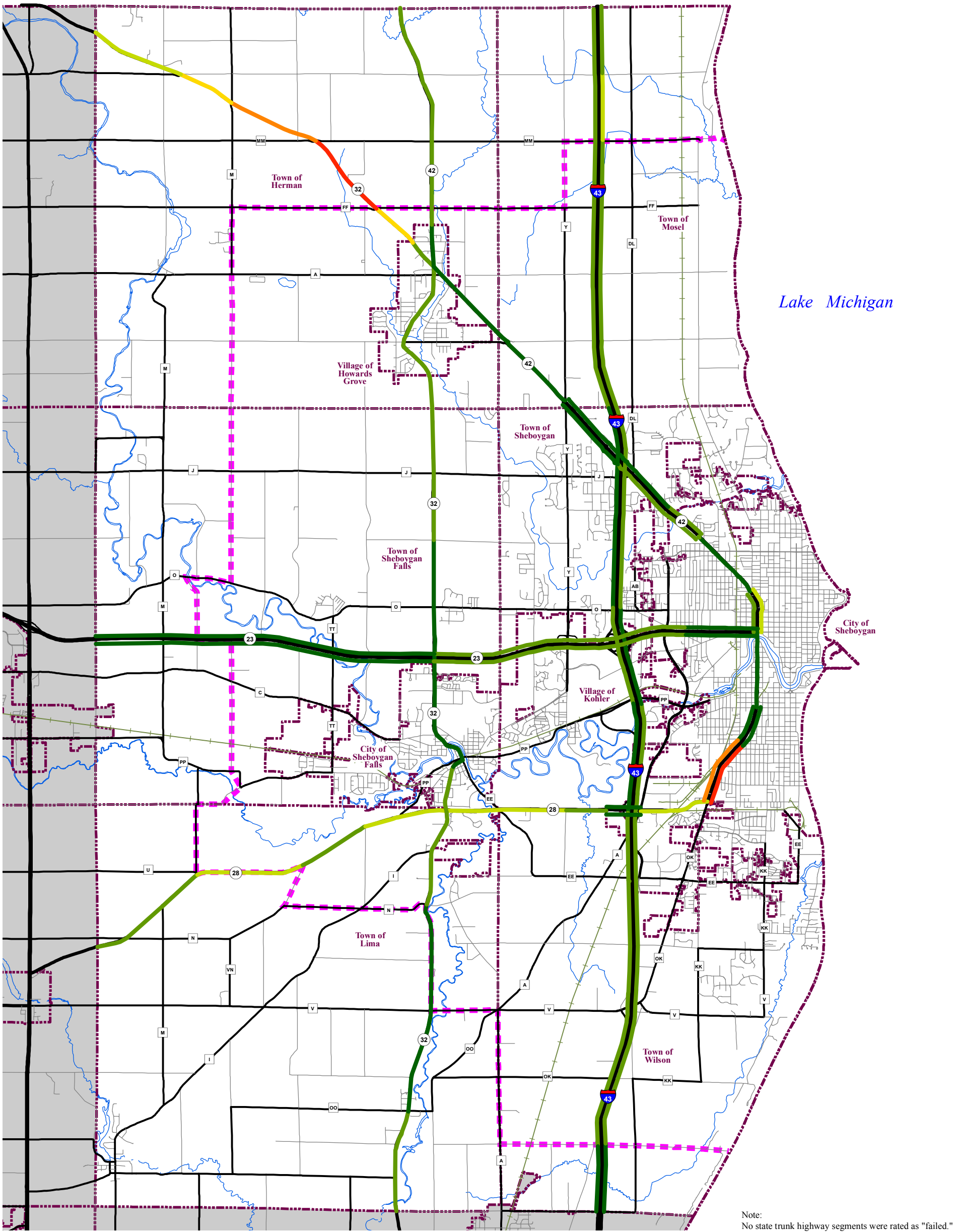
PASER Rating

- | | |
|---------------------------|------------------|
| 1-2 - Failed or Very Poor | 6-7 - Good |
| 3 - Poor | 8 - Very Good |
| 4-5 - Fair | 9-10 - Excellent |



Pavement Condition Index (PCI) Ratings for State Trunk Highway Segments
Communities of the Sheboygan Metropolitan Planning Area
October, 2017

41

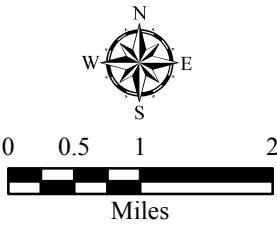


Sheboygan Metropolitan Planning Area Boundary



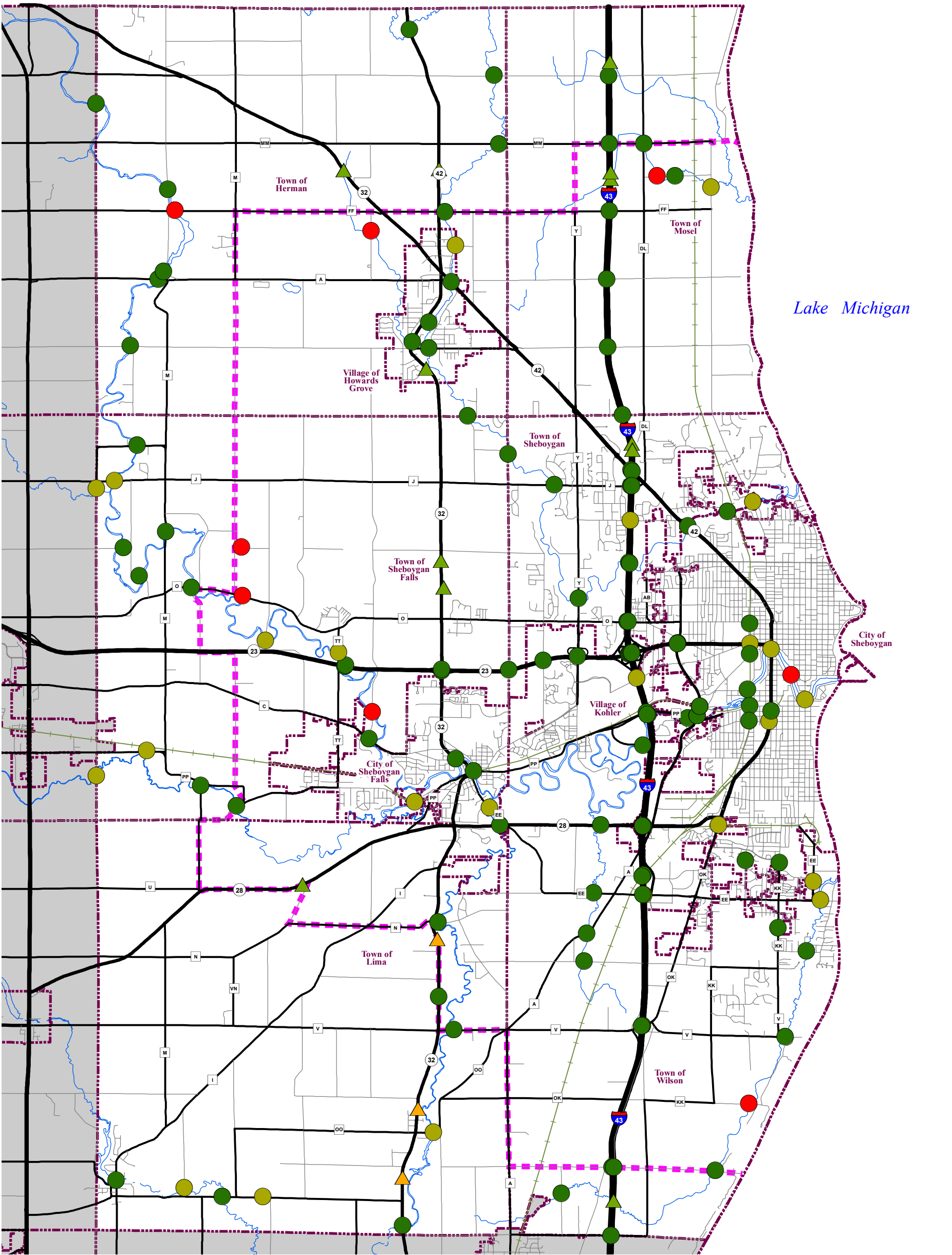
G:/Sheboygan/MPO/Long Range/2017
Source: WDNr, 2009; WisDOT, 2014 - 2017; Sheboygan County, 2016; Bay-Lake Regional Planning Commission, 2017.

- Very Good to Excellent
- Good
- Fair
- Poor
- Very Poor
- Serious



Sufficiency Ratings of Bridges and Culverts
Communities of the Sheboygan Metropolitan Planning Area
October, 2017

43



Sheboygan Metropolitan Planning Area Boundary



G:/Sheboygan/MPO/Long Range/2017
Source: WDNr, 2009; WisDOT, 2014 - 2017; Sheboygan County, 2016; Bay-Lake Regional Planning Commission, 2017.

Bridge Rating

- Sufficient
- Fair
- Deficient

Culvert Rating

- Good
- Fair

