



Black Hawk County MPO **Performance Measures Report** **2021**

Adopted May 13, 2021

Black Hawk County Metropolitan Planning Organization

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MPO Performance Measure Report

The 2045 Long-Range Transportation Plan provides the framework for the investment of anticipated transportation funds based on forecasted needs and regional goals and objectives. Based on four goals of the Plan, the MPO developed performance measures to monitor trends and track progress toward desired outcomes. This report provides historical data to gauge the region's progress. Each performance measure corresponds to at least one goal in the 2045 Plan, as shown below. The icons provide a general indication of the trend of each measure (green = moving in the desired direction).

Safety		Preservation		Efficiency		Multimodal	
Number of fatalities		Pavement in good and poor condition (Interstate)		Person-miles that are reliable (Interstate)		On-road bicycle accommodations	
Fatality Rate		Pavement in good and poor condition (non-Interstate NHS)		Person-miles that are reliable (non-Interstate NHS)		Sidewalks and crosswalks	
Number of serious injuries		*Pavement in good condition (state owned)		Truck Travel Time Reliability Index		Workers walking to work	
Serious injury rate		*Pavement in poor condition (state owned)		TDM base year VHT		MET fixed route rides	
Non-motorized fatalities & serious injuries		Pavement in good condition (city & county owned)		*Annual VMT per capita		Buses met or exceeded ULB	
Traffic accidents involving bicyclists & pedestrians		Pavement in poor condition (city & county owned)				Mini-buses met or exceeded ULB	
		Bridges in good condition (NHS)				Non-revenue vehicles met or exceeded ULB	
		Bridges in poor condition (NHS)				Conditions of MET facilities	
		Posted or closed bridges				Bus shelters	
		Structurally deficient bridges					
		Average bridge sufficiency rating					

**Recommended performance measure*

Performance-Based Planning and Programming

The foundation of the MPO planning process is built upon performance-based planning and programming. This approach provides a link between short-term management and long-range decisions about policies and investments made for the transportation system. Performance measures are used by the MPO to:

- Assess how well the transportation system is operating.
- Provide information to support decisions.
- Identify and mitigate issues.
- Demonstrate transparency and accountability.

The federal transportation bill, Fixing America's Surface Transportation (FAST) Act, formalizes the performance-based planning process to ensure that State DOTs and MPOs invest in projects that collectively make progress towards seven National Goals established by Congress. State DOTs, MPOs, and transit providers are required to implement a performance-based planning and programming process by setting performance goals, measures, and targets, and coordinating to the maximum extent practicable to ensure consistency.

The Black Hawk County MPO continues to coordinate with the Iowa DOT and MET Transit to establish performance measure targets for the metropolitan area. The MPO has the option to adopt its own performance targets or support Iowa DOT/MET Transit targets. To date, the MPO has agreed to adopt Iowa DOT and MET Transit targets.

The most recent adoption date for performance measure targets and the approved targets can be found on the INRCOG Transportation Department webpage.

www.inrcog.org/trans.htm

Black Hawk County MPO Goals, Objectives, and Performance Measures

The MPO identified four goals for the 2045 Long-Range Transportation Plan which are to:

- Increase the **safety** of the transportation system.
- Strategically **preserve** the existing infrastructure.
- Support an **efficient** transportation system.
- Provide a high degree of **multimodal** accessibility and mobility.

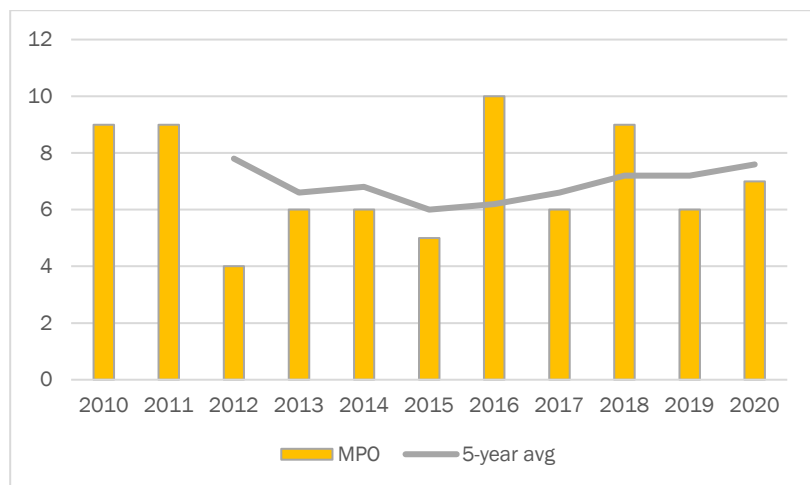
The MPO has adopted several objectives to help achieve these goals and performance measurements to track the progress toward meeting the objectives. This includes federally required performance measurements. The measures in this report are not meant to be exhaustive but rather allow for tracking of meaningful progress towards the MPO's goals and objectives and implementation of the state transportation plan.

Fatalities



Number of fatalities

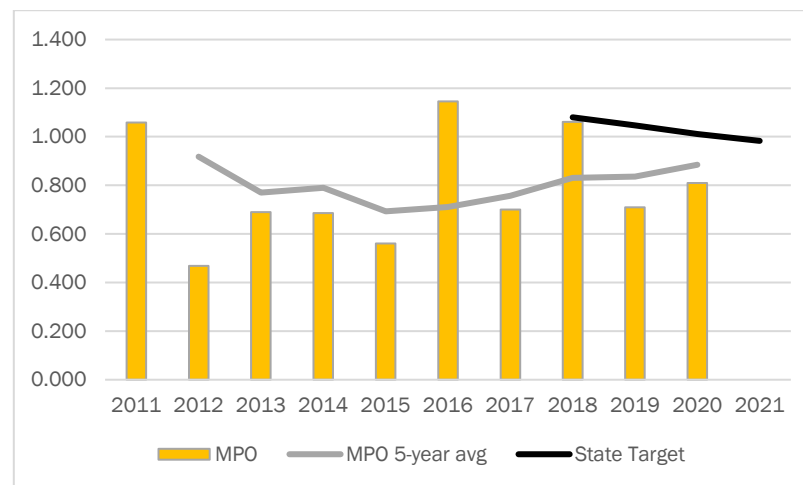
Desired trend Current trend



This measure tracks the number and 5-year average of fatalities. The number of fatalities resulting from crashes can vary significantly from one year to the next. The 5-year moving average smooths out annual variations to observe trends over time. Over the past five years, the number of traffic fatalities in the MPO has been trending upward.

Fatality rate per 100 million VMT

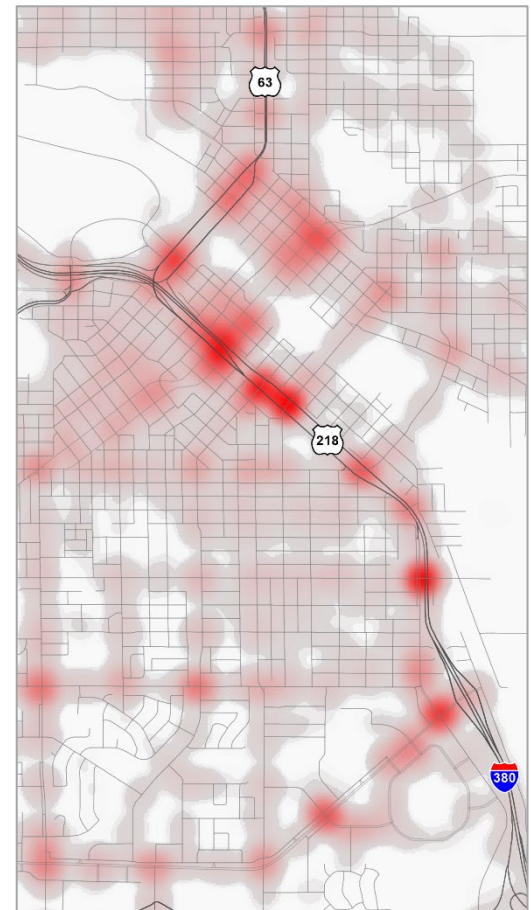
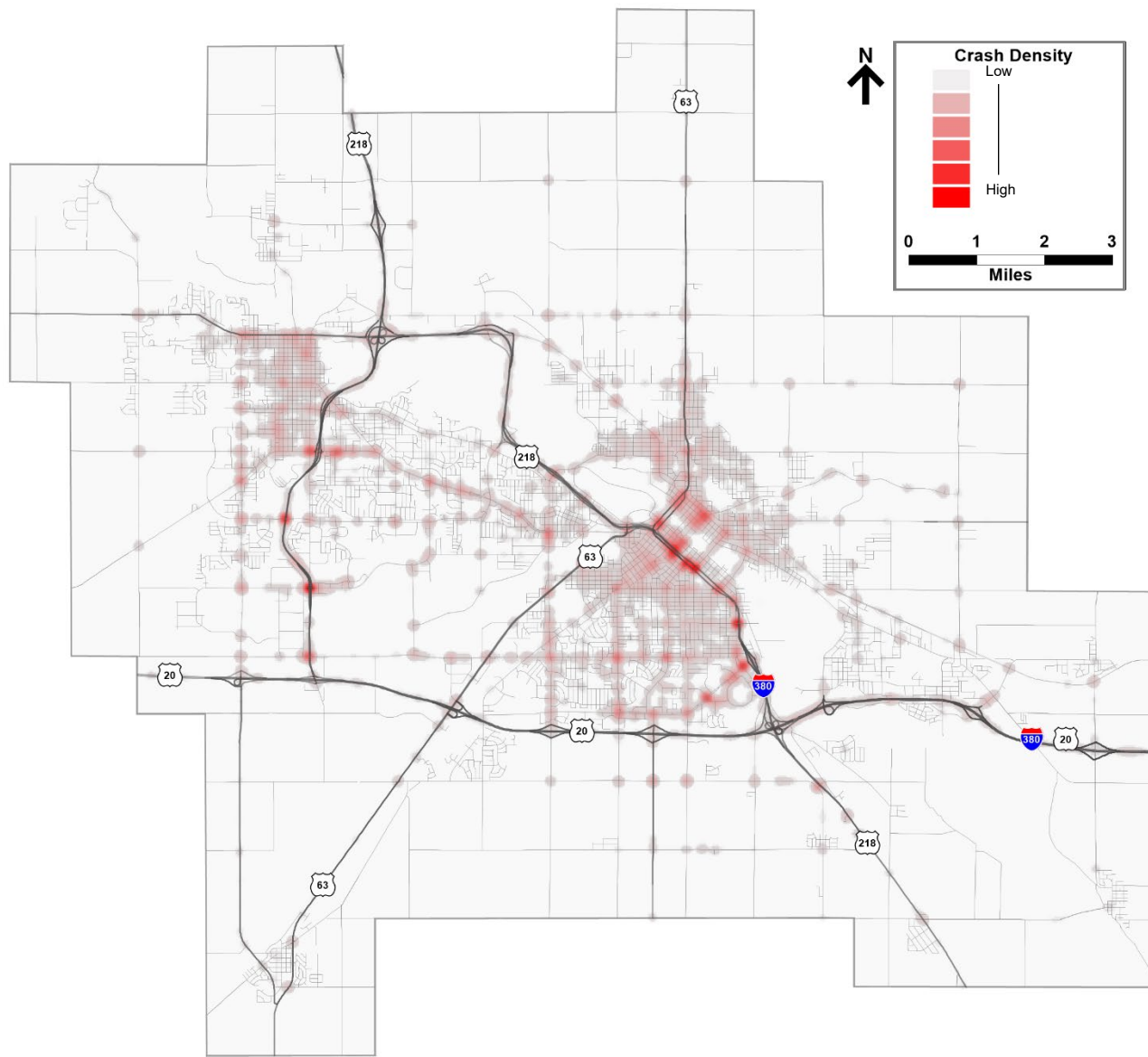
Desired trend Current trend



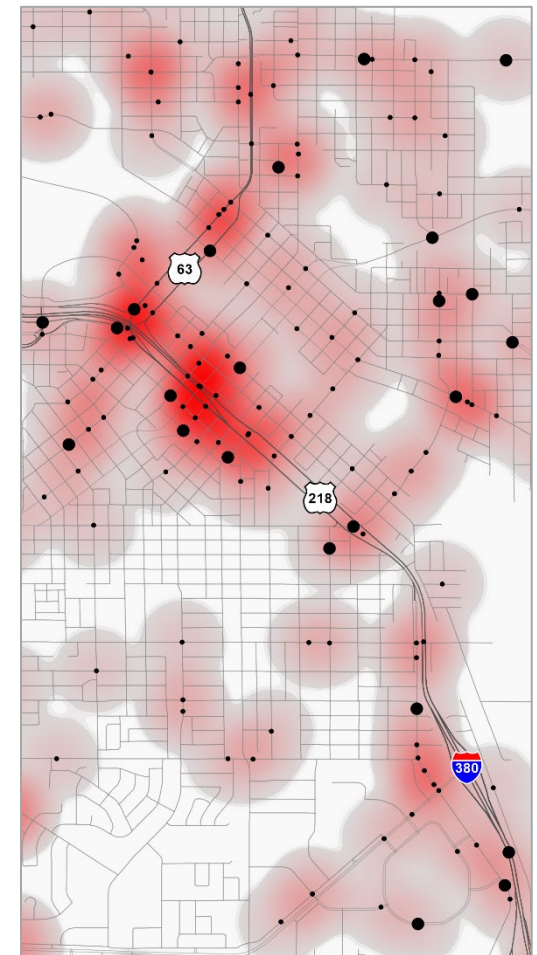
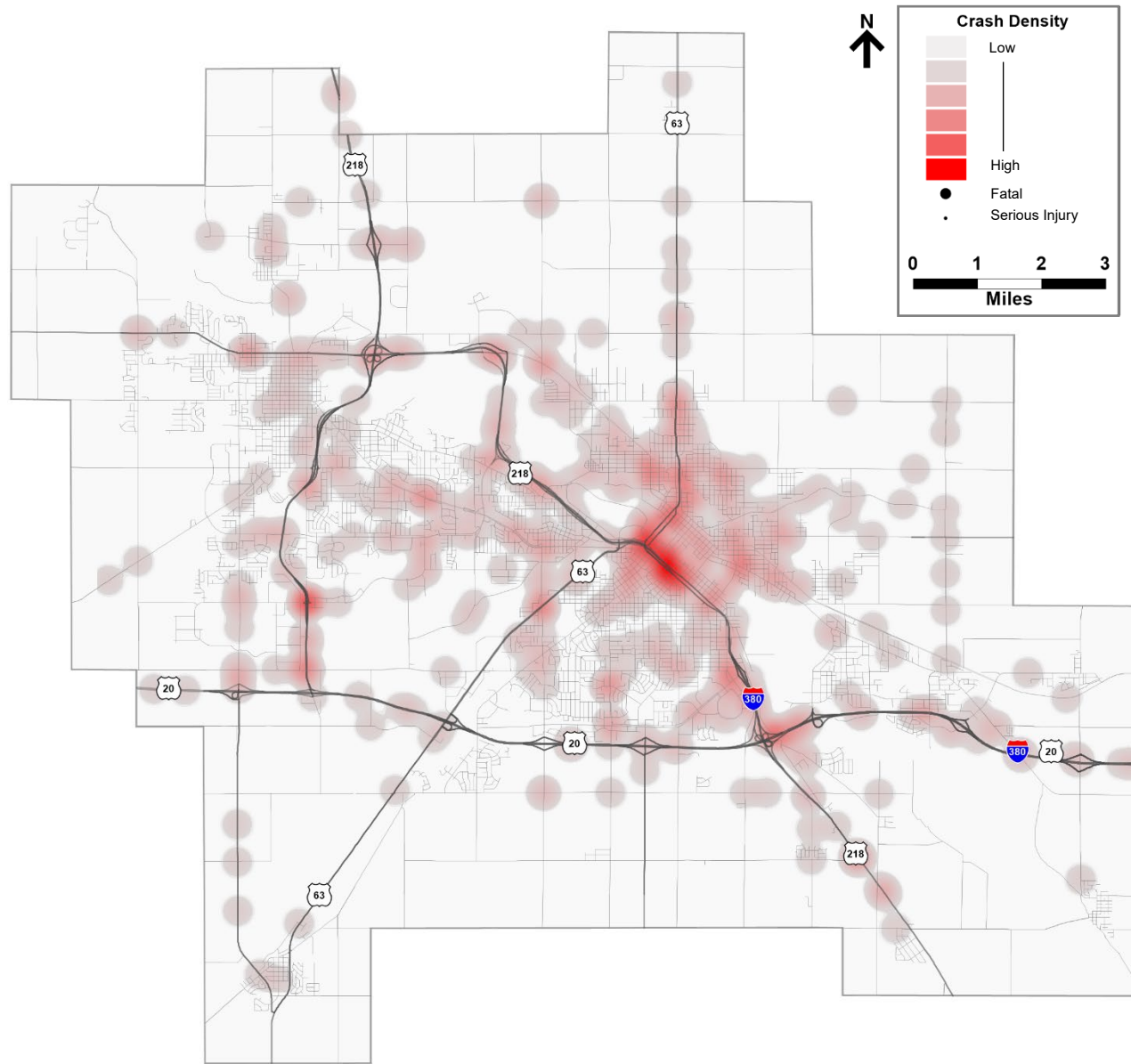
Another way to measure fatalities is to consider them within the context of total travel. There is a direct relationship between the amount of travel and the probability of a crash involving a fatal injury. This measure tracks the 5-year average for the rate of fatalities per 100 million vehicle miles traveled (VMT).

To calculate the fatality rate, the annual number of fatalities is multiplied by 100 million, and the result is divided by the annual vehicle miles traveled. VMT was calculated using VMT by City/System data from the Iowa DOT. The fatality rate has been trending upward for the past five years and could exceed the state target in the coming years.

Crash Density (all crashes 2010-2020)



Crash Density (fatalities and serious injuries 2010-2020)



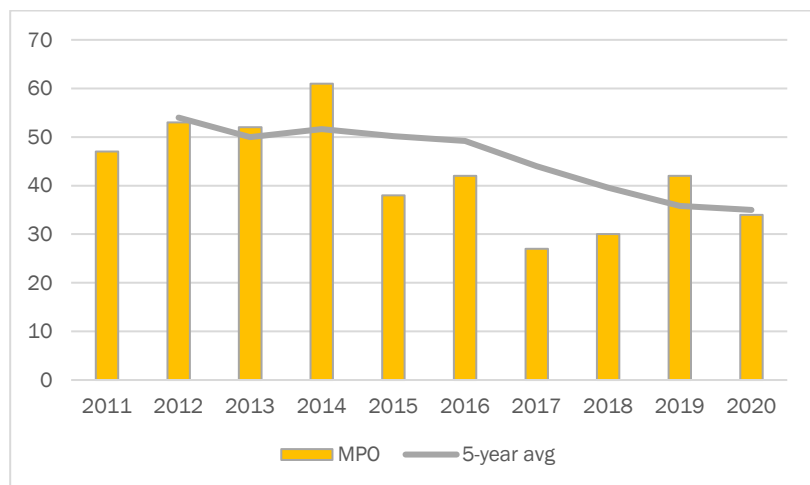
Serious Injuries



Number of serious injuries

Desired trend

Current trend

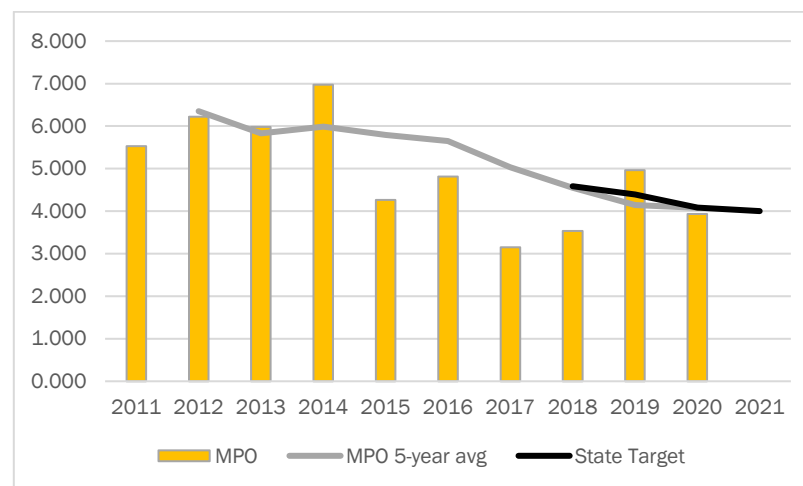


This measure tracks the number and 5-year average of serious injuries. A serious injury (or major injury) is defined as any injury, other than a fatality, which prevents the injured person from walking, driving, or normally continuing the activities the person was capable of before the injury occurred. The 5-year moving average smooths out annual variations to observe trends over time. Over the past six years, the number of serious injuries in the MPO has been trending downward.

Serious injury rate per 100 million VMT

Desired trend

Current trend



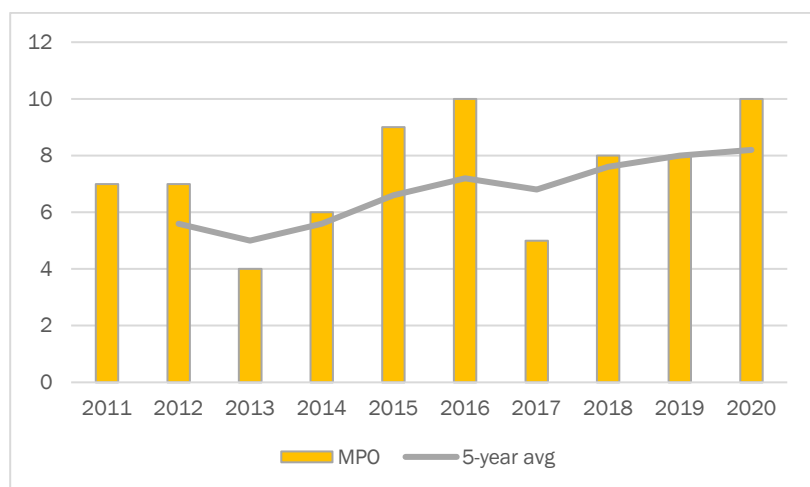
Like fatalities, there is a direct relationship between the amount of travel and the probability of a crash involving a serious injury. This measure tracks the 5-year average for the rate of serious injuries per 100 million VMT. The serious injury rate has trended downward for the past six years, and the 5-year average has been below the State target since 2018.

Non-motorized Safety



Non-motorized fatalities and serious injuries

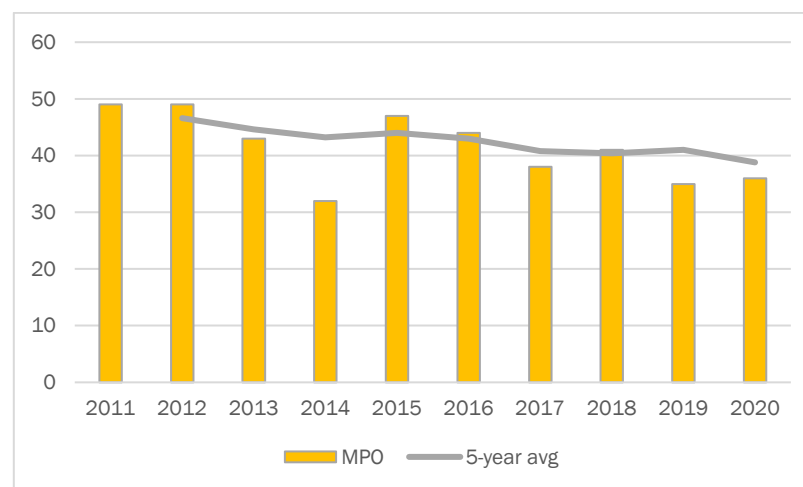
Desired trend Current trend



This measure tracks the number and 5-year average of non-motorized fatalities and serious injuries. Many non-motorized accidents go unreported each year. Nonetheless, non-motorized fatalities and serious injuries have been trending upward since 2013.

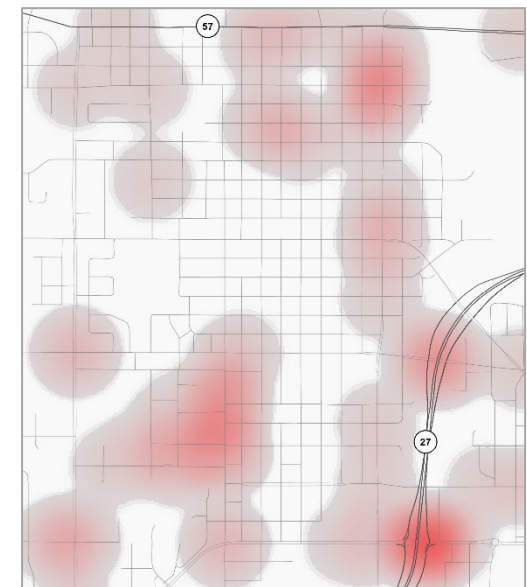
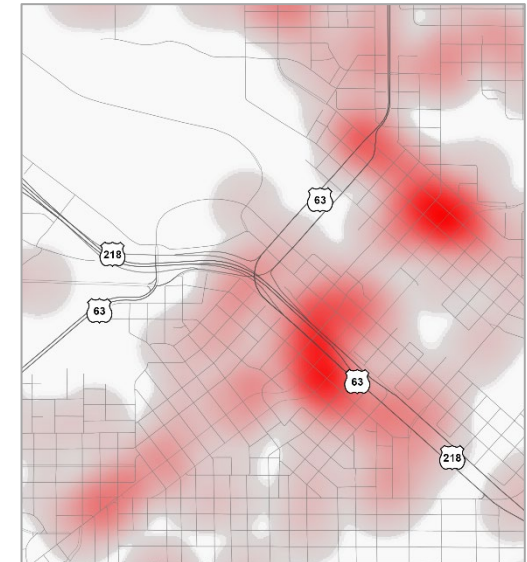
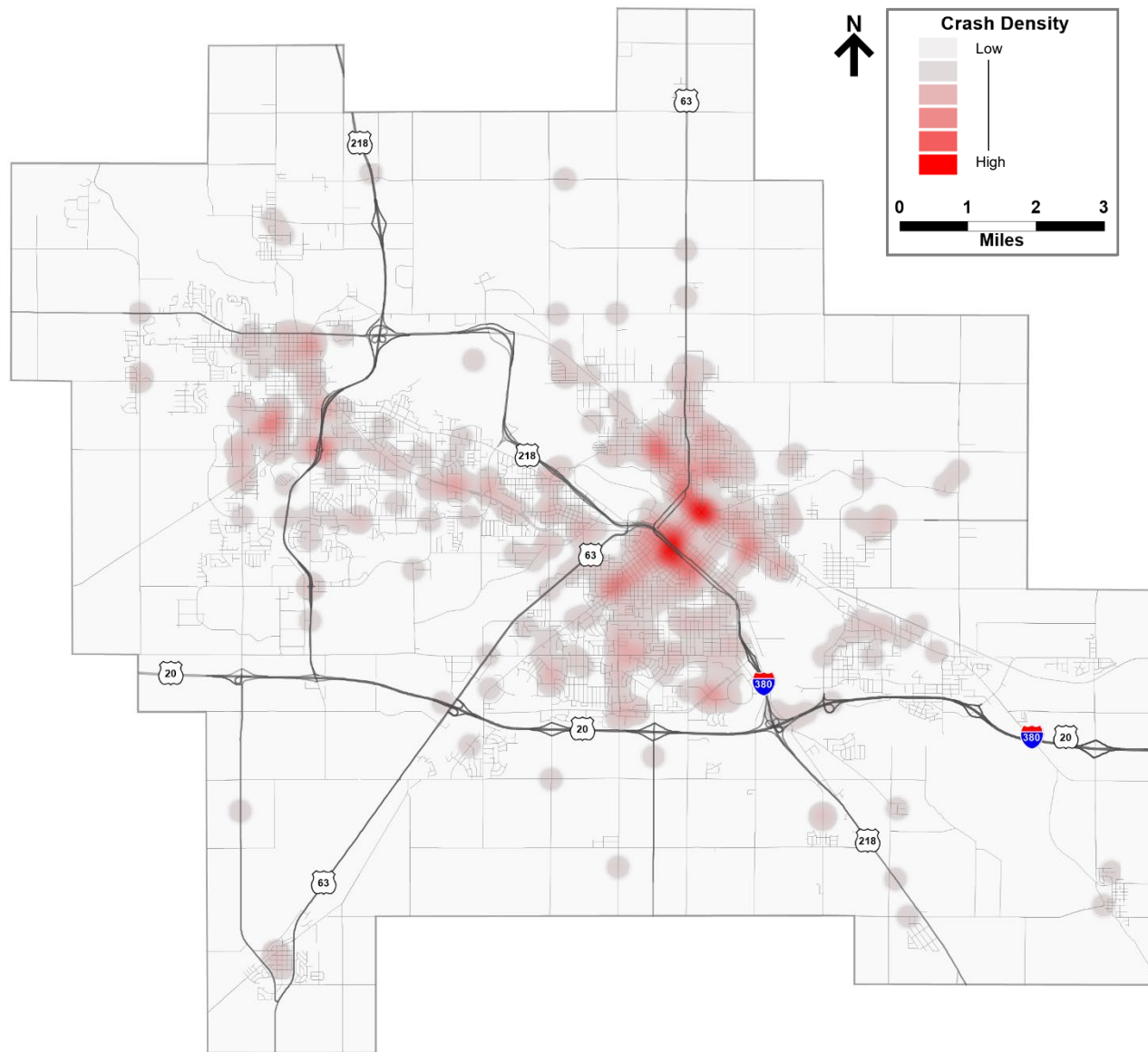
Traffic accidents involving pedestrians and bicyclists

Desired trend Current trend

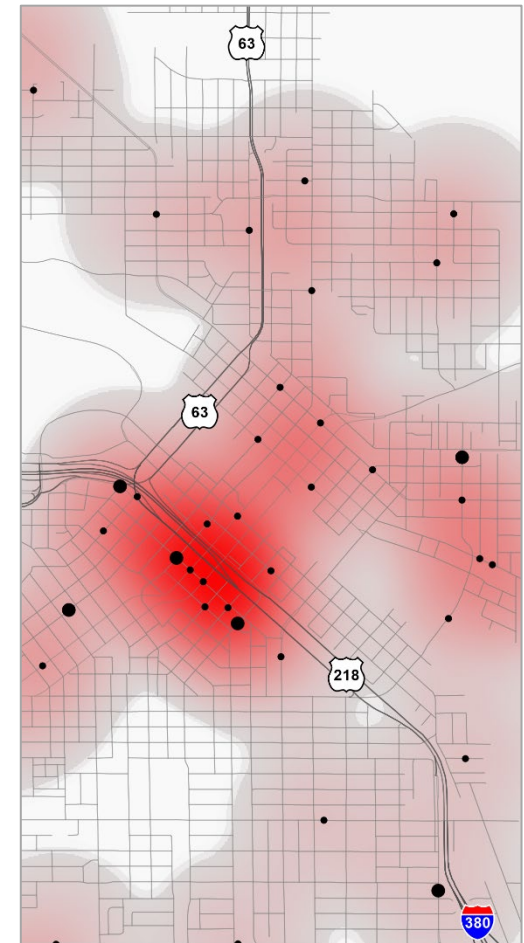
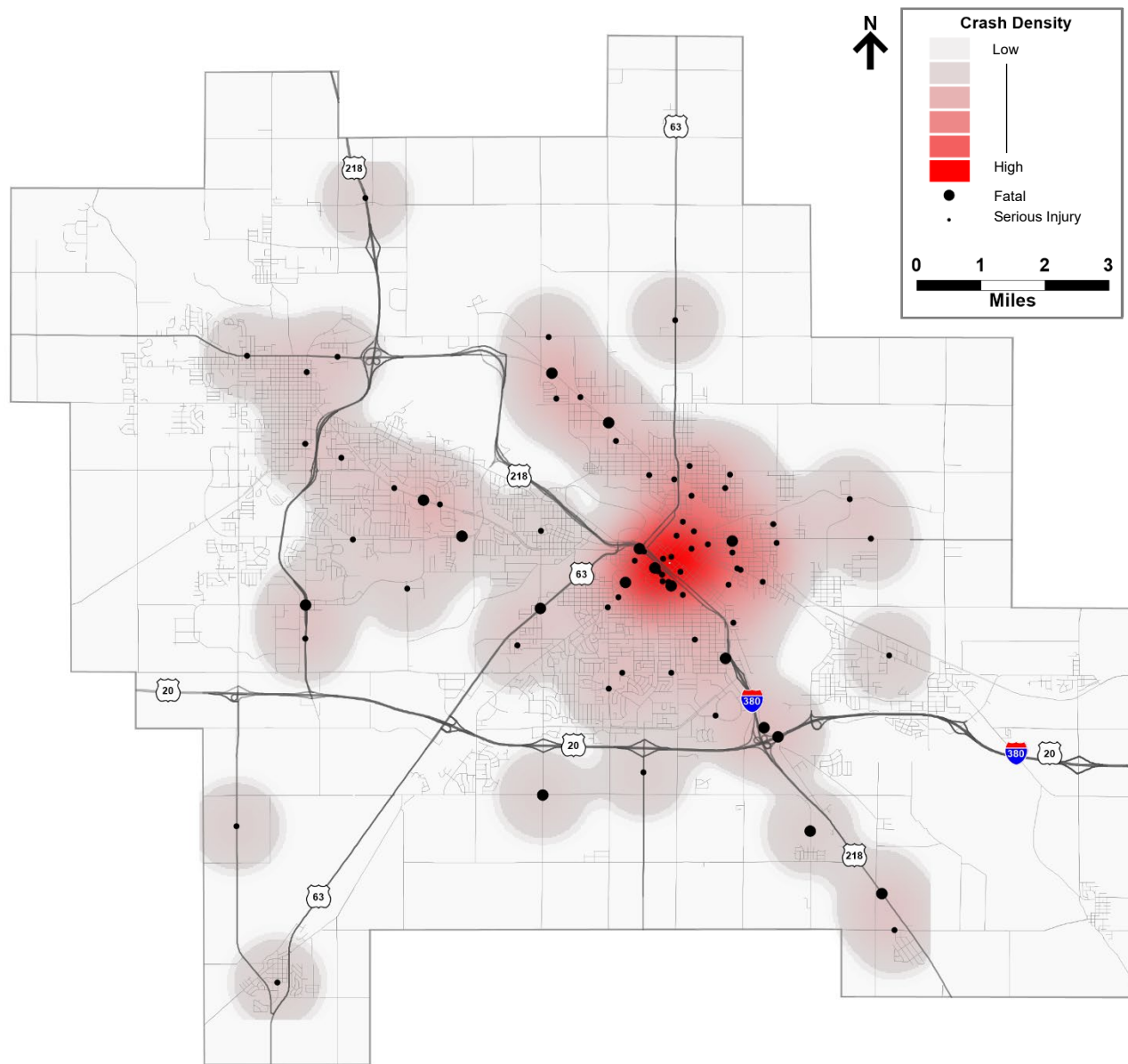


Another measure to track non-motorized safety is the number of traffic accidents involving pedestrians and bicyclists. This measure provides the total number and 5-year average. The total number of accidents has been trending downward since 2012.

Non-motorized Crash Density (all crashes 2010-2020)



Non-motorized Crash Density (fatalities and serious injuries 2010-2020)



Pavement Conditions (Interstate and non-Interstate NHS)



Percent of pavement in good condition

Desired trend

Current trend



Percent of pavement in poor condition

Desired trend

Current trend



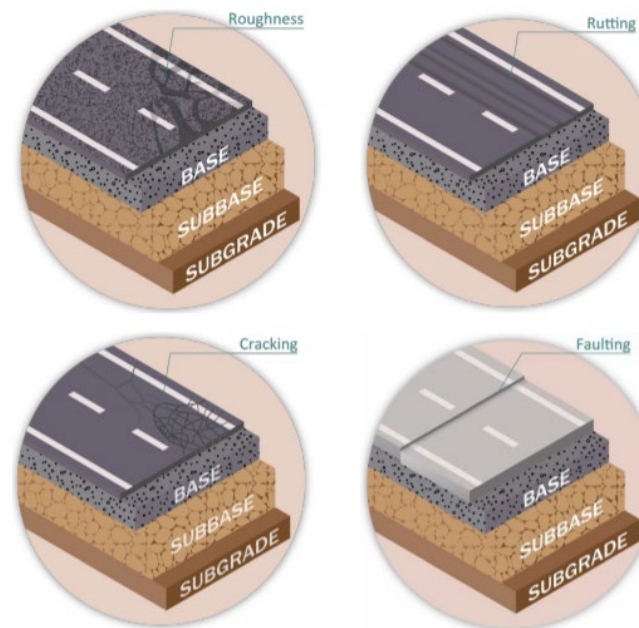
In 2018, FHWA established four performance measures for NHS pavement conditions, each of which is calculated based on data reported by the Iowa DOT to the Highway Performance Management System (HPMS). The following metrics are used to calculate the pavement condition performance measures:

- Pavement roughness is an indicator of discomfort experienced by road users traveling over the pavement and is measured using the International Roughness Index (IRI).
- Rutting is quantified for asphalt pavement by measuring the depth of ruts along the wheel path.
- Cracking is measured in terms of the percentage of cracked pavement surface.
- Faulting is quantified only for concrete pavements.

For each metric, FHWA has established thresholds for good, fair, and poor conditions. Road sections are rated as being in good condition if all of the metrics are rated as good, and poor when two or more are rated as poor. All other combinations are rated as fair.

Metric	Good	Fair	Poor
IRI (inches/mile)	<95	95-170	>170
Rutting (inches)	<0.20	0.20-0.40	>0.40
Cracking (%)			
- Asphalt	<5	5-20	>20
- Jointed Concrete	<5	5-15	>15
- Continuously Reinforced Concrete	<5	5-10	>10
Faulting (inches)	<0.10	0.10-0.15	>0.15

Iowa DOT Strategic Performance Division provided MPO-level baseline conditions data for the 2045 Long-Range Transportation Plan. However, 2019 data does not include Interstate 380, and there are substantial data gaps for IA Hwy 58 and US 63. Furthermore, the methodology for calculating the non-Interstate NHS pavement performance measure is set to change in 2022, limiting data comparison capabilities. Accordingly, MPO staff recommend using IRI data to analyze all state-owned pavement conditions for the purposes of ongoing MPO performance tracking. The MPO continues to support Iowa DOT statewide targets for these measures



Pavement Conditions (state owned)



Percent of pavement in good condition

Desired trend Current trend

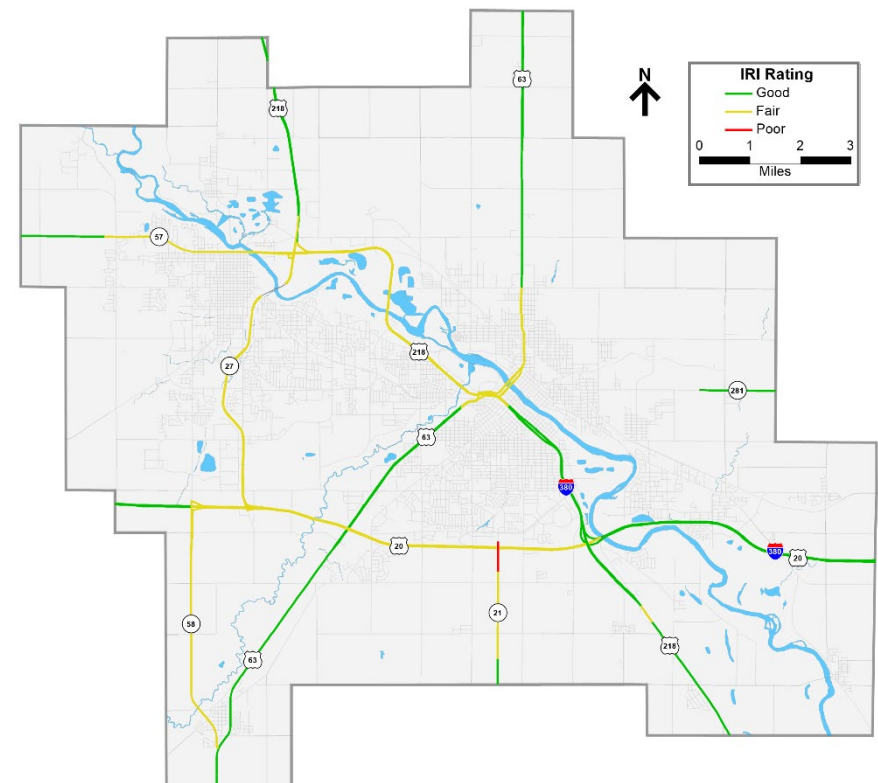


IRI	2018 (miles)	2018 (%)	2019 (miles)	2019 (%)	+/- (%)
Good	62.2	47.4	60.4	49.0	1.6
Fair	65.2	49.7	62.1	50.5	0.8
Poor	3.8	2.9	0.6	0.5	-2.4
Total	131.2		123.1		

One indicator of pavement condition is the smoothness of the ride. All states use the International Roughness Index (IRI) as a standard measurement of pavement smoothness. A continuous profile along the road is measured and analyzed to summarize qualities of pavement surface deviations that impact vehicle suspension movement. Reported in units of inches-per-mile, IRI describes how much total vertical movement a standard passenger vehicle's body would experience if driven over a 1-mile segment of the subject pavement at 50 mph.

Percent of pavement in poor condition

Desired trend Current trend



Pavement Conditions (city & county owned)



Percent of pavement in good condition

Desired trend Current trend



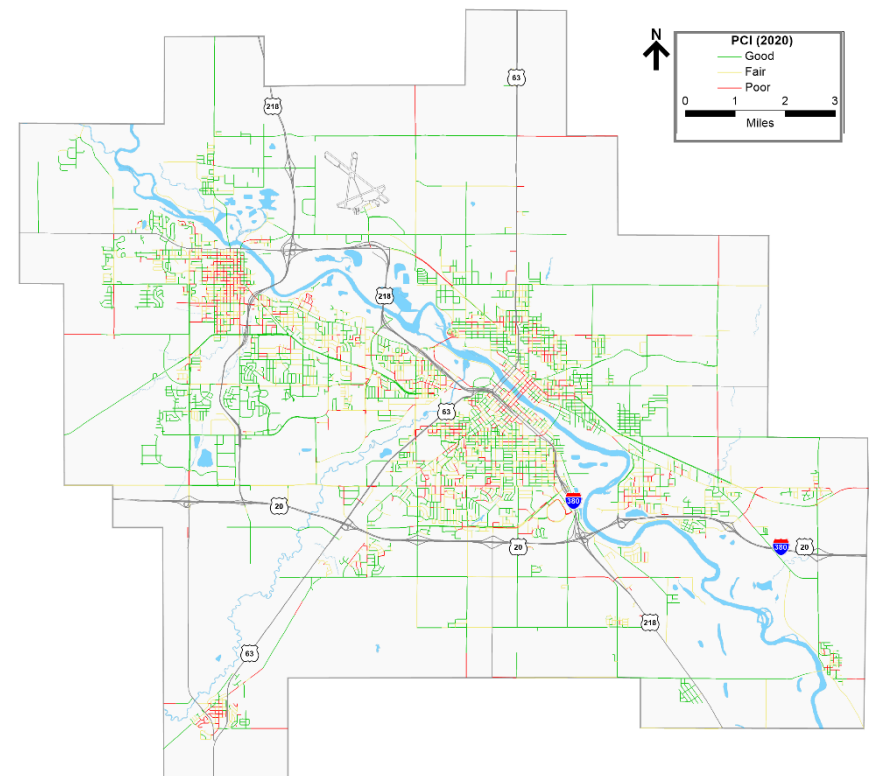
Rating	2018 (miles)	2018 (%)	2020 (miles)	2020 (%)	+/- (%)
Good	257	34.0	431	52.6	18.6
Fair	329	44.9	276	34.6	-10.3
Poor	159	21.0	104	12.8	-8.2
Total	745		810		

The condition of the street network is critical to the operating efficiency of the system. Local roadway conditions (non-NHS) within the metropolitan area are assessed based on the Pavement Condition Index (PCI) which is a numerical index between 0 and 100 used to indicate the general condition of a pavement. This method is based on a visual survey of the number and types of distresses in a pavement.

PCI data was available for the evaluation of 745 and 810 centerline miles of roads in 2018 and 2020. This excludes segments of University Avenue, Greenhill Road, Dubuque Road, Franklin Street, and Mulberry Street that are part of the National Highway System*. During this timeframe, roads in good condition increased by 18.6 percent, and roads in poor condition decreased by 8.2 percent.

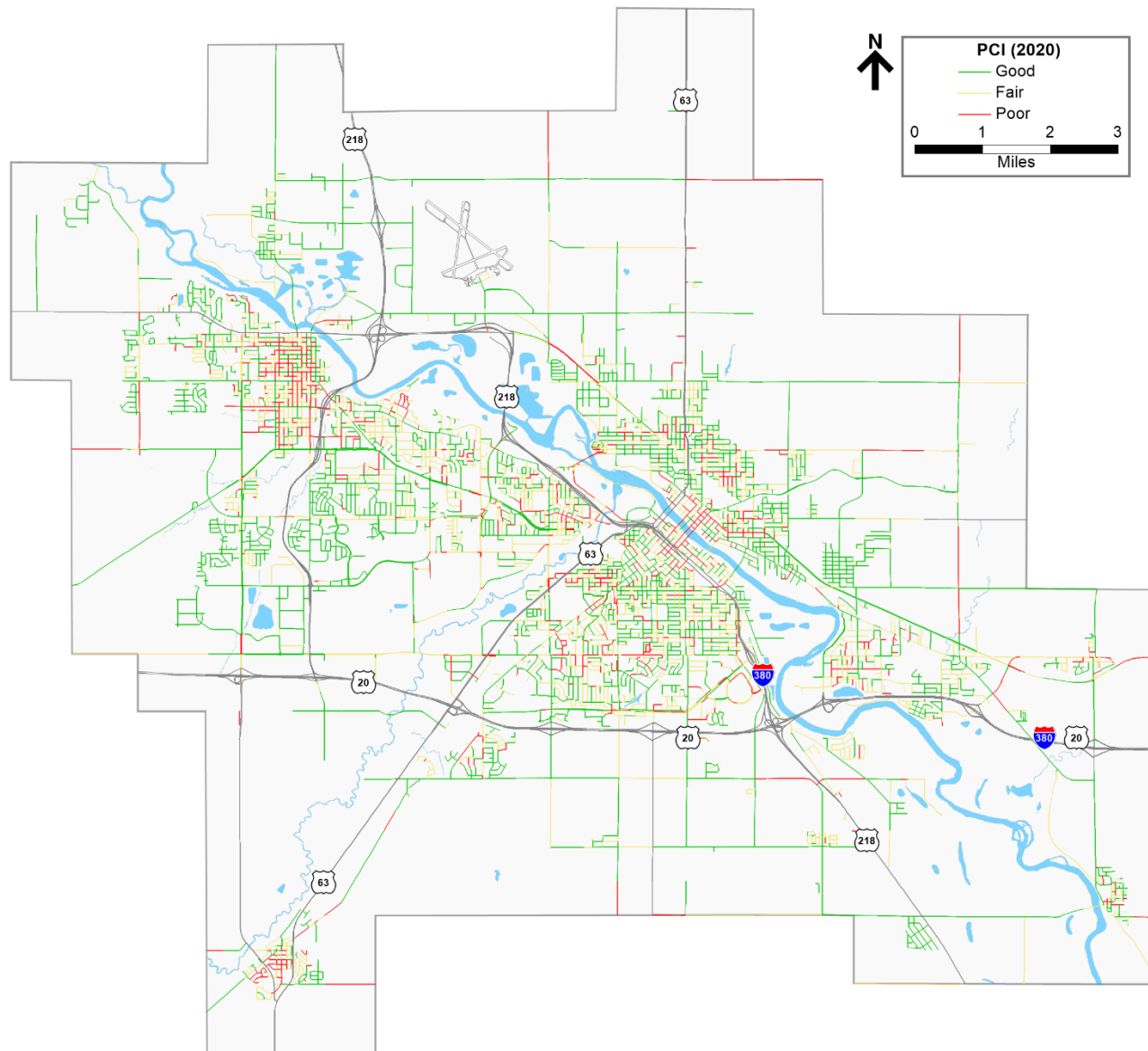
Percent of pavement in poor condition

Desired trend Current trend

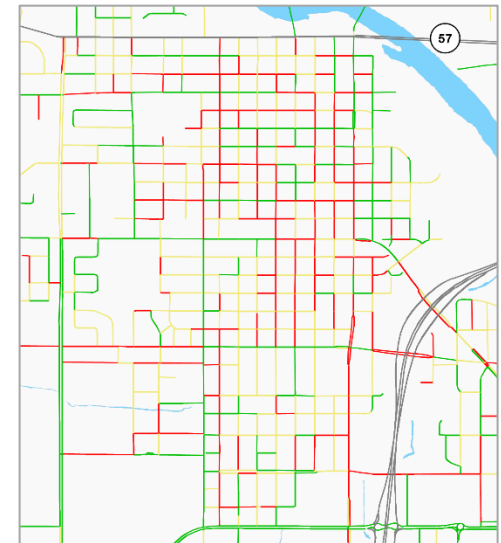


*www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/iowa/index.cfm

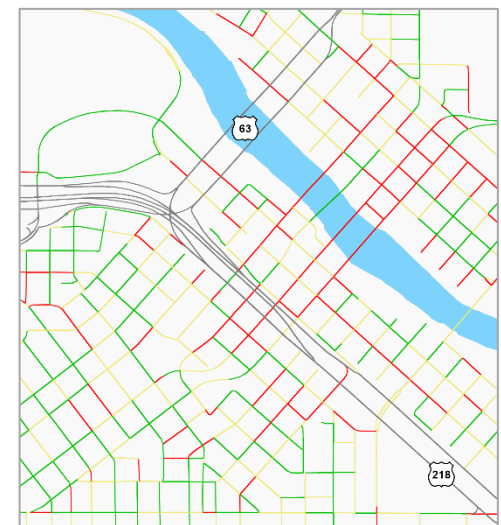
Pavement Conditions (city & county owned)



Downtown Cedar Falls



Downtown Waterloo



Bridge Conditions (NHS)



Percent of bridges in good condition

Desired trend Current trend



NHS Bridges	2018 (Deck Area SF)	2018 (%)	2020 (Deck Area SF)	2020 (%)	+/- (%)
Good	1,286,713	57.8	1,289,301	57.1	-0.7
Fair	939,074	42.2	969,301	42.9	0.7
Poor	0	0	0	0	--
Total	2,225,787		2,258,602		

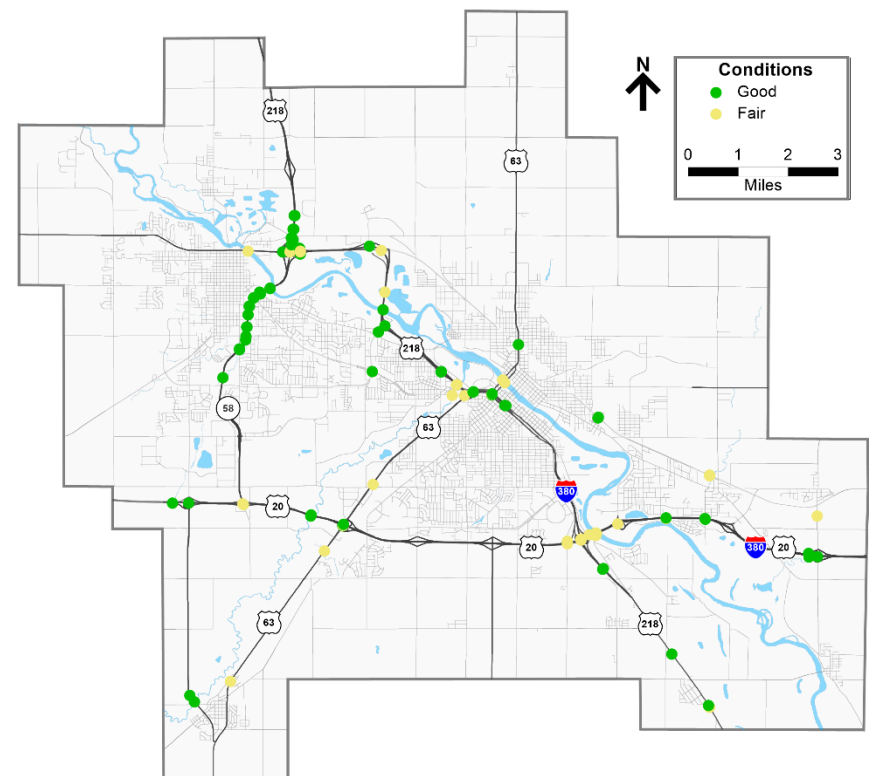
The Federal Highway Administration (FHWA) requires states and MPOs to track the percentage of bridges on the NHS that are in good and poor condition. Each bridge is rated on the condition of its deck, superstructure, and substructure, and its overall condition is determined by the lowest of these scores. The percentage of bridges in good, fair, or poor condition is based on the total deck area of the bridges and not the raw number of bridges in each category.

In the Black Hawk County metropolitan area, there are 102 bridges on the National Highway System. Of these, 65 percent are in good condition and 35 percent are in fair condition. Though the total deck area in good condition decreased since 2018, the amount was minimal (0.7 percent).

There are an additional 151 bridges in the metropolitan area that are not part of the NHS. Conditions of all bridges are addressed in the performance measures on the following pages.

Percent of bridges in poor condition

Desired trend Current trend



Conditions (all bridges)



Posted or closed bridges

Desired trend

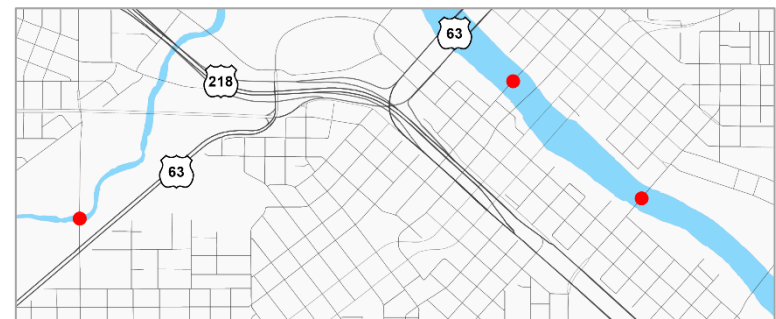
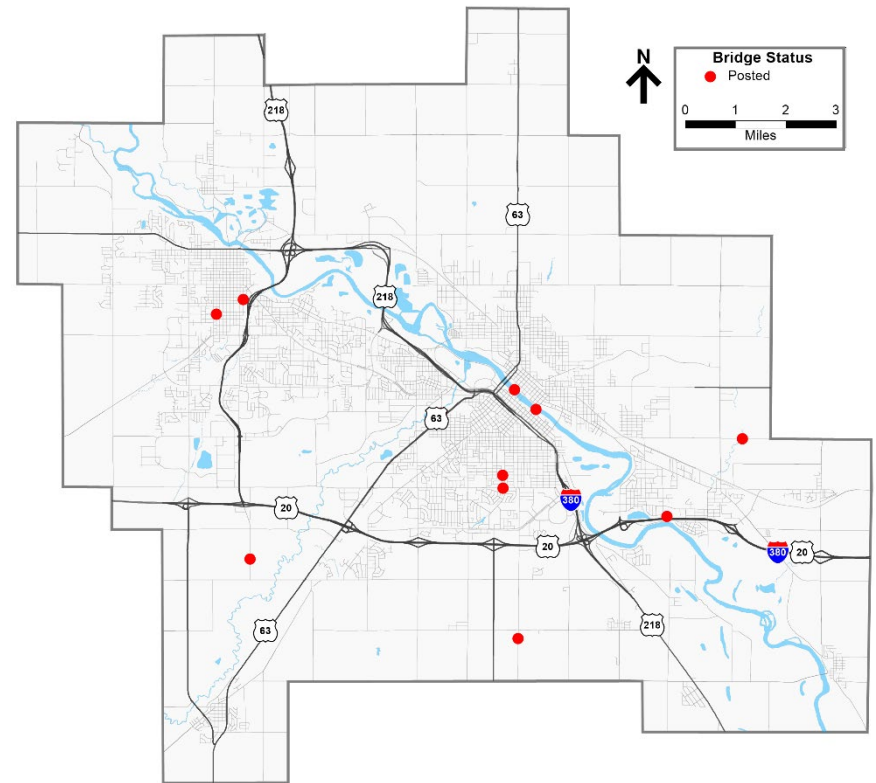
Current trend



Status	2018 (#)	2018 (%)	2020 (#)	2020 (%)	+/- (%)
Posted	13	5.2	11	4.3	-0.9
Closed	0	0	0	0	-
Open	236	94.8	242	95.7	0.9
Total	249		253		

Bridge performance can be measured by various conditions and the percentage of all bridges. This includes load capacity challenged restrictions. Posted bridges have weight restrictions to prohibit heavy loads, while closed bridges prohibit all traffic. Bridges may also be posted for other load-capacity restrictions including speed and number of vehicles permitted on the bridge. Posted and closed bridges can negatively impact people and goods movement as well as emergency response.

Since 2018, the total number of bridges posted has been reduced by two. The longest structures in the metropolitan area that remain posted with weight restrictions are the Park Avenue Bridge and 11th Street Bridge in Waterloo. Both structures are scheduled for reconstruction in 2021 and 2022.



Conditions (all bridges)



Structurally deficient bridges

Desired trend

Current trend

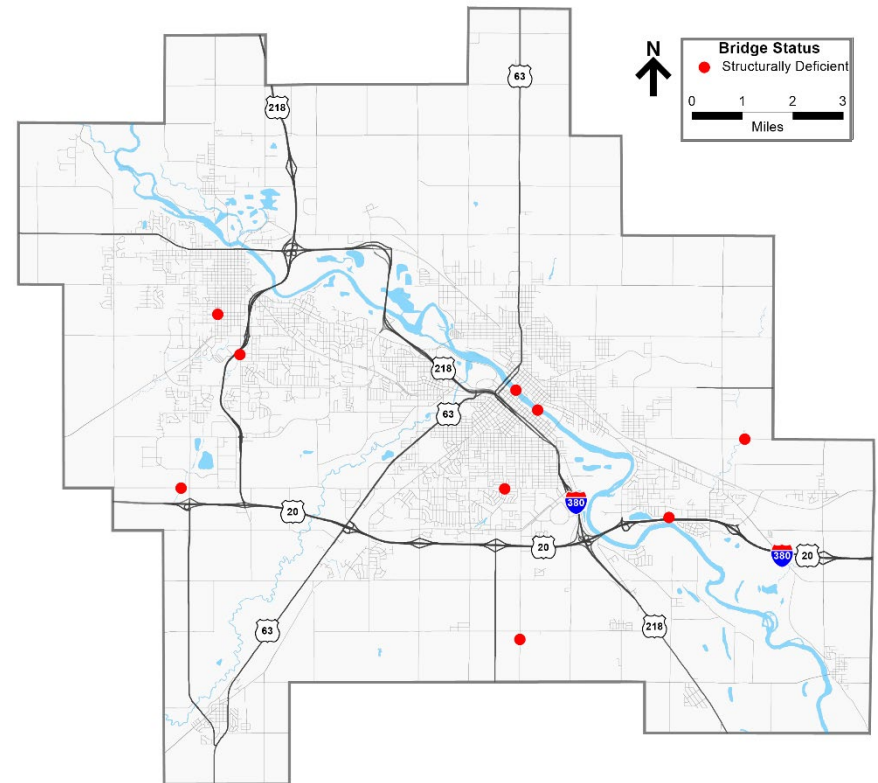


Status	2018 (#)	2018 (%)	2020 (#)	2020 (%)	+/- (%)
Structurally Deficient	12	4.8	9	3.6	-1.2
Efficient	237	95.2	244	96.4	1.2
Total	249		253		

Structurally deficient bridges are structures unable to carry vehicle loads or tolerate the speeds that would normally be expected for that bridge in its designated system. Structural deficiencies are characterized by deteriorated conditions of significant bridge elements and potentially reduced load-carrying capacity. This may include spalled or cracked concrete, the bridge deck, the support structure, or the entire bridge itself.

A “structurally deficient” designation does not imply that a bridge is unsafe. However, such bridges typically require significant maintenance and repair to remain in service and would eventually require major rehabilitation or replacement to address the underlying deficiency. To remain in service, structurally deficient bridges are often posted with weight limits restricting the gross weight of vehicles using the bridge to less than the maximum weight typically allowed by statute.

Since 2018, the total number of structurally deficient bridges has been reduced by three. The Park Avenue Bridge and 11th Street Bridge in Waterloo are both classified as structurally deficient.



Conditions (all bridges)



Average bridge sufficiency rating

Desired trend Current trend

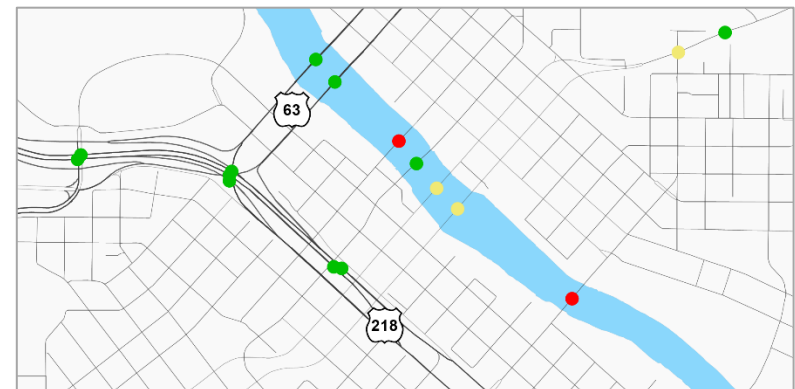
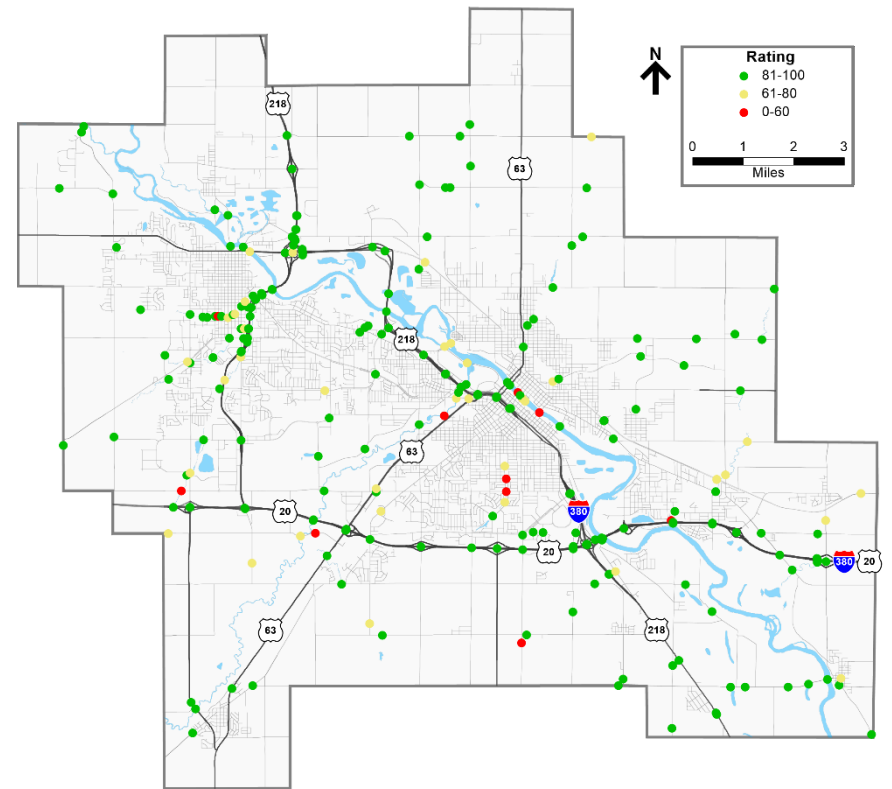


Rating	2018 (#)	2018 (%)	2020 (#)	2020 (%)	+/- (%)
81-100 (Good)	203	81.5	206	81.4	-0.1
61-80 (Fair)	33	13.3	37	14.6	1.3
0-60 (Poor)	13	5.2	10	4.0	-1.2
Total	249		253		

The sufficiency rating formula is a method of evaluating a bridge's sufficiency to remain in service based on a combination of several factors. The result of the formula is a percentage in which 100 percent represents an entirely sufficient bridge and zero percent represents an entirely insufficient or deficient bridge. Factors may include inspection results of the structural condition of the bridge, traffic volumes, number of lanes, road widths, clearances, and importance for national security and public use.

The sufficiency rating does not necessarily indicate a bridge's ability to carry traffic loads or a potential for collapse. Conversely, it helps determine which bridges may need repair or replacement. Bridges must have a rating of 60 or below to qualify for federal replacement funds, and 80 or below to qualify for federal rehabilitation funds.

From 2018 to 2020, the average bridge sufficiency rating increased from 88.3 percent to 89.1 percent. However, the number of bridges that qualify for federal rehabilitation funds (61-80 rating) increased four.



Efficiency (travel reliability)



Percent of person-miles traveled that are reliable (Interstate)

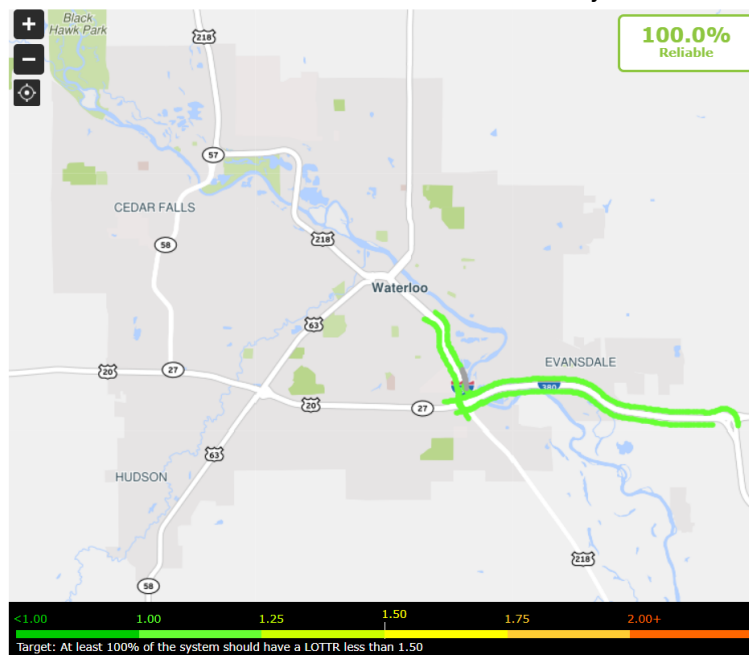
Desired trend



Current trend



2020 Interstate Travel Time Reliability



Calculated using 97.66% of miles in Black Hawk Metropolitan Area Transportation Policy Board

Year's Performance	
2017	100.0%
2018	100.0%
2019	100.0%
2020	100.0%

There are three national performance measures for travel time reliability:

- Interstate Travel Time Reliability
- Non-Interstate National Highway System (NHS) Travel Time Reliability
- Truck Travel Time Reliability (TTTR) Index for the Interstate

A formal definition for travel time reliability is the consistency or predictability in travel times, as measured from day to day, and /or across different times of the day. Travel time reliability is significant to many transportation system users, whether vehicle drivers, transit riders, or freight shippers.

For these reasons, the first and second measures assess the percent of the person-miles traveled that are reliable. This measure better accounts for the movement of people by factoring in the number of people in a vehicle using occupancy factors.

The performance measure related to freight movement on the Interstate uses truck speed and travel time reliability data to calculate the TTTR Index. This measure can be used to identify and quantify major freight truck bottleneck locations.

Travel time data needed to calculate these measures is obtained from the National Performance Management Research Data Set (NPMRDS). This national data set is available to State DOTs and MPOs to use for performance management activities. NPMRDS contains field-observed travel time and speed data collected anonymously from a fleet of probe vehicles (cars and trucks) equipped with mobile devices.

<https://ops.fhwa.dot.gov/publications/fhwahop20028/index.htm>

Efficiency (travel reliability)



Percent of person-miles traveled that are reliable (non-Interstate NHS)

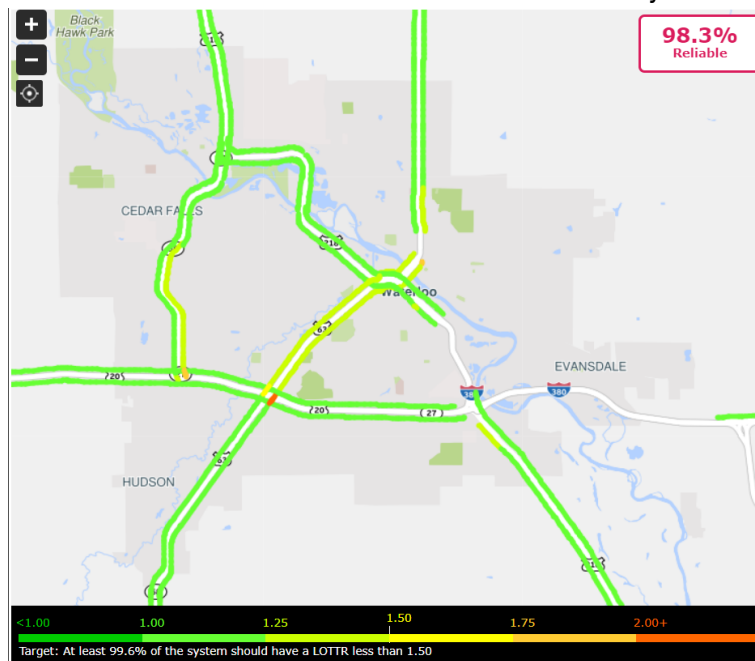
Desired trend



Current trend



2020 Non-Interstate NHS Travel Time Reliability



Year's Performance

2017	99.6%
2018	99.7%
2019	98.8%
2020	98.3%

Truck Travel Time Reliability (TTTR)

Index

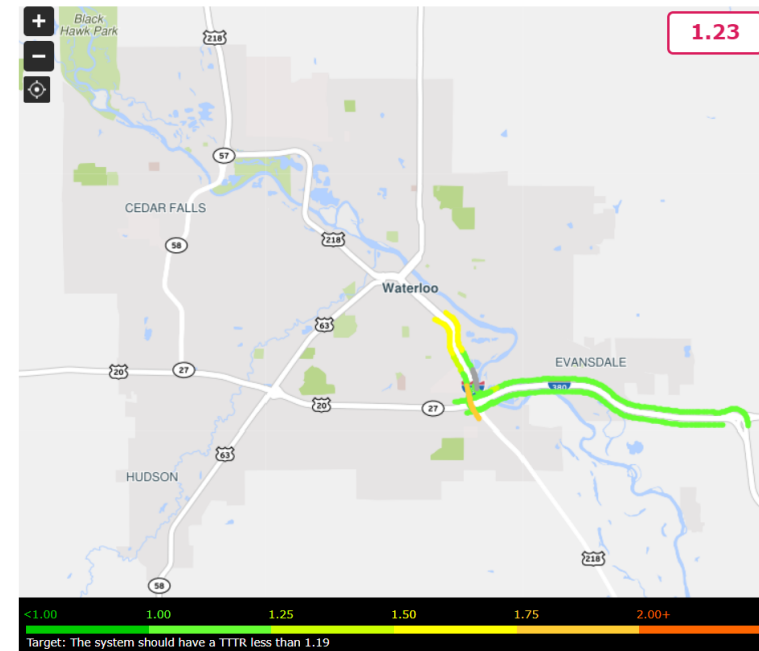
Desired trend



Current trend



2020 Truck Travel Time Reliability



Year's Performance

2017	1.18
2018	1.24
2019	1.29
2020	1.23

Efficiency (VHT and VMT)



TDM base year VHT

Desired trend

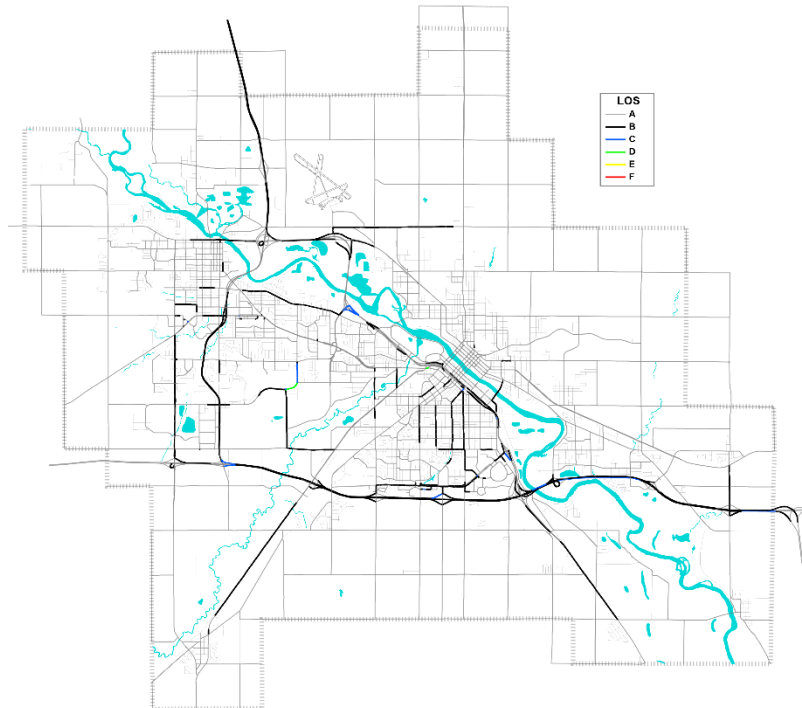


Current trend



The travel demand model (TDM) for the 2045 Long-Range Transportation Plan was used to estimate vehicle hours traveled in the base year 2014 (83,582). The TDM cannot provide actual counts and therefore has limited value for performance measure setting and analysis midway through the life of a Plan. Accordingly, MPO staff recommend using annual vehicle miles traveled (VMT) per capita in place of VHT for future plans.

Level of Service – Base Year

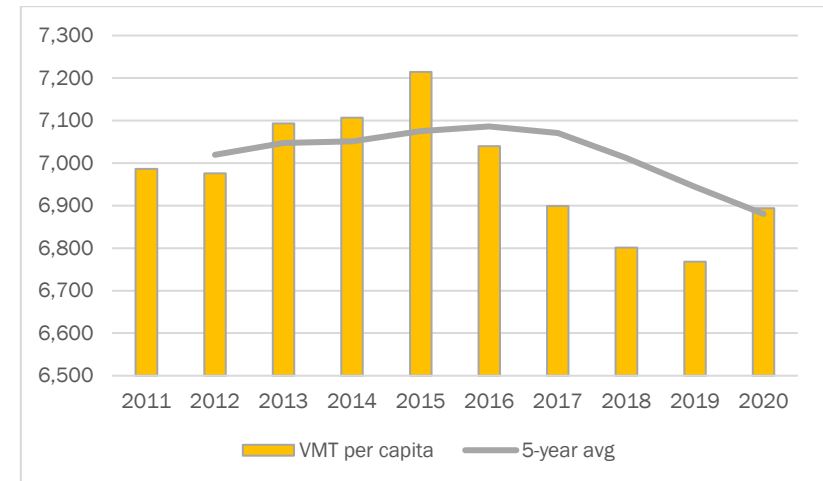


Annual VMT per capita

Desired trend



Current trend



Vehicle miles traveled (VMT) per capita is a measure of how much an individual or household drives by a private vehicle. VMT per capita is calculated as the total annual miles of vehicle travel divided by the total population. Reducing annual VMT per capita can improve air quality and the overall health of the population, and reduced injuries and deaths from vehicle crashes. The VMT per capita has been trending downward since 2015, though there was an increase in 2020. With reduced driving as a direct result of the COVID-19 pandemic, it is likely that the VMT per capita will remain flat for the immediate future.

Multimodal Accommodations



Miles of on-road bicycle accommodations

Desired trend



Current trend



Facility Type	Miles (2018)	New Miles	Planned (2045 LRTP)
Bike lanes	3.2	0	55.2
Paved shoulders	7.4	0	6.6
Shared lane markings	5.0	2.4	26.3
Signed on-road bike routes	4.3	0	46.7
Total	19.9	2.4	134.8

There have been minimal additions to the on-road bikeway network. One of the goals of the 2045 LRTP is to provide a high degree of multimodal accessibility and mobility. To help accomplish this, it is essential to expand the on-road bicycle network as identified in the MPO Bikeway Plan.

Though not included in this performance measure, several paved trails have been completed or are under construction. Projects include University Ave, US 63 from Conger St to Franklin St, Shaulis Rd Trail from Isle of Capri Blvd to US 218, Shaulis Rd Trail from the Cedar Valley Nature Trail to Cedar Terrace Dr, Union Rd Trail from W 12th St to W 27th St, and Center St Trail.

The National Association of City Transportation Officials (NACTO) notes that shared lane markings are not a facility type and should not be considered a substitute for bike lanes or other separation treatments where these types of facilities are otherwise warranted or space permits. Accordingly, MPO staff recommend removing shared lane markings from this performance measure

Miles of public sidewalks and crosswalks in MPO Pedestrian Master Plan focus areas

Desired trend



Current trend



Sidewalks and crosswalks are the foundation of the pedestrian transportation network. These facilities make walking safer and more comfortable and form critical links between transit stops and destinations. Pedestrian facility mileage in the area continues to increase, though primarily with new developments and subdivisions. Jurisdictions are encouraged to complete sidewalk infill and regionally-significant projects to expand and improve the pedestrian network.

Collecting sidewalk data is time consuming and labor intensive. Furthermore, the MPO Pedestrian Master Plan is still in development and has not been adopted by the Policy Board. Accordingly, MPO staff recommend removing this performance measure.



Multimodal access

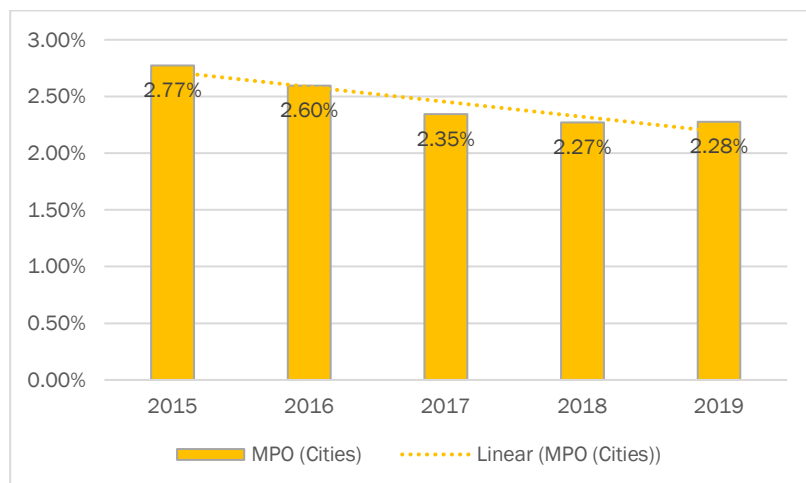


Percent of workers who walk to work

Desired trend



Current trend



Source: U.S. Census, 2015-2019 American Community Survey 5-year Estimates

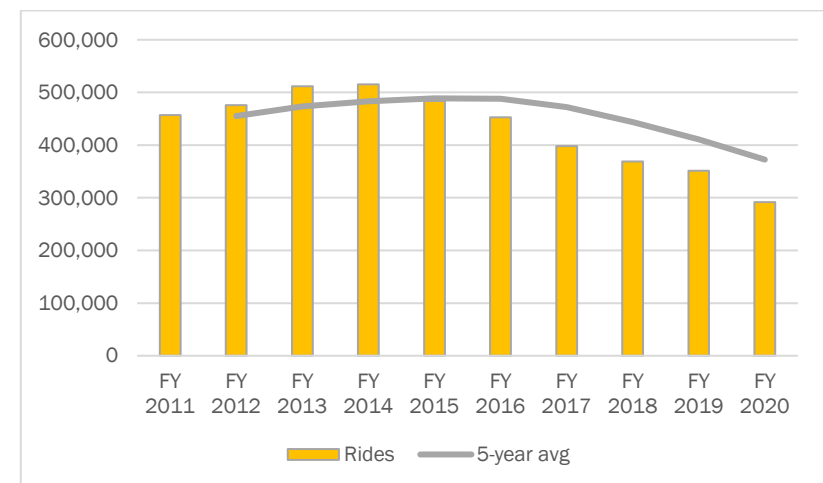
One of the goals of the 2045 L RTP is to improve transportation choices by prioritizing complete streets, improving transit service, and building out bicycle and pedestrian networks. This performance measure tracks the percent of workers who commute to work by walking using U.S. Census American Community Survey (ACS) 5-year estimates. Since 2015, this performance measure has trended downward, though the change has been marginal.

Number of MET fixed route rides

Desired trend



Current trend



MET Transit ridership peaked in 2014 and has declined each subsequent year. Between fiscal years 2014 and 2020, ridership decreased by 43 percent. The impacts of the COVID-19 pandemic to ridership are readily apparent. From FY 2019 to FY 2020, ridership decreased by 17 percent.

The primary focus of MET Transit is to maintain existing service levels and then expand to meet additional needs of the MPO when possible. MPO staff are working with MET Transit on the redesign of the fixed-route bus network in Waterloo and Cedar Falls to improve service while maximizing use of available funds. Public input meetings and full implementation are planned for 2021.

Transit Fleet Conditions

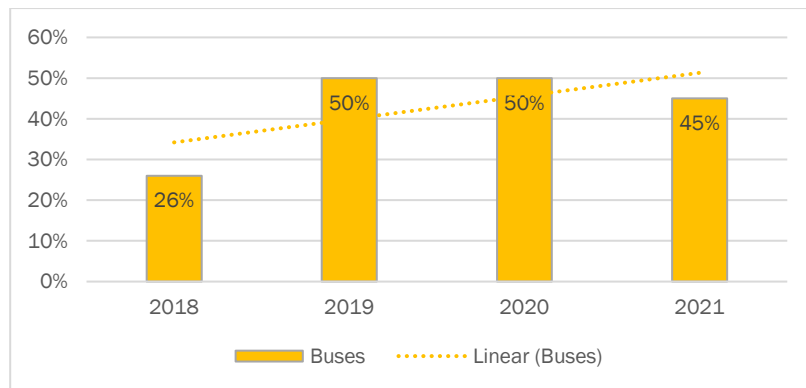


Percent of revenue vehicles met or exceeded ULB (buses)

Desired trend



Current trend



Buses cost more to operate and repair near the end of their useful life. Nevertheless, replacing buses is expensive and not always possible due to funding constraints. The useful life benchmark (ULB) for heavy duty buses less than 35 feet in length is 300,000 miles or 10 years, and for buses 35 feet in length or more is 350,000 miles or 12 years.

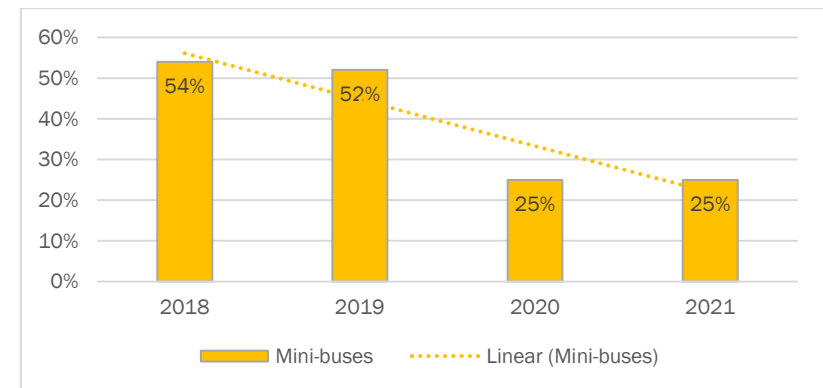
Between 2018 and 2021, the number of buses that have met or exceeded ULB has increased by 19 percent.

Percent of revenue vehicles met or exceeded ULB (mini-buses)

Desired trend



Current trend



The ULB for light duty buses is 120,000 miles or 4 years. Since 2020, MET Transit has reduced the number of mini-buses that have met or exceeded ULB by 21 percent.

Overall, MET Transit's revenue fleet is in relatively good condition. However, many vehicles purchased as part of the stimulus package enacted in 2009 will require replacement in the coming years. A long-term funding solution would provide transit agencies long-term assurance that they will have enough vehicles to continue operating at their current level.

Transit Fleet Conditions

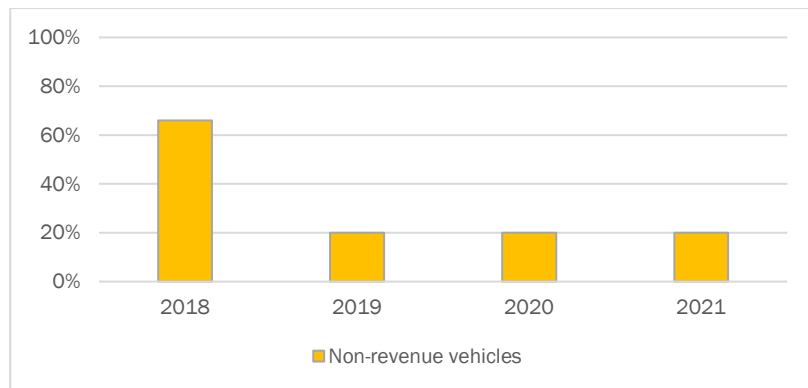


Percent of non-revenue vehicles met or exceeded ULB

Desired trend



Current trend



The ULB for non-revenue vehicles is 100,000 miles or 4 years. Most of these vehicles are used for staff transport, out-of-town trips, short in-town trips, and plowing the parking lot and central transfer. MET Transit anticipates replacing non-revenue vehicles only when needed which may be beyond the ULB benchmark. The non-revenue fleet includes 3 sedans, 1 van, and 1 service truck.

Transit Facilities



Percent of facilities with a condition rating < 3.0

Desired trend



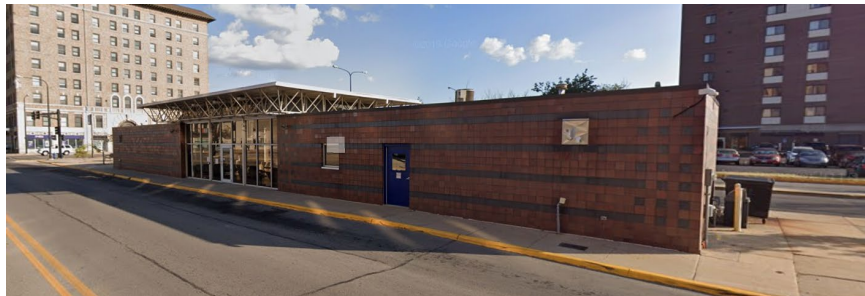
Current trend



Facility Type	2018	2019	2020
Administrative/Maintenance	0%	0%	0%
Central Transfer Station	0%	0%	0%
Total	0%	0%	0%

The Federal Transit Administration (FTA) requires transit agencies to inventory and assess the condition of all assets for which they have direct capital responsibility. Facilities are assessed using the Transit Economic Requirements Model (TERM) scale which is a computer-based application to estimate transit capital investment needs over an extended time horizon.

The Administrative and Maintenance Facility was constructed in 1978, and Central Transfer Station was constructed in 1985. Since 2018, both facilities have been above 3.0 on the TERM scale which is the federal performance measurement.



Bus shelters

Desired trend



Current trend



Bus shelters are basic infrastructure and an essential part of a successful public transit system. Bus shelters provide a place to sit, protection from weather, and a feeling of safety and security. A well-designed, comfortable shelter can make waiting for a bus a pleasant experience.

In 2018, there were a total of 6 bus shelters: 4 in Cedar Falls, and 2 in Waterloo. To date, 3 new bus shelters have been added in Waterloo and 2 in Cedar Falls along University Avenue as part of the reconstruction and enhancement projects. In addition, two existing shelters at Falls Avenue in Waterloo were replaced.



Goal	Objective	Performance Measurement	2018 MPO Baseline Condition Data	Desired Trend	2016-2020 Data	Current Trend
Increase the safety of the transportation system	1.1) Reduce the number of traffic fatalities	¹ Number of fatalities	6.8 / year		7.6 / year	
	1.2) Reduce the rate of traffic fatalities	¹ Fatality rate (per 100 million VMT)	0.831		0.885	
	1.3) Reduce the number of traffic serious injuries	¹ Number of serious injuries	39.6 / year		35.0 / year	
	1.4) Reduce the rate of traffic serious injuries	¹ Serious injury rate (per 100 million VMT)	4.548		4.079	
	1.5) Reduce the number of non-motorized fatalities and serious injuries	¹ Non-motorized fatalities and serious injuries	6.8 / year		8.2 / year	
	1.6) Reduce the number of traffic accidents involving pedestrians and bicyclists	Crashes involving pedestrians and bicyclists	40.8 / year		38.8 / year	
Strategically preserve the existing infrastructure	2.1) Preserve and maintain Interstate system pavement	¹ Percent of pavement in good condition	75.5%		----	
		¹ Percent of pavement in poor condition	0%		----	
	2.2) Preserve and maintain non-Interstate National Highway System (NHS) pavement	¹ Percent of pavement in good condition	24.2%		----	
		¹ Percent of pavement in poor condition	30.6%		----	
	2.3) Preserve and maintain state-owned pavement	² Percent of pavement in good condition (IRI)	47.4		49.0	
		² Percent of pavement in poor condition (IRI)	2.9		0.5	
	2.4) Preserve and maintain city and county road pavement conditions	Percent of pavement in good condition	34.0%		52.6%	
		Percent of pavement in poor condition	21.0%		12.8%	
	2.5) Preserve and maintain NHS bridges	¹ Percent of bridges in good condition	57.8%		57.1%	
		¹ Percent of bridges in poor condition	0%		0%	
	2.6) Decrease the number of bridges that are posted or closed	Posted or closed bridges	13		11	
	2.7) Decrease the number of bridges that are structurally deficient	Structurally deficient bridges	12		9	
	2.8) Increase the average bridge sufficiency rating	Average bridge sufficiency rating in the metropolitan area	88.3		89.1	

¹Federally required performance measurement

²Recommended performance measure

Goal	Objective	Performance Measurement	2018 MPO Baseline Condition Data	Desired Trend	2016-2020 Data	Current Trend
Support an efficient transportation system	3.1) Maintain the percent of person-miles traveled on the Interstate that are reliable	¹ Level of Travel Time Reliability (LOTTR)	100%		100%	
	3.2) Maintain the percent of the person-miles traveled on the non-Interstate NHS that are reliable	¹ Level of Travel Time Reliability (LOTTR)	99.6%		98.3%	
	3.3) Improve freight travel time reliability	¹ Truck Travel Time Reliability (TTTR) Index	1.19		1.23	
	3.4) Reduce the total vehicle hours traveled	Travel Demand Model (TDM) base year total vehicle hours traveled (VHT)	83,582 (VHT)		---	
	3.5) Reduce the total vehicle miles traveled	² Vehicle miles per capita 5-year average	7,012		6,880	
Provide a high degree of multimodal accessibility and mobility	4.1) Provide more on-road bicycle facilities	Miles of on-road bicycle accommodations	19.9		22.3	
	4.2) Provide additional infrastructure to provide pedestrians easy access to commercial districts	Miles of public sidewalks and crosswalks in MPO Pedestrian Master Plan focus areas	282.6 miles		---	
	4.3) A greater percentage of trips are made by foot	Percent of workers who walk to work	2.35%		2.28%	
	4.4) A greater number of trips are made using public transit	Number of MET fixed route rides	398,270		291,571	
	4.5) Decrease the percent of MET's vehicles that are beyond Useful Life Benchmark (ULB)	¹ Percent of revenue vehicles within an asset class that have met or exceeded ULB	Buses: 26%		39%	
			Mini-buses: 54%		33%	
		¹ Percent of non-revenue vehicles that have met or exceeded ULB	66%		20%	
	4.6) Transit facilities remain in good condition	¹ Percent of MET's facilities with a condition rating below 3.0 on FTA TERM Scale	0%		0%	
	4.7) Increase the number of bus shelters in the metropolitan area	Bus shelters	6		11	

¹Federally required performance measurement

²Recommended performance measure

Report Findings

Notable trends at the half-life of the 2045 Long-Range Transportation Plan include the following:

- Positive Trends
 - Decrease in the number and rate of traffic serious injuries
 - Decrease in crashes involving pedestrians and bicyclists
 - Improved pavement and bridge conditions
 - Maintained transit facilities
 - Increase in the number of bus shelters
- Negative Trends
 - Increase in the number and rate of traffic fatalities
 - Increase in non-motorized fatalities and serious injuries
 - Limited increase in on-road bicycle accommodations
 - Decrease in fixed route bus rides
 - Increase in buses that have met or exceeded ULB

Why is Performance-Based Planning Important?

With limited transportation funds and a growing list of infrastructure needs, it is critical that the MPO prioritize projects that accomplish the goals of the Long-Range Transportation Plan. One of the best ways to accomplish this is to select performance measures and targets, and then prioritize projects that help achieve those measures. The performance measures identified in the 2045 LRTP were the first step towards a performance-based planning and programming process for the region. For future documents, MPO staff recommend including MPO-specific targets for each performance measure to assess the progress toward achieving strategic goals.

Next Steps

To improve the performance-based planning process, MPO staff recommend the Technical Committee develop a project scoring process that ties to the goals, objectives, and performance measures identified in the LRTP. This process will help to deliver and program projects that specifically improve performance and achieve goals and targets identified by the MPO Policy Board.

Staff Recommendations

MPO Staff recommendations identified in this report include the following:

- Use IRI data to analyze all state-owned pavement conditions for the purposes of ongoing MPO performance tracking
- Use annual vehicle miles traveled (VMT) per capita in place of VHT for future plans
- Remove shared lane markings from the on-road bicycle accommodations performance measure
- Remove the performance measure for miles of public sidewalks and crosswalks in the MPO Pedestrian Master Plan focus areas
- Include MPO-specific targets for each performance measure in future LRTP documents
- The Technical Committee develop an STBG project scoring process that ties to the goals, objectives, and performance measures identified in the LRTP