2019

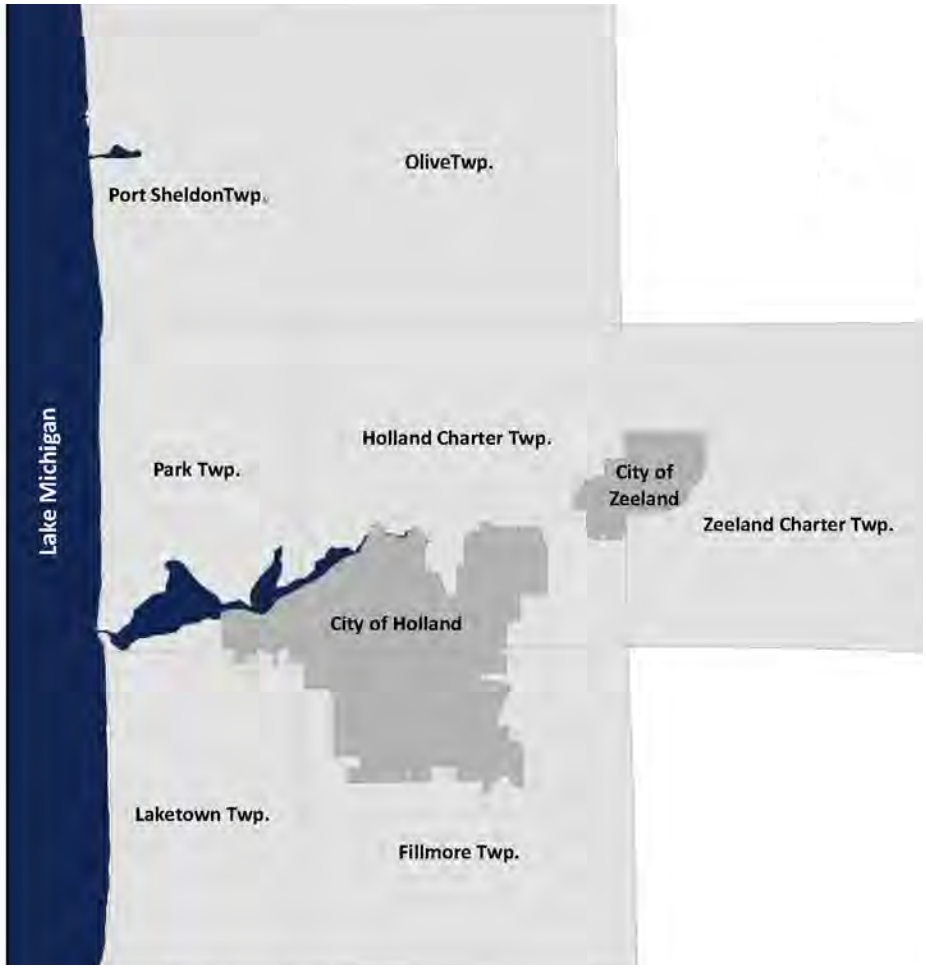
SYSTEM PERFORMANCE REPORT

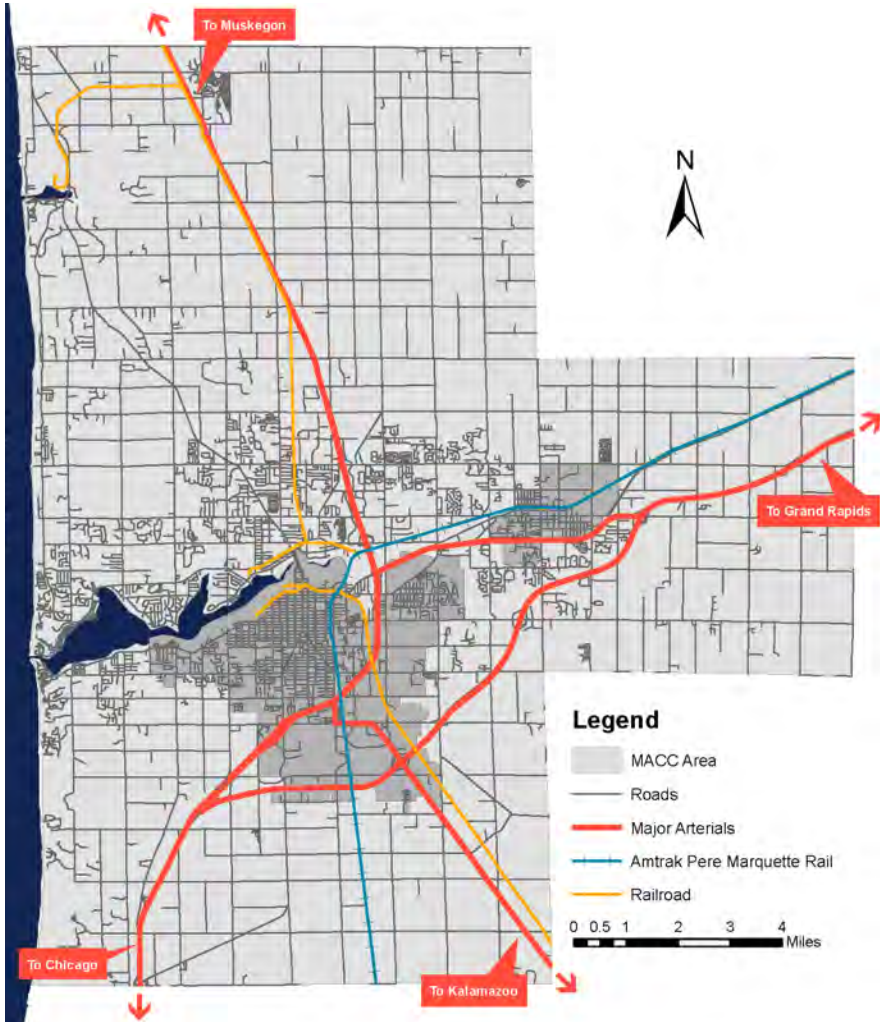
SAFETY | CONDITION | RELIABILITY | TRANSIT

MACC MPO Region

OVERVIEW

The Macatawa Area Coordinating Council (MACC) is a Metropolitan Planning Organization (MPO) that has a planning area that is approximately 200 square miles and includes fifteen members; seven townships, two cities, Allegan and Ottawa County Board of Commissioners, Allegan and Ottawa County Road Commissions, the Macatawa Area Express Transit Authority, and Michigan Department of Transportation. It's estimated that around 126,000 people live within the nine local units of government.

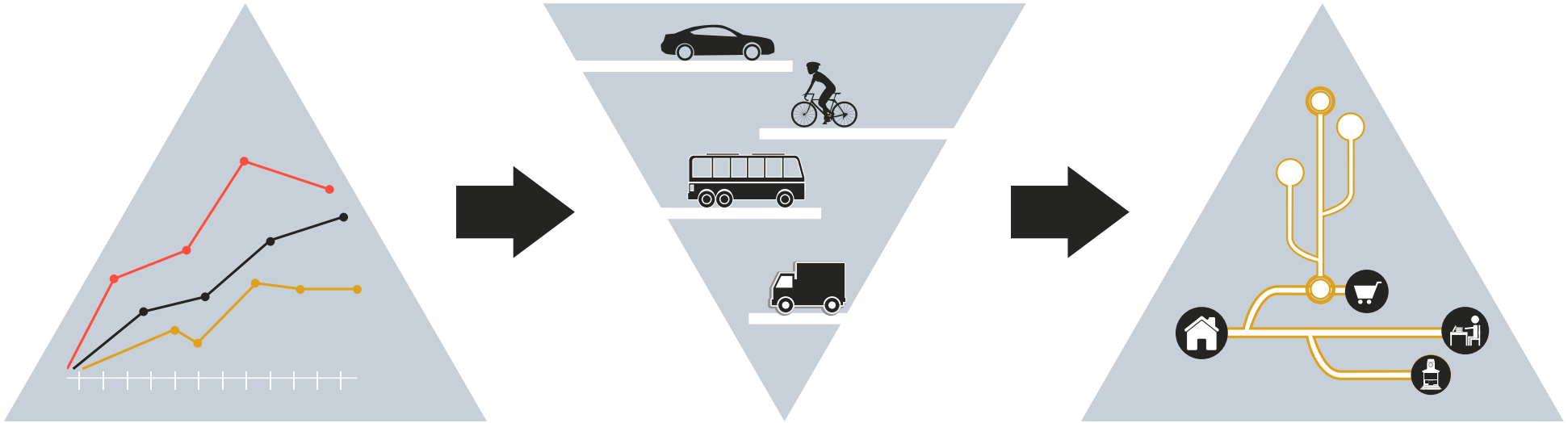




Performance Measures

OVERVIEW

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have set forth a Transportation Performance Management approach that can help organizations make smart investment decisions by basing funding on data and objective information. Performance measures at the local, regional, state, and federal levels are based on this type of approach.



Investment Decisions

Using goals, measures, and data to make better decisions about how to fund transportation.

Aimed at a Better Performing System

Setting targets, developing plans, reporting results, and measuring performance.

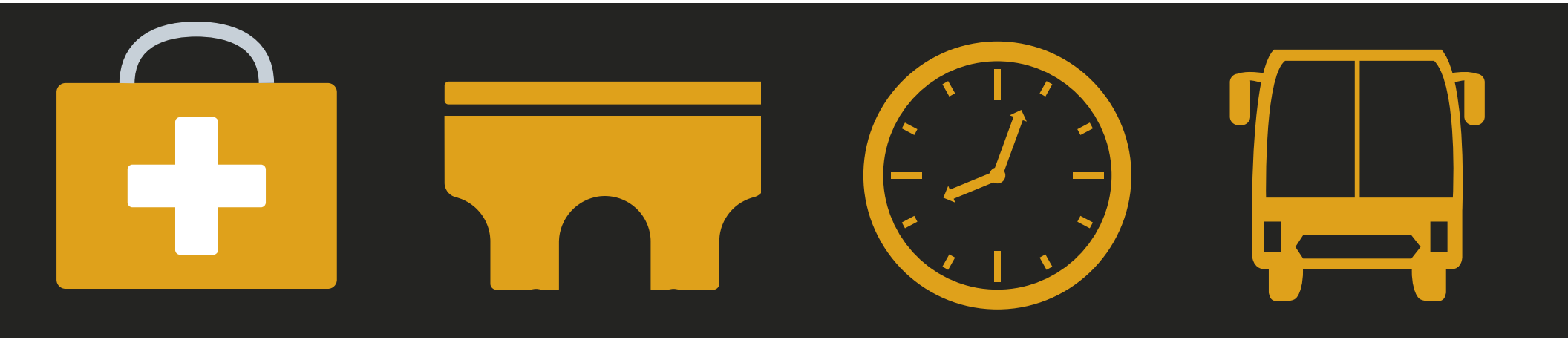
For Connected and Productive Communities

Focusing on the efficient delivery of goods and safe, reliable journeys to work, school, shopping, and community activities.

Performance Categories

MACC TARGETS

The Macatawa Area Coordinating Council (MACC) is required to incorporate a performance-based approach when building the Transportation Improvement Program (TIP) and the Long Range Transportation Plan (LRTP). The MACC has adopted four areas of performance targets that focus on safety, pavement and bridge condition, system reliability, and transit. It is the intention that any improvements made within the MACC area, that receive federal funding, will help support at least one of the targets set by the State of Michigan.



SAFETY

Looks at fatalities and serious injuries for motorists and non-motorized users.

BRIDGE & PAVEMENT

Examines pavement and bridge condition on interstate and non-interstate roads.

SYSTEM RELIABILITY

Looks at travel time reliability for users on interstate and non-interstate roads.

TRANSIT

Evaluates the condition of vehicles, equipment, and facilities.

Safety

ADOPTED TARGETS

The latest annual State targets for safety performance measures were released by the Michigan Department of Transportation on August 31, 2019 and were adopted by the MACC's Policy Board on January 6, 2020. Safety predictions are based on the current trends in the data and determined through models developed by the University of Michigan Transportation Institute. Higher than previous annual fatalities and serious injury numbers (2016 and 2017) have increased the five year rolling average. Final safety targets were developed after evaluating the correlation between traffic crashes, VMT, Gross Domestic Product (GDP) per capita, and other economic factors that impact travel. FHWA strongly suggests that targets should be based on trends and projections, and not be simply inspirational. There are currently 17 projects obligated in the MACC's FY20-23 TIP that are specifically geared toward the improvement of safety.

2020 Safety Performance Targets

Safety Performance Measures	Baseline (2014-2018)	2020 Target
Fatalities	987.4	999.4
Fatality Rate	0.99	0.97
Serious Injuries	5,415.6	5,520.4
Serious Injury Rate	5.41	5.34
Non-motorized Fatalities and Serious Injuries	742.4	735.8

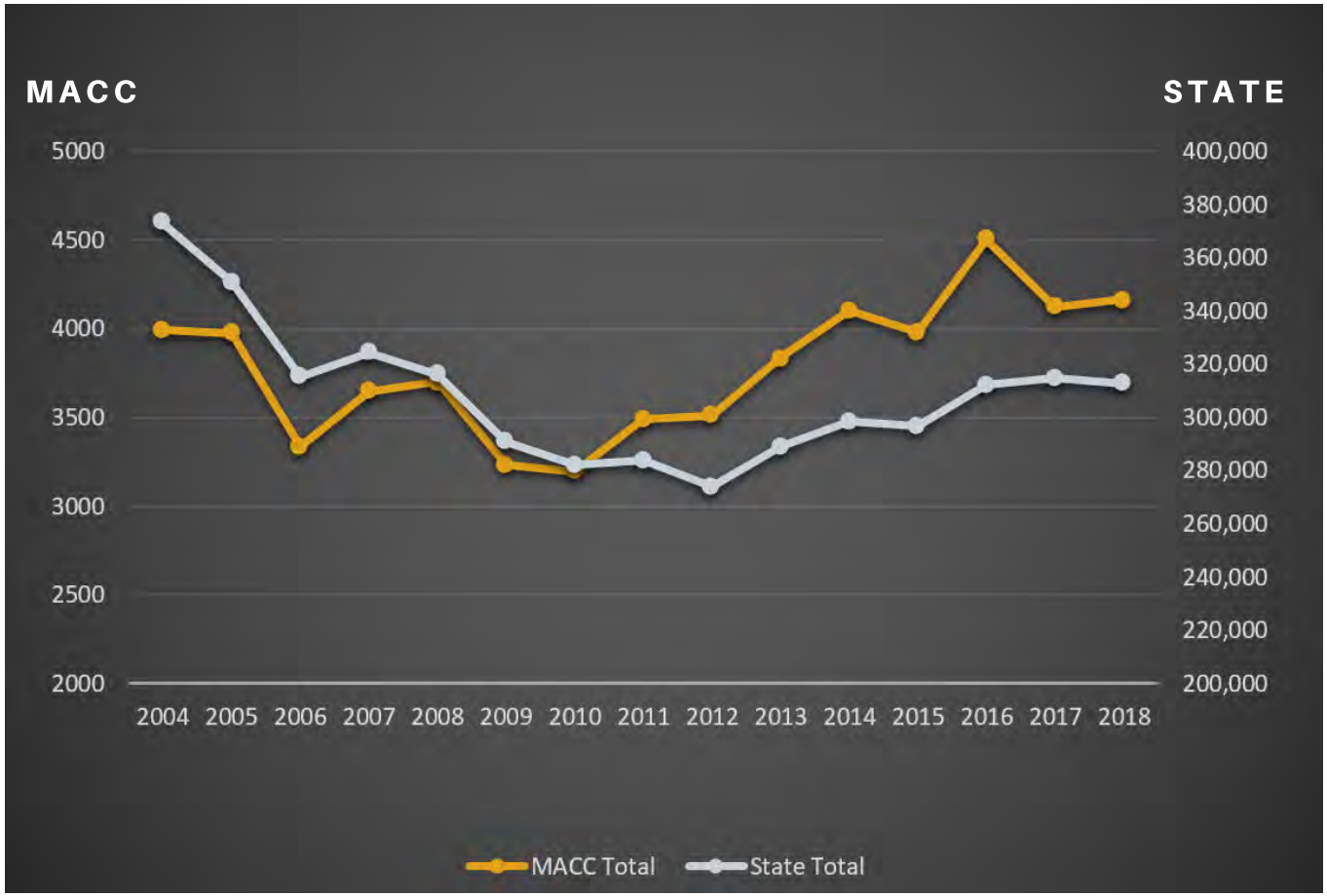
Michigan State Safety Targets (Rate per 100 million VMT)

Safety

LOCAL & STATE CRASH TRENDS

The MACC completed a trend analysis based on crash data for years 2004 to 2018. This process involved identifying total crashes within the State of Michigan as well as the MACC area specifically. The number of fatalities and serious injuries was also analyzed. Information was obtained at *michigantrafficcrashfacts.org*.

Number of Crashes: MACC Area Compared to State Total

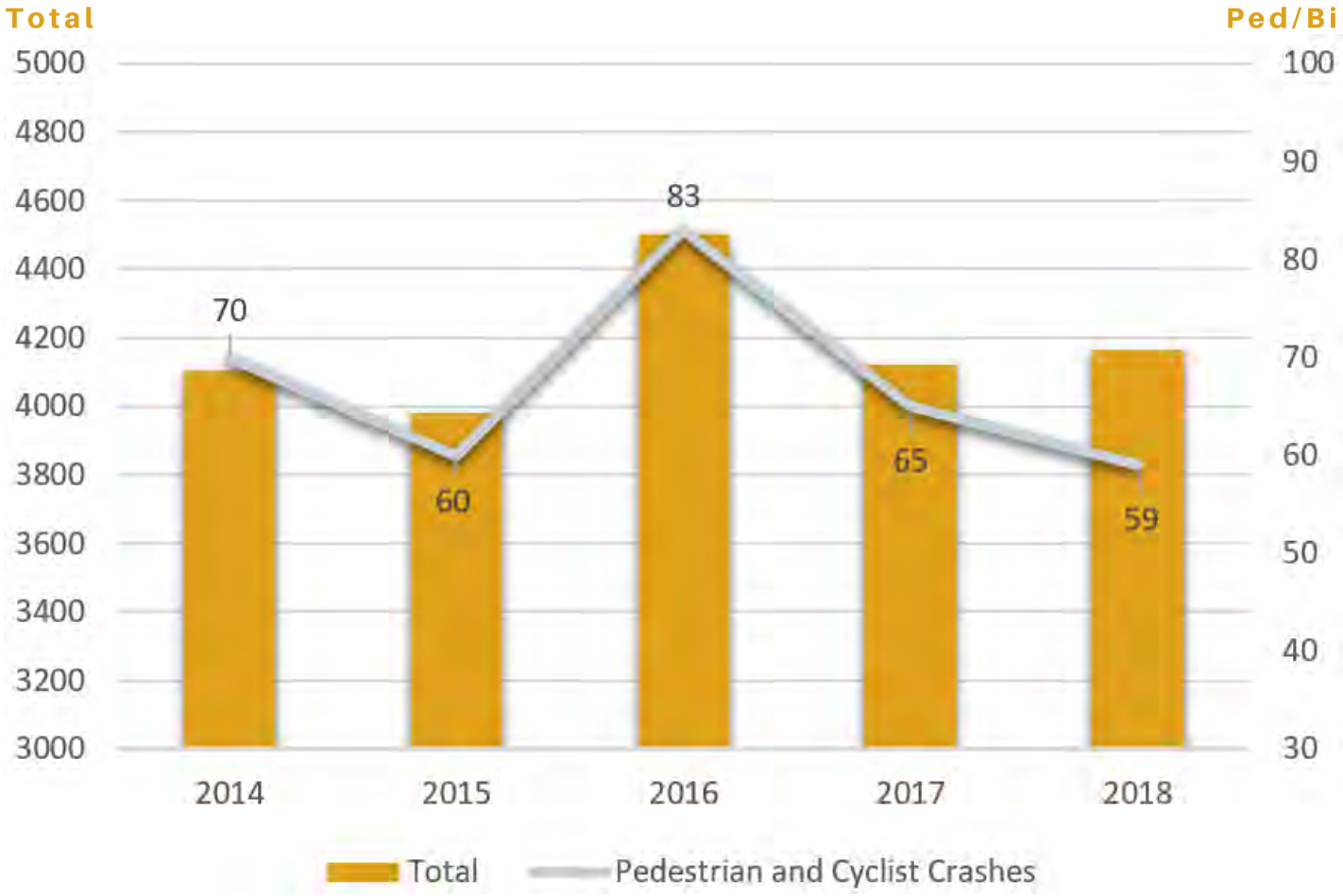


Safety

LOCAL CRASH TRENDS

The trend analysis shows that combined pedestrian and cyclist crashes followed a similar pattern to overall crashes in the MACC from 2014-2018. From 2016-2018 specifically, pedestrian and cyclist crashes have declined.

Number of Crashes in the MACC (2014-2018)



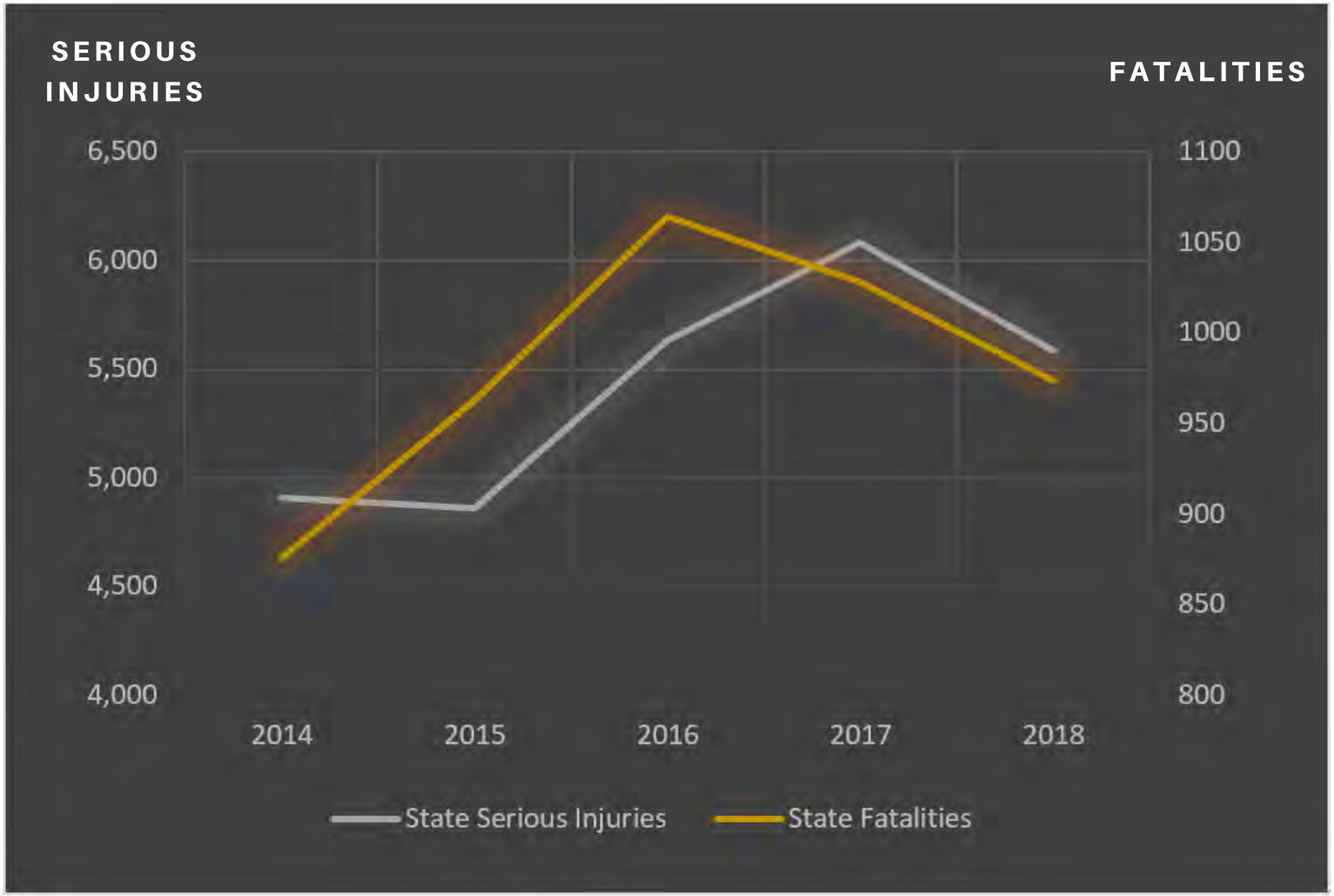
Year	Ped.	Bike
14'	*22*	*48*
15'	*16*	*44*
16'	*26*	*57*
17'	*19*	*46*
18'	*21*	*38*

Safety

STATE-WIDE FATALITIES & SERIOUS INJURIES

From 2014-2018, there were 27,078 serious injuries and 4,905 fatalities associated with crashes in the State of Michigan. Pedestrians accounted for 8% of combined serious injuries and fatalities and Cyclists accounted for 3%. 2018 and current trends for 2019 show fatality numbers trending down.

Serious Injuries and Fatalities in Michigan (2014-2018)



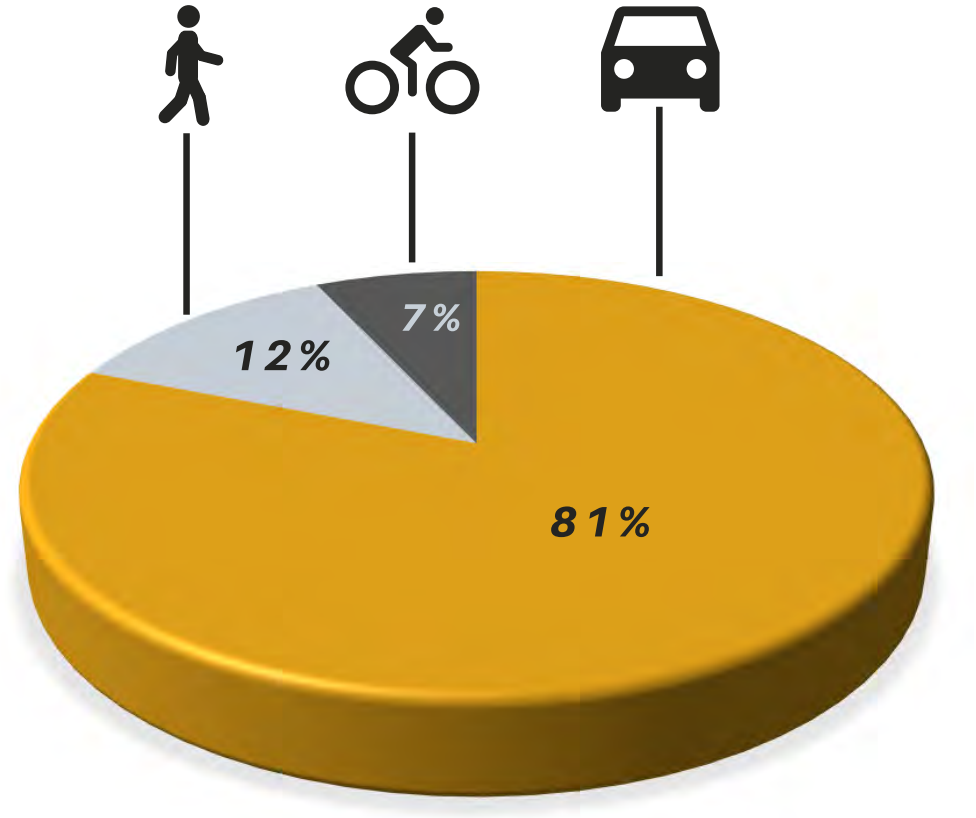
Safety

LOCAL FATALITIES

From 2014-2018, there have been 58 fatalities on the transportation system in the MACC area. Out of the 58, 11 of those killed were walking or riding a bicycle.

Number of Fatalities in the MACC Area (2014-2018)

Year	Ped.	Bike	Motorized	Total
14'	1	0	5	6
15'	1	1	4	6
16'	2	1	16	19
17'	1	1	9	11
18'	2	1	13	16
	7	4	47	58



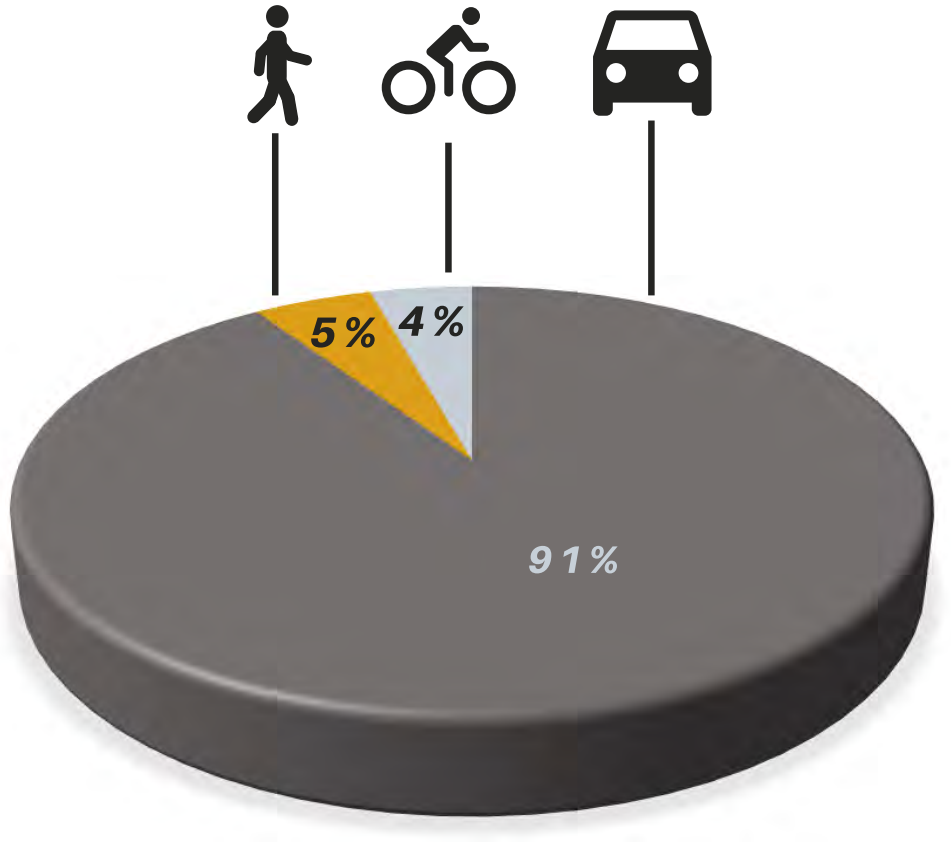
Safety

LOCAL SERIOUS INJURIES

From 2014-2018, out of the 4,166 crashes that occurred in the MACC area, 417 people ended up with serious injuries. Out of 417 people, 39 of those seriously injured were people who were walking or riding a bicycle.

Number of Serious Injuries in the MACC Area (2014-2018)

Year	Ped.	Bike	Motorized	Total
14'	2	4	63	69
15'	3	4	82	89
16'	4	3	83	90
17'	5	4	76	85
18'	7	3	74	84
	21	18	378	417



Pavement & Bridge Condition

ADOPTED TARGETS

The Michigan Department of Transportation (MDOT) has developed two-year and four-year targets for pavement condition for Interstates and for Non-Interstate National Highway System (NHS). The performance measures focus on pavement conditions that are good or poor. Metrics include an International Roughness Index (IRI), cracking, rutting, and faulting. MDOT has also developed a system to evaluate bridge condition. There are currently 24 projects obligated in the MACC's FY20-23 TIP that are specifically geared toward improving pavement and bridge condition.

Pavement Quality Targets

Pavement Performance Measure	Baseline Condition (2017)	2 yr. Target (2020)	4 yr. Target (2022)
% Interstate Pavement in Good Condition	56.8%	N/A	47.8%
% Interstate Pavement in Poor Condition	5.2%	N/A	10.0%
% Non-Interstate Pavement in Good Condition	49.7%	46.7%	43.7%
% Non-Interstate Pavement in Poor Condition	18.6%	21.6%	24.6%

Bridge Quality Targets

Bridge Performance Measure	Baseline Condition (2017)	2 yr. Target (2020)	4 yr. Target (2022)
% National Highway System Deck Area in Good Condition	32.7%	27.2%	26.2%
% National Highway System Deck Area in Poor Condition	9.8%	7.2%	7.0%

Pavement & Bridge Condition

MACC PAVEMENT QUALITY

Since 2004, data on the Macatawa Area's federal-aid road system has been collected and inventoried. State of Michigan Act 51 (P.A. 499 2002, P.A. 199 2007) requires each local road agency to annually report the mileage and condition of the road and bridge system within their jurisdiction and report this data to the Transportation Asset Management Council (TAMC).

ABOUT PASER

Pavement Surface Evaluation and Rating (PASER) uses a visual inspection to evaluate pavement surface condition. It rates various types of pavement distress on a scale of 1-10 with 1 being the worst condition, and 10 being the best. PASER helps to predict the remaining service life of a road and the type of maintenance needed, therefore, helping to identify and prioritize future road projects in our community.

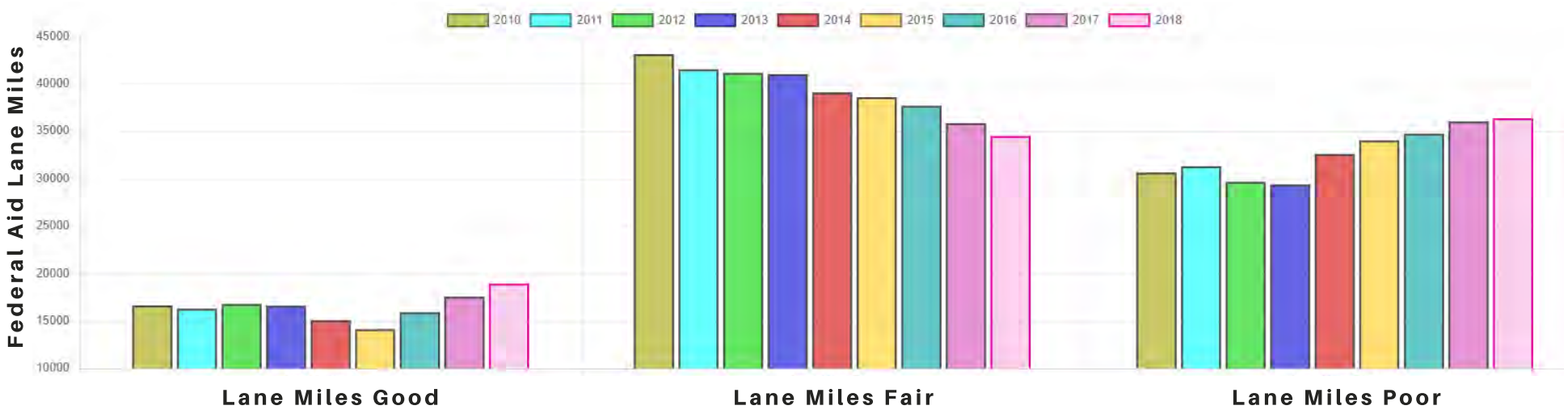
Data is gathered by three-person teams made up of one MDOT employee, one member of the local road agency, and one member from the regional planning agency. This team evaluates the pavement while driving and records the road surface type, number of lanes, and PASER rating of each road using a laptop and GPS receiver. Data is then stored and analyzed using a program called Roadsoft, developed by the Michigan Technological University's Center for Technology and Training.

Pavement & Bridge Condition

STATE PAVEMENT QUALITY

Based on Michigan's 2018 Roads & Bridges Annual Report, poor pavements continue to increase and federal-aid roads in poor condition now surpass the number of miles in fair condition. The data below was supplied by Michigan's Transportation Asset Management Council.

Pavement Condition Trends
State of Michigan

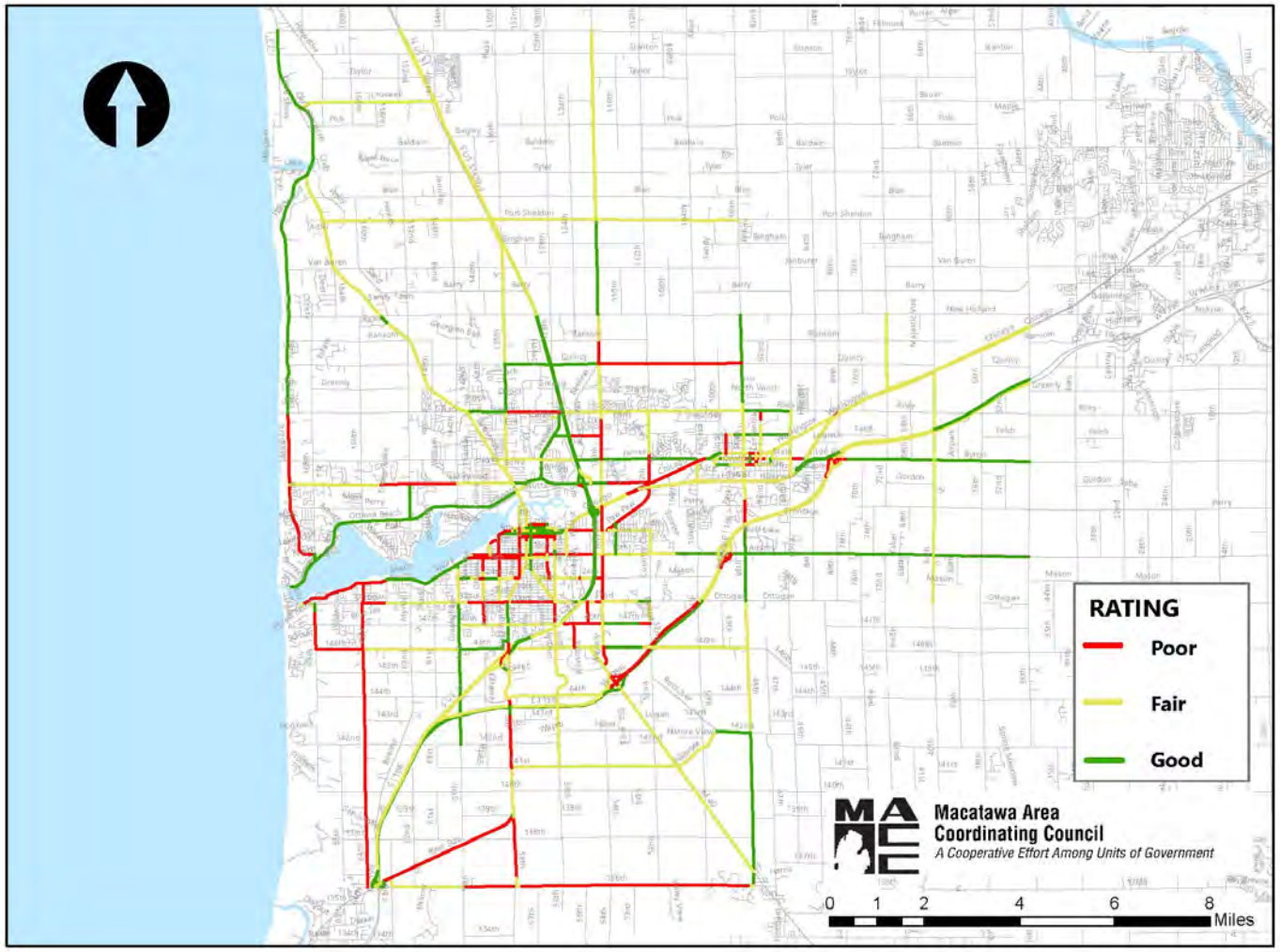


Pavement & Bridge Condition

MACC PAVEMENT QUALITY

Since the MACC alternates between counties each year, the map below represents roads that were rated in 2018 in Allegan County and 2019 rated roads in Ottawa County.

2018-2019 Federal-aid Pavement Condition



Pavement & Bridge Condition

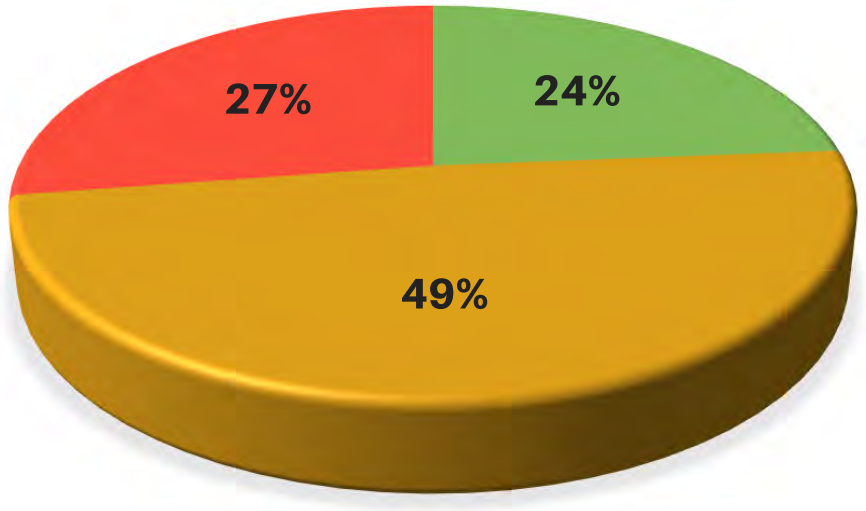
MACC PAVEMENT QUALITY

Allegan County

2018 Federal-Aid Road Conditions

Allegan County was not rated in 2019

GOOD	25.16 Miles
FAIR	51.83 Miles
POOR	29.06 Miles



10	9	8	7	6	5	4	3	2	1
0	17.464	7.694	26.300	13.083	12.445	24.483	4.581	0	0

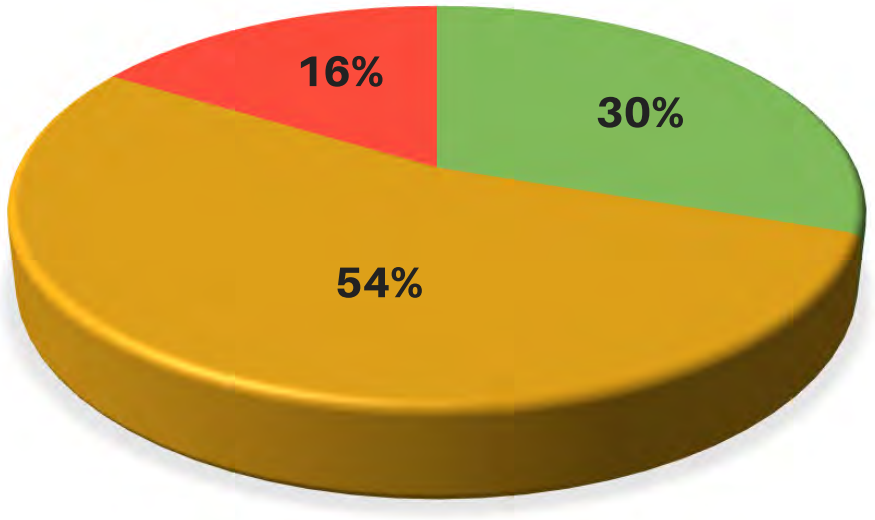
Pavement & Bridge Condition

MACC PAVEMENT QUALITY

Ottawa County

2019 Federal-Aid Road Conditions

GOOD	71.73 Miles
FAIR	126.86 Miles
POOR	38. 60 Miles

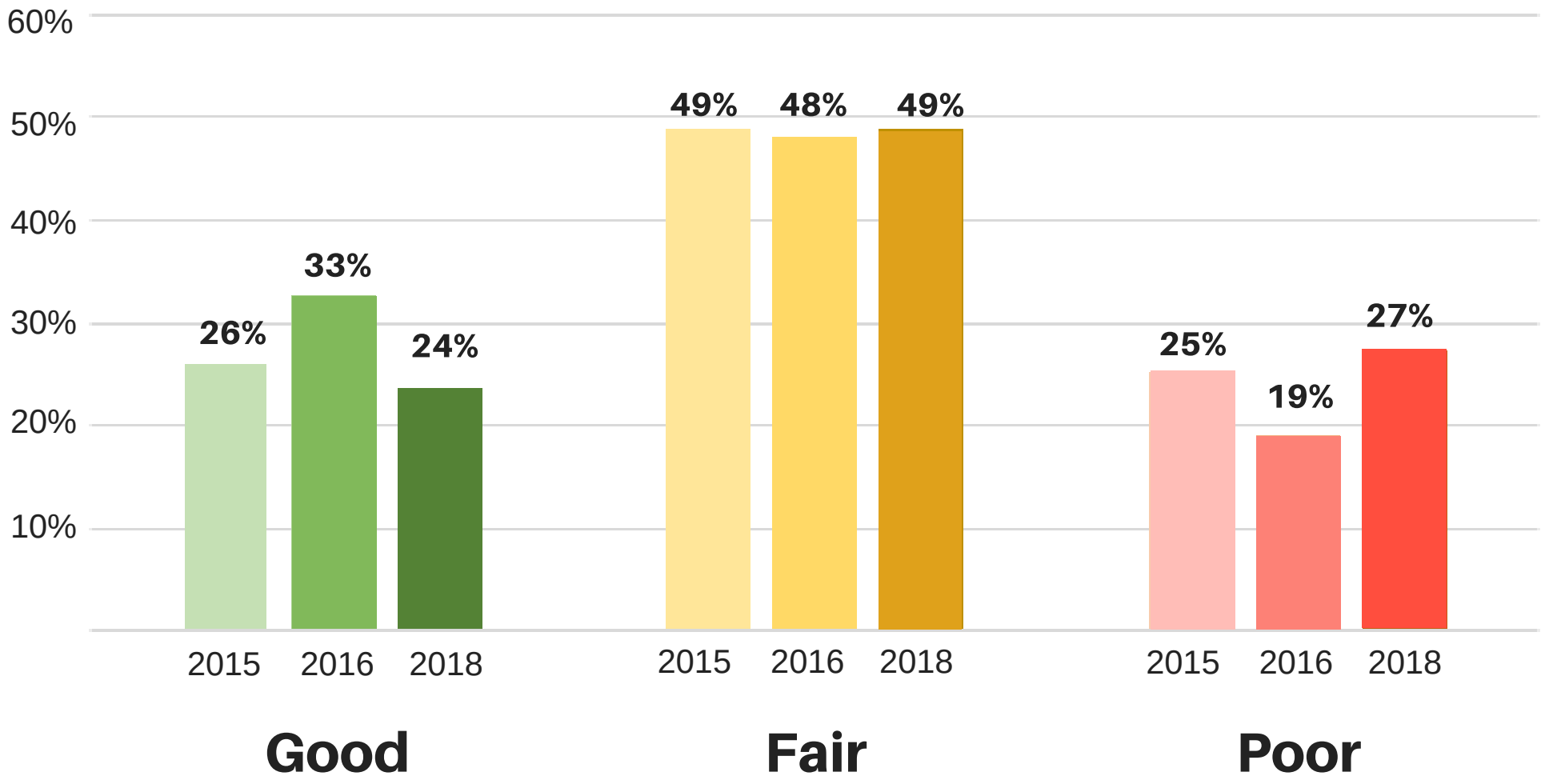


10	9	8	7	6	5	4	3	2	1
.397	24.852	46.477	34.967	69.243	22.649	18.549	19.385	.666	0

Pavement & Bridge Condition

MACC PAVEMENT QUALITY TRENDS - ALLEGAN

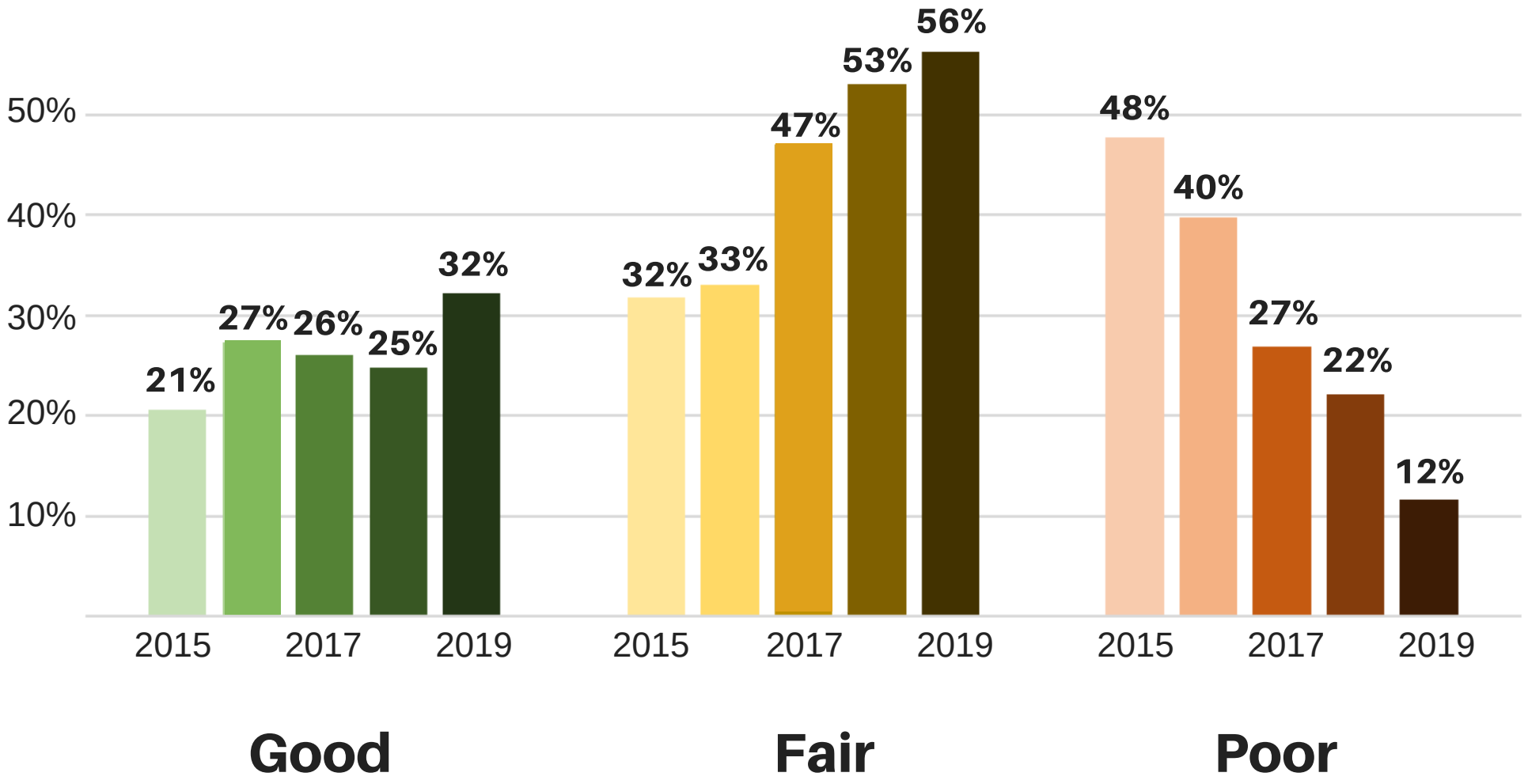
The pavement figures below for Allegan County include the portion of the City of Holland that is located within Ottawa County, Laketown Township, and Fillmore Township. Allegan County was not rated in 2017 or 2019.



Pavement & Bridge Condition

MACC PAVEMENT QUALITY TRENDS - OTTAWA

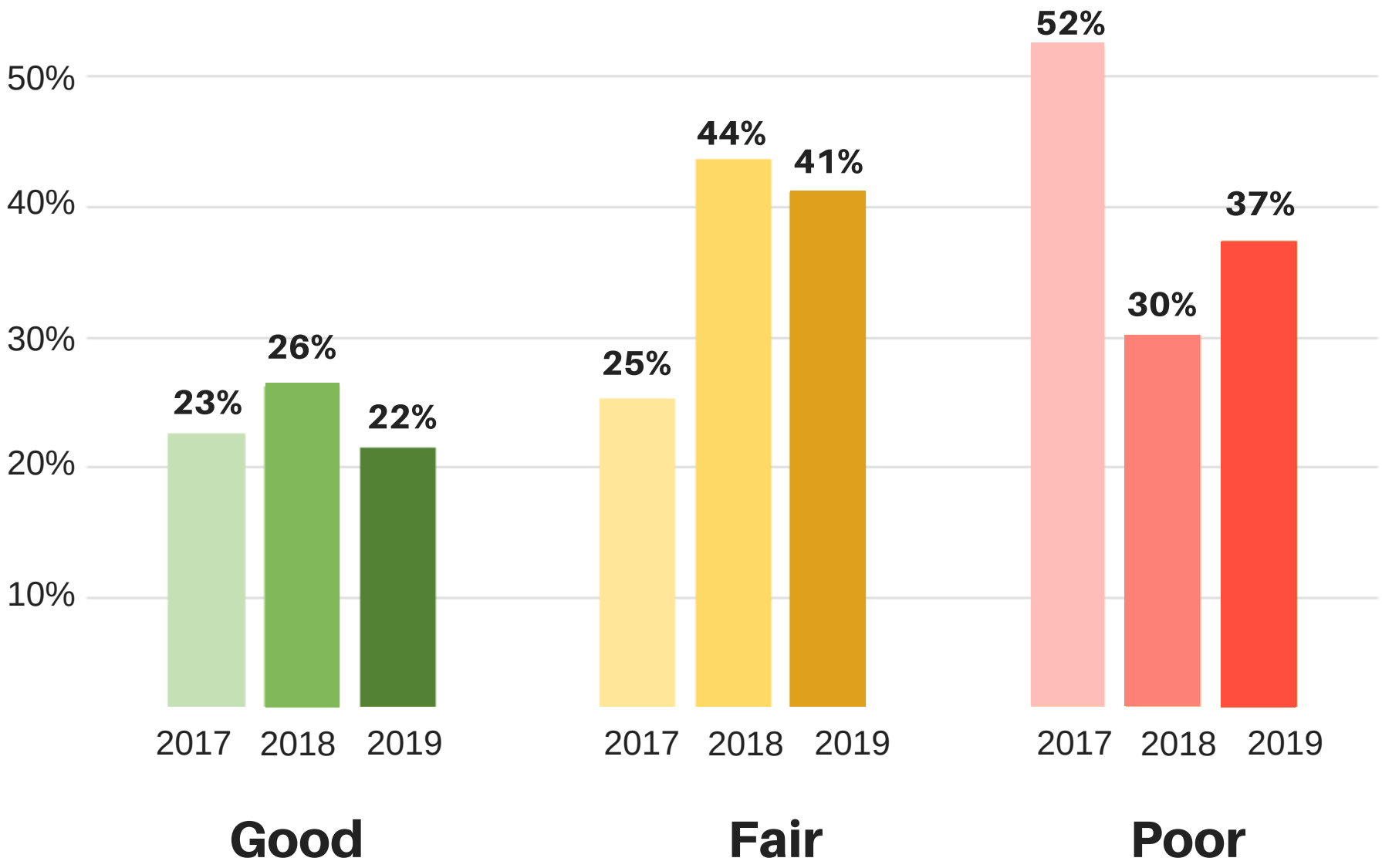
The figures below for Ottawa County include Port Sheldon Township, Olive Township, Park Township, Holland Charter Township, the City of Zeeland, and Zeeland Charter Township. The portion of the City of Holland within Ottawa County is represented separately on the next page.



Pavement & Bridge Condition

MACC PAVEMENT QUALITY TRENDS - CITY OF HOLLAND

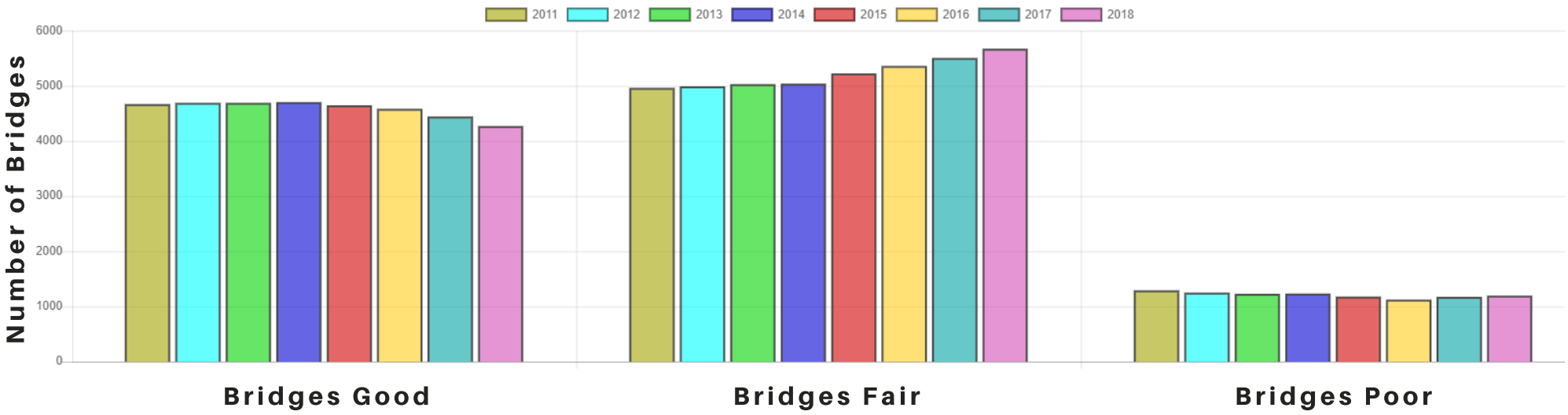
The percentages below represent ratings in the Ottawa County portion of the City of Holland from 2017-2019.



Pavement & Bridge Condition

STATE BRIDGE QUALITY

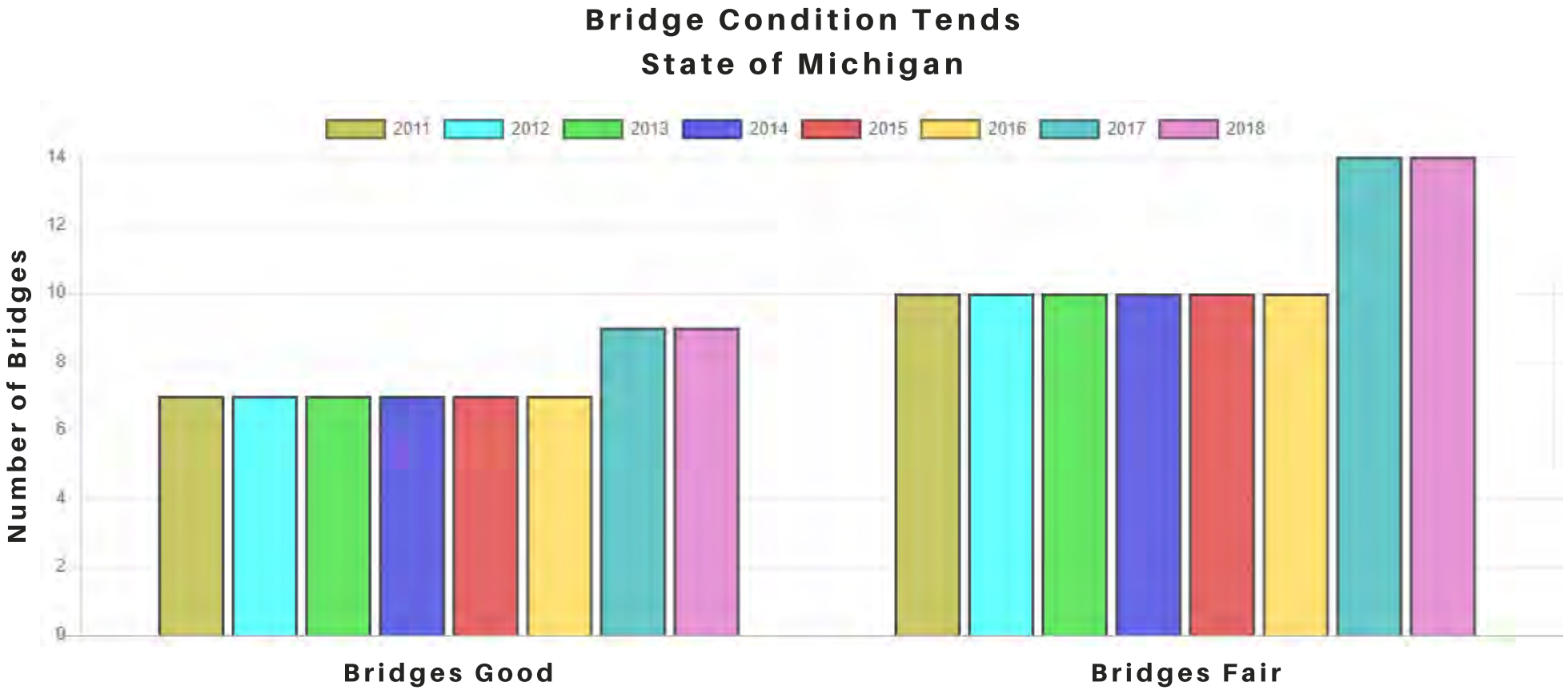
According to Michigan's 2018 Road and Bridges Annual Report, bridges in fair condition continue to increase, representing a need for preservation to prevent a further increase in poor bridges. The data below was supplied by Michigan's Transportation Asset Management Council.



Pavement & Bridge Condition

LOCAL BRIDGE QUALITY

As of 2018, there are 23 bridges that are reported on in the State's system. In 2018, 61% of the 23 bridges were identified to be in fair condition and 39% in good condition. This data was supplied by Michigan's Transportation Asset Management Council.



System Reliability

ADOPTED TARGETS

Data on travel time is evaluated to see how it varies over time and to demonstrate consistency. To understand reliability as a measure it's important to highlight how it is different from congestion. Congestion occurs when there are too many vehicles at the same place at the same time (demand exceeds supply). An increase in congestion usually results in a decrease in "quality" of the driving experience. An increase in congestion relates to an increase in the "use of the system" and usually occurs during the "peak" periods of the day. Most travelers are accustomed to everyday congestion – they can plan for it. Time reliability relates to the consistency or dependability in travel time, and is measured from day to day, or across differing times of the day. Unreliable travel times usually occur during the "peak" periods of the day, and most travelers are less tolerant of "unexpected" delays – as they can't plan for them. Note, due to longer travel times, the freight reliability measure is calculated using the 95th percentile travel time.

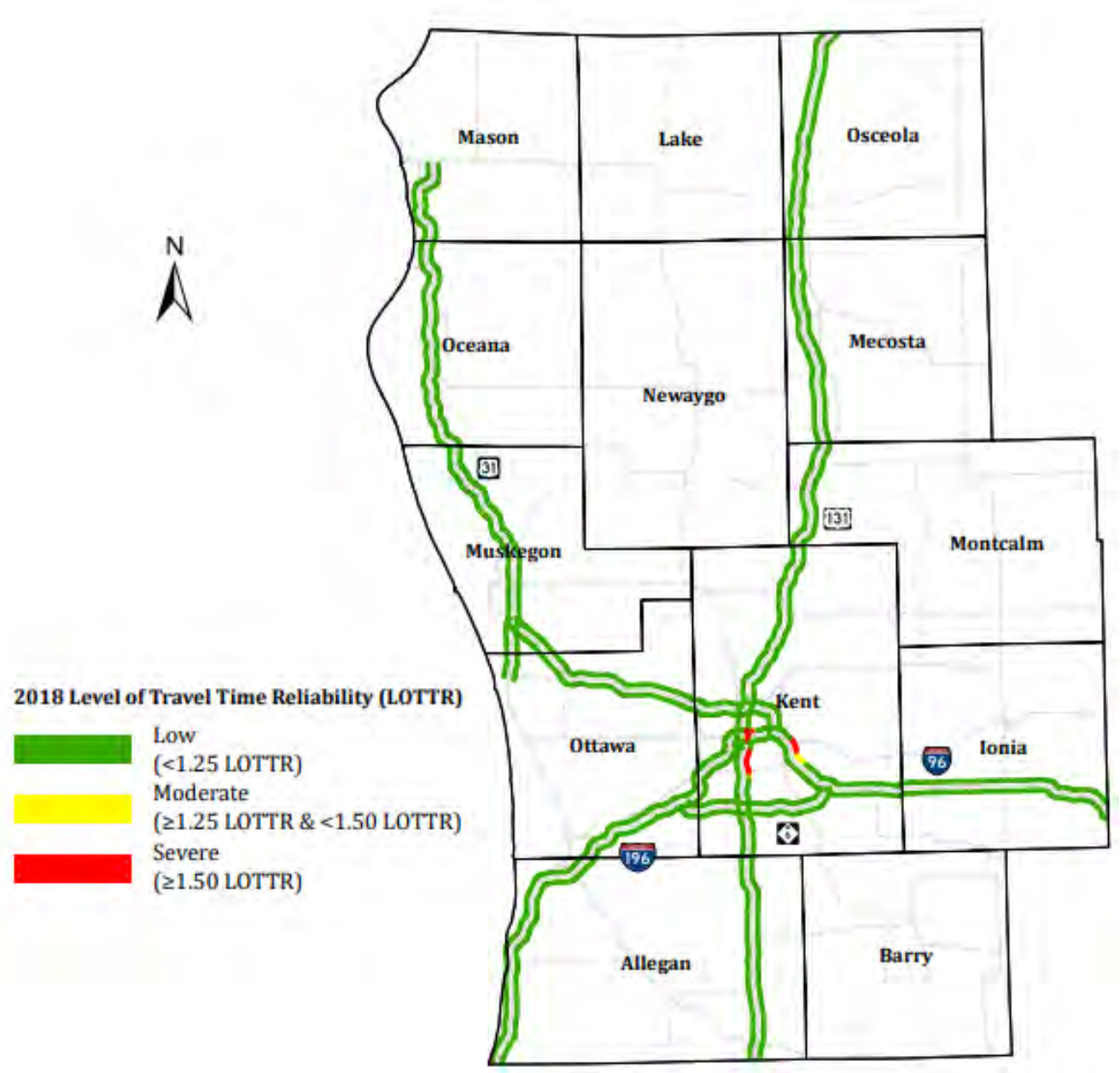
Reliability Targets

Measure	Baseline from Jan. 2017 to Apr. 2018	2 yr. Target (2020)	4 yr. Target (2022)
Interstate Travel Time Reliability	2017 - 85.2% 2018 - 84.9%	75%	75%
Non-Interstate Travel Time Reliability	2017 - 86.1% 2018 - 85.7%	N/A	70%
Freight Reliability	2017 - 1.38 2018 - 1.50	1.75	1.75

System Reliability

STATE RELIABILITY

The figure to the right displays the level of travel time reliability based on severity level in the Grand Region for weekdays between 4:00 pm - 8:00 pm. This performance metric depicts the consistency and dependability of road segments. To determine if a road has reliable travel times, a threshold value of 1.50 is utilized. Any value less than 1.50 would claim to have overall system reliability for travel times. Further information on reliability can be found in the 2018 Freeway Congestion and Reliability Report found on MDOT's website.

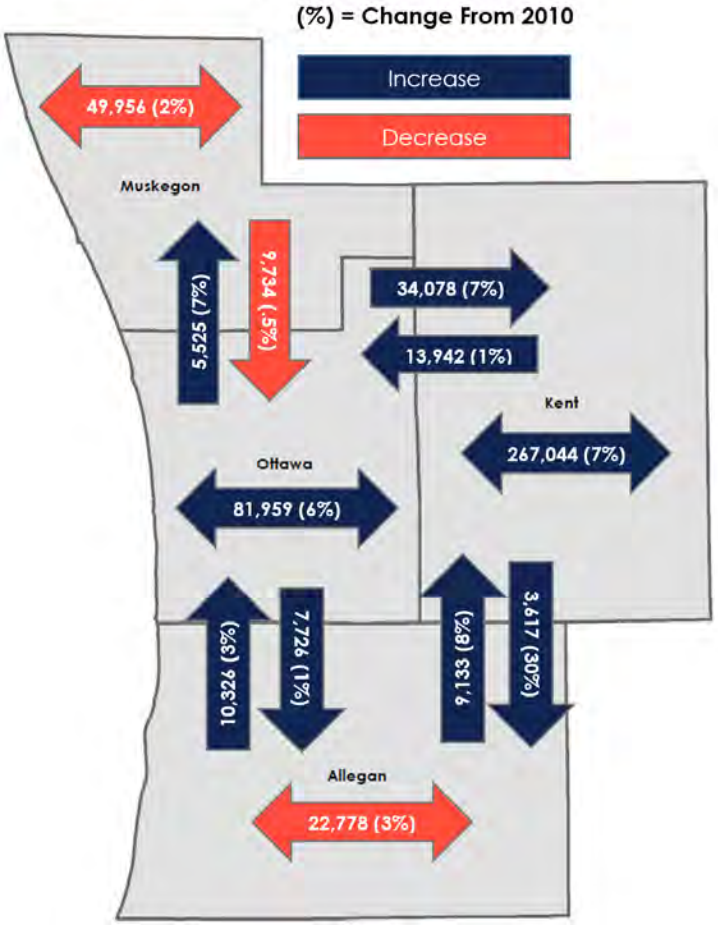


System Reliability

MACC TRAVEL PATTERNS

2015 County-to-County commute data, illustrates significant worker flows into and out of the MACC area to neighboring counties. Ottawa County draws 9,734 workers from Muskegon County, 10,326 workers from Allegan County and 13,942 workers from Kent County. Conversely, 5,525 Ottawa County workers travel to Muskegon County, 7,726 to Allegan County and 34,078 to Kent County.

County-to-County Commuting Flows (2015 data)



HOW DO PEOPLE GET TO WORK IN THE MACC AREA?

92.6%

.92%

3.4%

.53%

1.7%

.45%

System Reliability

MACC TRAVEL PATTERNS

The American Community Survey Data (ACS) provides information about the average commute times to work. The table below compares 2010 average commute times to work to 2015 average commute times to work. Overall, the 2015 average commute in the MACC Area is about 18.5 minutes, up from 17.9 minutes in 2010.

Average Commute Times to Work

Jurisdiction	2010 (In Minutes)	2015 (In Minutes)
Laketown Twp.	19.4	18.7
Fillmore Twp.	15.8	16.8
ParkTwp.	18.4	22.8
Holland Charter Twp.	17.4	16.5
Zeeland Charter Twp.	17.1	15.5
Port Sheldon Twp.	20.7	21.4
Olive Twp.	19.3	21.6
City of Zeeland	17.0	16.1
City of Holland	15.9	17.1

Transit

TYPES OF TARGETS

Transit performance targets include revenue vehicles, equipment, and facilities. Recording the condition of each asset helps transit agencies to achieve or maintain transit assets above marginal or poor condition ratings, known as maintaining a State of Good Repair (SGR). The Macatawa Area Express (MAX Transit) has federal dollars allocated each year over the four-year program of the MACC's FY20-23 TIP to target improvement of the transit system.

ROLLING STOCK

EQUIPMENT

FACILITIES

Transit

LOCAL TRANSIT AGENCY

Transit agencies are required to have a Transit Asset Management (TAM) plan and update the plan every four years. The agencies also need to track the asset conditions for rolling stock, equipment, and facilities. Since transit providers vary widely with the type and scale of assets, transit providers are instructed to individually create TAM plans.The following table shows MAX Transit's annual performance targets for fiscal year 2020.

MAX Transit Annual Performance Targets (FY2020)

ASSET CATEGORY	PERFORMANCE MEASURE	FY2020 TARGET
Rolling Stock		
Bus	Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	0%
Cutaway Bus		0%
Rubber-tire Vintage Trolley		100%
Van		0%
Equipment		
Non-Revenue/Service Automobile	Age - % of vehicles that have met or exceeded their ULB	50%
Non-Vehicle Equipment (>$50,000)		0%
Facilities		
Maintenance	Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	0%
Passenger Facilities		0%