5

Chapter Five

METRICS FOR PROGRESS

To achieve our vision for creating a transportation system that enhances mobility, strengthens communities, and generates prosperity, we must be able to monitor and assess how we are meeting our goals. Performance measures, and their respective targets, allow us to understand how our system is performing now compared to where we want to go.

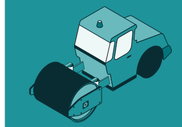
The following chapter provides a summary of our performance measures and targets. This information is updated routinely to track our progress and identify where and how we should focus our investments.

METRICS FOR PROGRESS

To better gauge where we are today and what we need to do to achieve our transportation vision and goals, performance measures and targets have been established. Our MPO is required to track some of these performance measures, while others are voluntary.

CONNECT 2040 GOALS

SAFETY
Provide a safe and secure multi-modal transportation system.



PRESERVATION
Invest in the preservation and maintenance of our existing transportation infrastructure and assets.

MOBILITY
Maintain system performance and enhance modal choice for the efficient movement of people, goods, and freight.

PROSPERITY
Create an equitable, affordable, sustainable, and integrated transportation system for all users.

UNDERSTANDING THE METRICS AND GAUGES IN THIS CHAPTER

The following chapter has been organized by the four goals of *Connect 2040*. Throughout these sections, gauge charts have been used to clarify the comparison of where we stand today compared to our future targets.

Federally Required Metric
MPOs are federally required to use a performance-based approach for guiding transportation investment and policy decisions. Transportation legislation identifies several performance metrics MPOs must monitor, establish targets for, and report on.

Flint Hills MPO Metric
MPOs can choose to establish additional goals and targets specific to their region.

FAST ACT PLANNING FACTORS

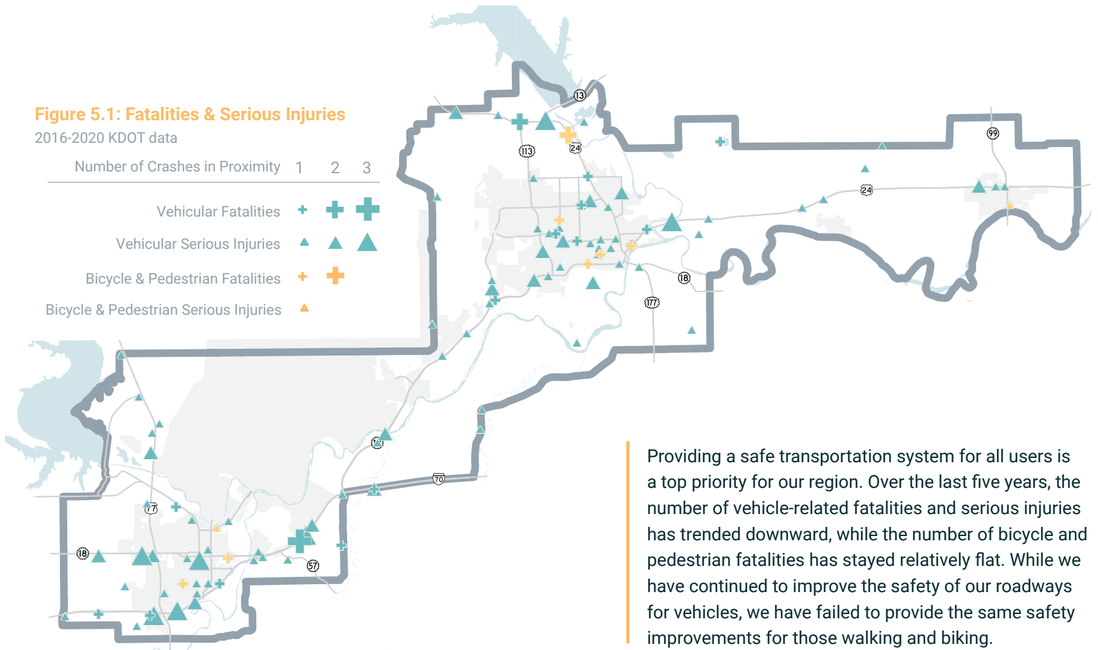
- The current federal surface transportation legislation, the FAST Act, included ten planning factors that must be incorporated into transportation planning. *Connect 2040* provides for consideration of projects and strategies that are consistent with these factors. Within each *Connect 2040* goal section, you will find the corresponding planning factors listed.

SAFETY

Provide a safe and secure multi-modal transportation system.

Figure 5.1: Fatalities & Serious Injuries

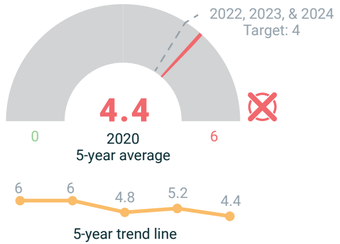
2016-2020 KDOT data



Providing a safe transportation system for all users is a top priority for our region. Over the last five years, the number of vehicle-related fatalities and serious injuries has trended downward, while the number of bicycle and pedestrian fatalities has stayed relatively flat. While we have continued to improve the safety of our roadways for vehicles, we have failed to provide the same safety improvements for those walking and biking.

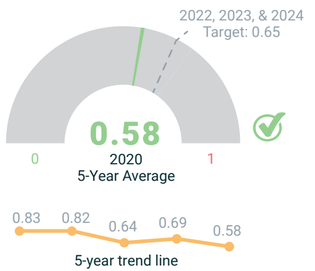
PM 1: # of vehicular fatalities

Over the last five years (2016-2020) we have had a total of 22 fatalities on our roadways. While the five-year rolling average continues to trend downward, the number of fatalities per year fluctuates between one and eight deaths.



PM 2: Rate of vehicular fatalities per 100 million vehicle miles traveled (VMT)

Using a "rate" allows us to compare the safety of our roadways to larger regions that have hundreds of more crashes each year. Think of this as a per capita comparison, but rather than using population, we use the number of miles driven on our roadways. The five-year average rate of fatalities per 100 million VMT continues to trend downward. In theory, this means our roadways are becoming safer, despite an increased use.



WHAT IS VMT?

Vehicle Miles Traveled (VMT) is the number of miles driven on our roadways. In one year. Collectively, people in our region drive **7.5 million miles** a year.

PM 3: # of serious injuries

In 2017, the Federal Highway Administration changed the definition of what qualifies as a serious injury. This largely skewed our data, making it appear as if there was a drastic decrease in the number of serious injuries occurring on our roadways. Due to this change in reporting, it is difficult to gauge our overarching trend for vehicular serious injuries.

PM 4: Rate of serious injuries per 100 million VMT

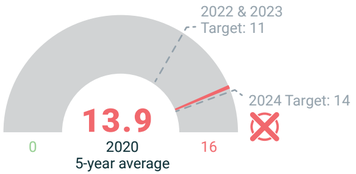
Similar to the number of serious injuries, it is hard to gauge our progress in lowering the rate of serious injuries due to the change in definition of what qualifies as a serious injury.

PM 5: Non-motorized fatalities & serious injuries

Bicycle and pedestrian fatalities and serious injuries are classified as "non-motorized". Our average non-motorized fatalities and serious injuries have increased over the last five years. Our target is to have less than five fatalities and serious injuries in the coming years.

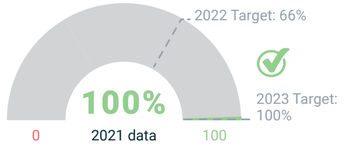
PM 6: % of serious injury and fatality crashes involving bicycles & pedestrians

Despite comprising only 9% of commuting mode share, people walking and biking are involved in 15% of all serious injury and fatality crashes. This percentage has steadily increased over the last five years.



PM 7: % of public transit buses with cameras

The Flint Hills Area Transportation Agency (ATA Bus) has 35 vehicles. Each had a camera installed in 2021, well ahead of the 2023 target.



PM 8: # of public transit related fatalities & serious injuries

The ATA Bus had no transit-related fatalities or serious injuries between 2016 and 2018. Public transit remains one of the safest modes of travel in our region.

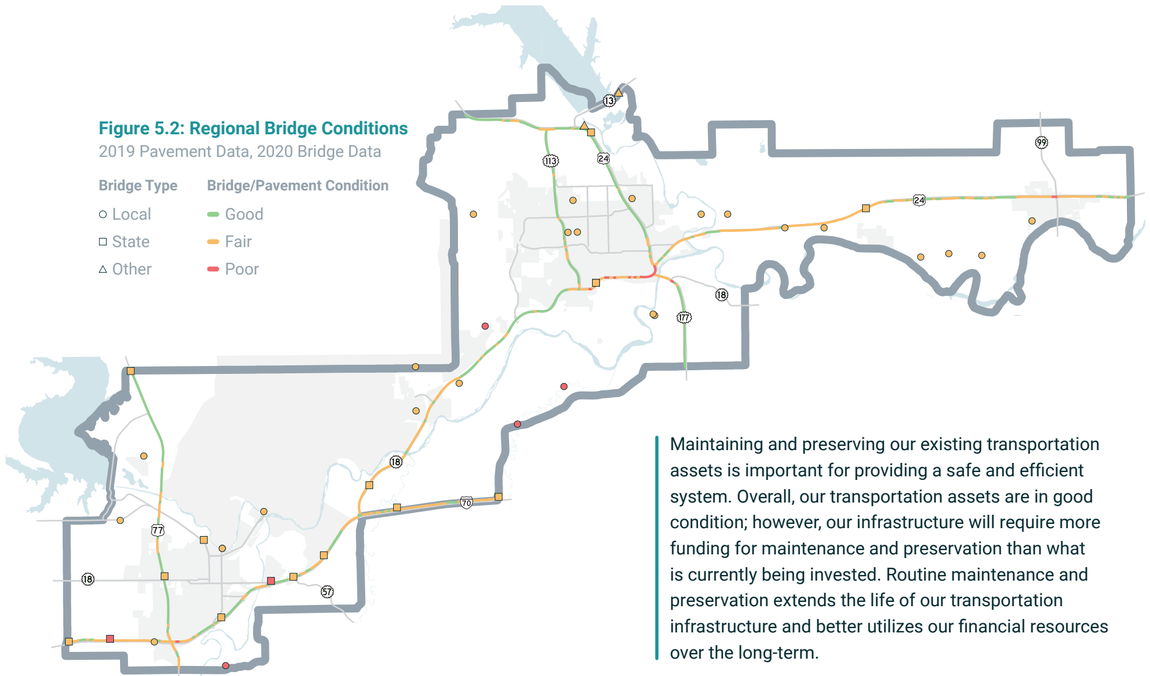
WHAT ARE THE FAST ACT PLANNING FACTORS FOR SAFETY?

- Increase safety of the transportation system for motorized and non-motorized users.
- Increase security of the transportation system for motorized and non-motorized users.

PRESERVATION

Invest in the preservation and maintenance of our existing infrastructure and assets.

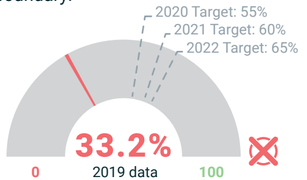
Figure 5.2: Regional Bridge Conditions
2019 Pavement Data, 2020 Bridge Data



Maintaining and preserving our existing transportation assets is important for providing a safe and efficient system. Overall, our transportation assets are in good condition; however, our infrastructure will require more funding for maintenance and preservation than what is currently being invested. Routine maintenance and preservation extends the life of our transportation infrastructure and better utilizes our financial resources over the long-term.

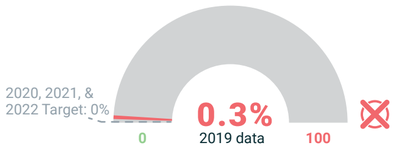
PM 1: % of Interstate pavement in good condition

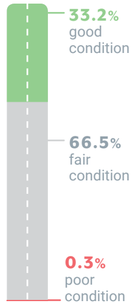
I-70 is the only segment of interstate in the MPO region. There are 16 centerline miles within the MPO boundary.



PM 2: % of Interstate pavement in poor condition

The pavement condition on I-70 continues to deteriorate. The longer preservation and maintenance needs are prolonged, the more expensive repairs become.



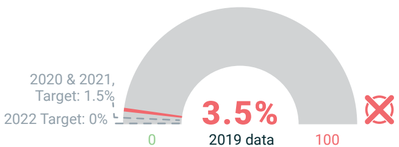


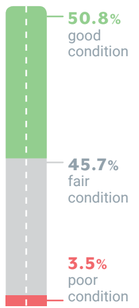
PM 3: % of non-Interstate pavement in good condition

The non-interstate pavement includes all roadways on the National Highway System (NHS), such as state highways. There are 60 centerline miles of non-Interstate NHS roads in our region.

PM 4: % of non-Interstate pavement in poor condition

Since 2017, 2% more pavement on non-interstate NHS roadways changed to poor condition.



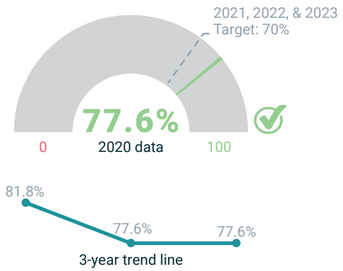


CENTERLINE VS LANE MILES

Roadway lengths can be measured by **centerline miles** or **lane miles.** Centerline miles do not take into consideration the number of lanes a roadway has, while lane miles do. Example: If a four lane road is 100 feet long, it would be 100 centerline miles or 400 lanes miles.

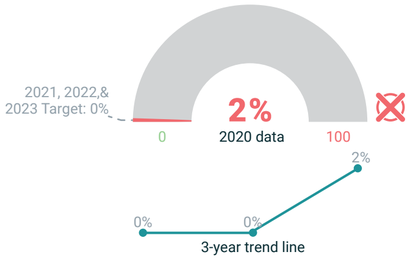
PM 5: % of NHS bridges in good condition

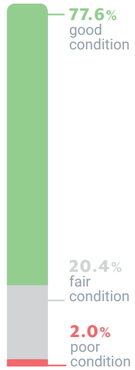
Bridge condition is measured by the deck area classified in good, fair, or poor condition. Of the bridges on the National Highway System (NHS), 77.6% are in good condition.



PM 6: % of NHS bridges in poor condition

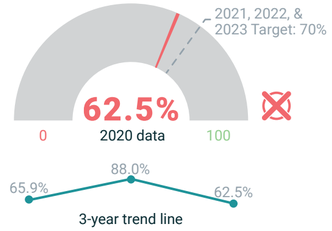
There are two bridges by deck area classified as in poor condition on the NHS system.





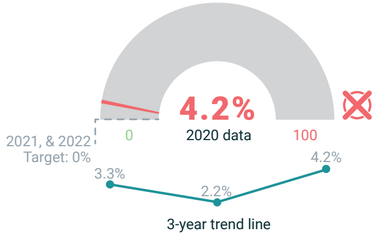
PM 7: % of non-NHS bridges in good condition

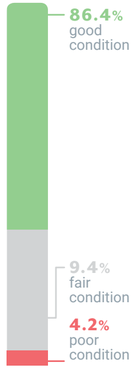
Non-NHS bridges are those on the local roadway system. Of the 96 bridges on the local system, 62.5% are in good condition.



PM 8: % of non-NHS bridges in poor condition

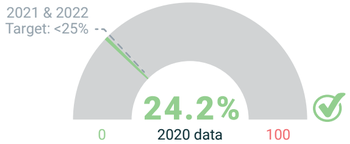
While most of our non-NHS bridges are in good condition, 4.2% (four bridges) are in poor condition.





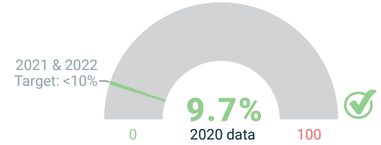
PM 9: % of revenue vehicles exceeding their useful life benchmark (ULB)

Useful life benchmark is the expected life cycle of a transit asset. Our region has several smaller transit providers that provide transportation services to their clients, while the ATA Bus provides the general public with transit services. Our goal is to have less than 25% of all of our transit vehicles meeting or exceeding their useful life. A majority of the vehicles exceeding their ULB are vehicles owned by smaller transit providers.



PM 10: % of transit fleet with more than 200,000 odometer miles

In total, our region has 62 transit vehicles in service by the smaller transit providers and ATA Bus. Of these, six (6) exceed more than 200,000 odometer miles. The goal is to have less than 10% of the fleet below this threshold as maintenance on high-mileage vehicles is substantially more frequent and expensive.



WHAT ARE THE FAST ACT PLANNING FACTORS FOR PRESERVATION?

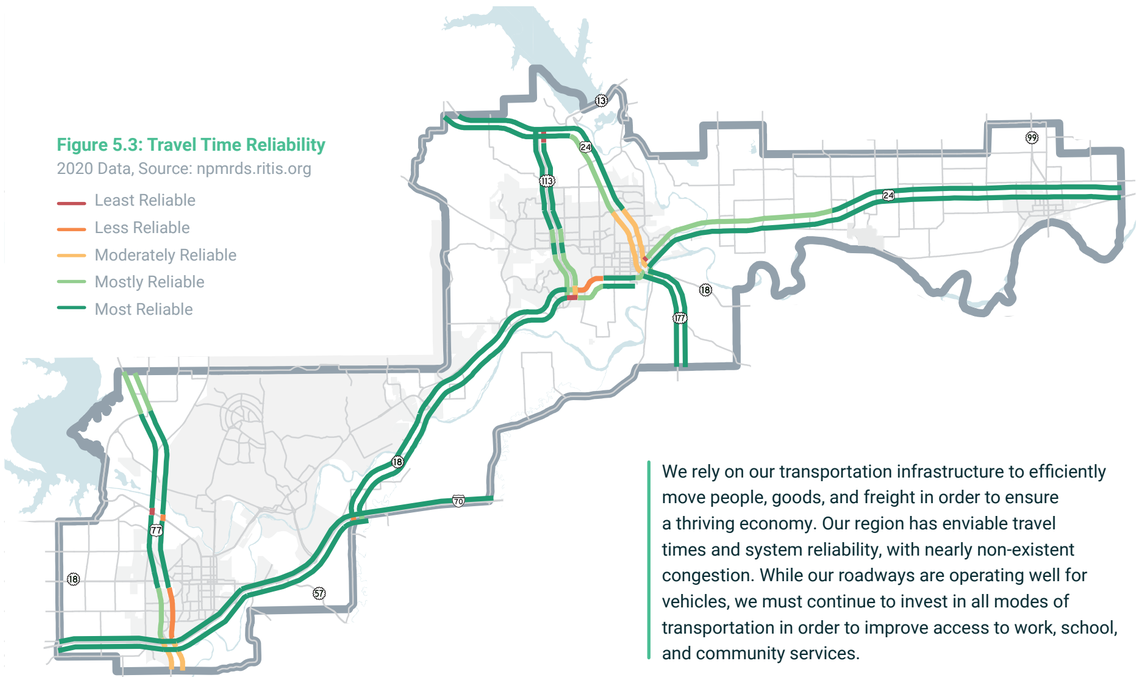
- Emphasize the preservation of the existing transportation system.

MOBILITY

Maintain system performance and enhance modal choice for the efficient movement of people, goods, and freight.

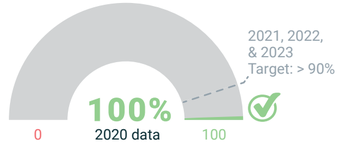
Figure 5.3: Travel Time Reliability
2020 Data, Source: npmrds.ritis.org

- Least Reliable
- Less Reliable
- Moderately Reliable
- Mostly Reliable
- Most Reliable

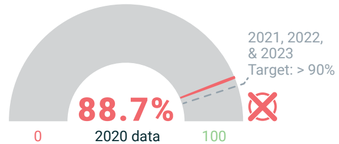


We rely on our transportation infrastructure to efficiently move people, goods, and freight in order to ensure a thriving economy. Our region has enviable travel times and system reliability, with nearly non-existent congestion. While our roadways are operating well for vehicles, we must continue to invest in all modes of transportation in order to improve access to work, school, and community services.

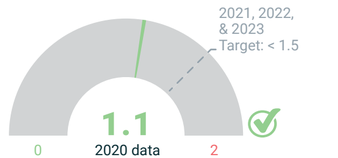
PM 1: % of person-miles traveled on the Interstate with a reliable travel time
100% of the person-miles traveled on I-70 through our region are reliable. This means our Interstate system has little to no congestion, allowing people and goods to move efficiently through our region.



PM 2: % of person-miles traveled on the NHS with a reliable travel time
Of the non-interstate roadways on the National Highway System (NHS), a majority (88.7%) are performing at a high-level of reliability. Reliability has slightly declined since 2018 when 91.3% of person-miles traveled were reliable. The roadways falling below the 90% reliability factor include segments of US-77 and US-24 (Tuttle Creek Boulevard).



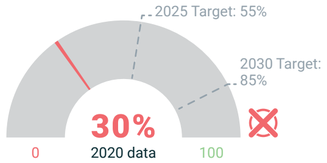
PM 3: Truck Travel Time Reliability (TTTR) index on our interstate system
A complex formula is used to develop the TTTR Index and to calculate the TTTR of our interstate system. Ideally, any segment along a roadway should have a TTTR Index of 1.50 or less. All interstate system segments within our region fall well under this threshold, meaning we have no issues with TTTR.



TRAVEL TIME RELIABILITY
Defined as the consistency or dependability in travel times across different days and different times of day.
Truck Travel Time Reliability (TTTR) is the measure of reliable travel times for trucks on the Interstate system.
This is calculated by comparing days with extremely high delays to days with average travel times.

PM 4: % of Intelligent Transportation Systems enabled traffic signals along key corridors

Intelligent transportation systems (ITS) allow for communication and coordination among signals to improve traffic flow. Our region has 17.5 miles of signalized corridors, with 30% percent enabled with signal coordination to improve the efficiency of the corridor.



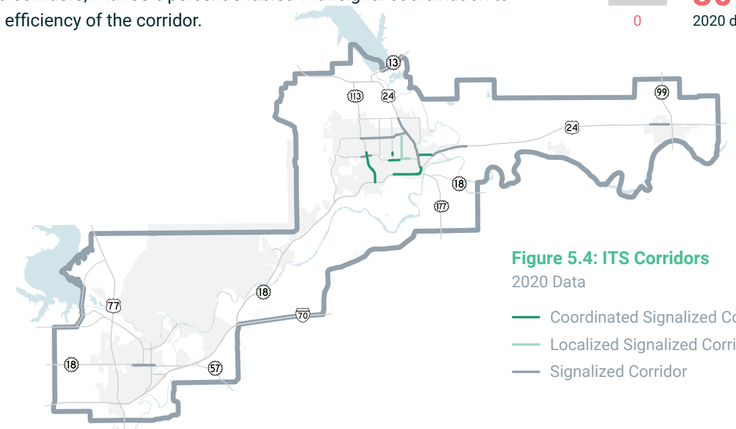
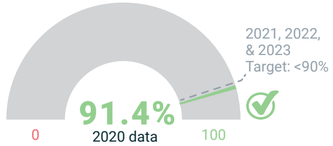


Figure 5.4: ITS Corridors
2020 Data

- Coordinated Signalized Corridor
- Localized Signalized Corridor
- Signalized Corridor

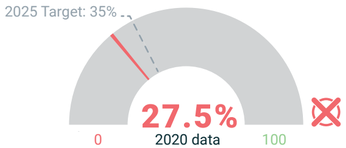
PM 5: % of transit routes on-time performance

Providing an on-time public transit service is important for dependability and reliability. The ATA Bus' current on time performance among all fixed routes has increased from 88.8% in 2019 to 91.4% in 2020.



PM 6: % of planned bicycle infrastructure projects implemented

There are 164.5 miles of planned bicycle projects in our region. To date only 45.3 miles, or 27.5%, of this infrastructure has been built. Strides towards the implementation of this bicycle infrastructure will provide our community with a network that will provide access to local and eventually regional connections.



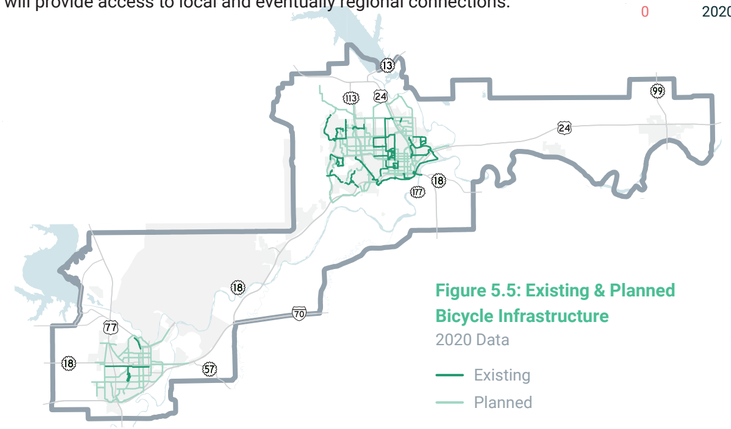


Figure 5.5: Existing & Planned Bicycle Infrastructure
2020 Data

- Existing
- Planned

WHAT ARE THE FAST ACT PLANNING FACTORS FOR MOBILITY?

- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Promote efficient system management and operations.

PROSPERITY

Create an equitable, affordable, sustainable, and integrated transportation system for all users.

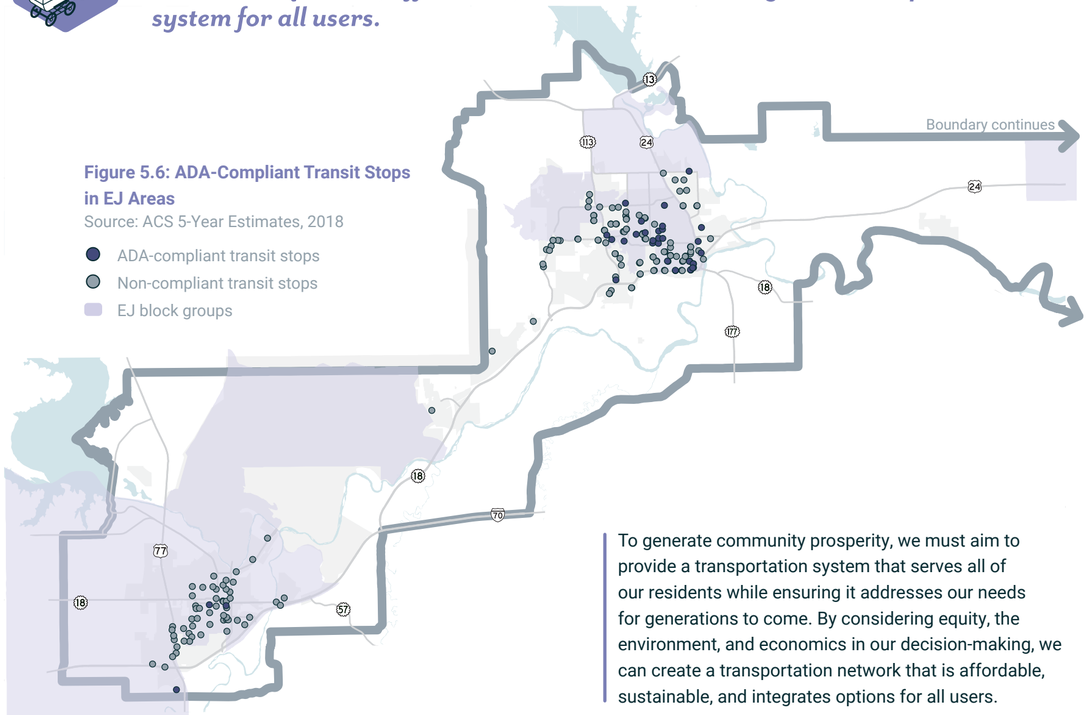
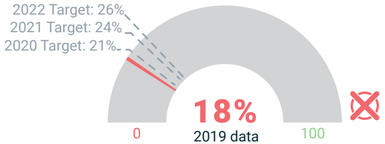


Figure 5.6: ADA-Compliant Transit Stops in EJ Areas
Source: ACS 5-Year Estimates, 2018

- ADA-compliant transit stops
- Non-compliant transit stops
- EJ block groups

To generate community prosperity, we must aim to provide a transportation system that serves all of our residents while ensuring it addresses our needs for generations to come. By considering equity, the environment, and economics in our decision-making, we can create a transportation network that is affordable, sustainable, and integrates options for all users.

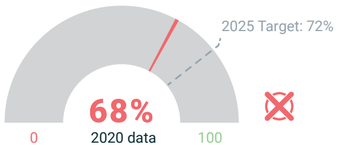
MPO PM 1: % of transit stops compliant with Americans with Disabilities Act (ADA)
Our region has 192 fixed-route bus stops, of which, only 18% are ADA compliant. To improve public transit accessibility, the number of ADA compliant bus stops must increase.



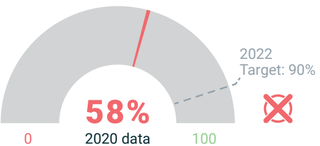
ENVIRONMENTAL JUSTICE (EJ)

EJ is the fair treatment and meaningful involvement of all people regardless of race, culture, or income with respect to transportation planning and project development. The MPO has elected to also identify areas that have a higher than average number of households without access to a vehicle, as this creates additional need for walking, biking, and access to public transit.

MPO PM 2: % of households within 1/4 mile of a transit stop in Environmental Justice areas
In the Flint Hills region, 72% of households are within 1/4 mile of a public transit stop. However, only 68% of households in EJ areas are within a 1/4 mile of a stop.

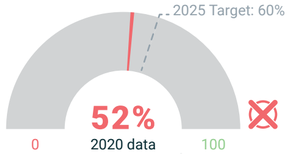


MPO PM 3: % of bus fleet equipped with bike racks
The ATA Bus has a total of 36 buses, of which 21 are equipped with a bike rack. Ideally, all fixed-route buses should have bike racks. This number should also include bike racks on demand response buses that are occasionally used for fixed-routes.



PM 4: % of bicycle infrastructure located in EJ areas

A safe and direct bicycle network is a vital artery for any community; however, for areas in our communities where we have higher percentages of zero car households and lower-incomes, biking can fill a critical transportation need. Biking can also be a child's first form of transportation independence, being able to ride a bike to school or a friend's house.



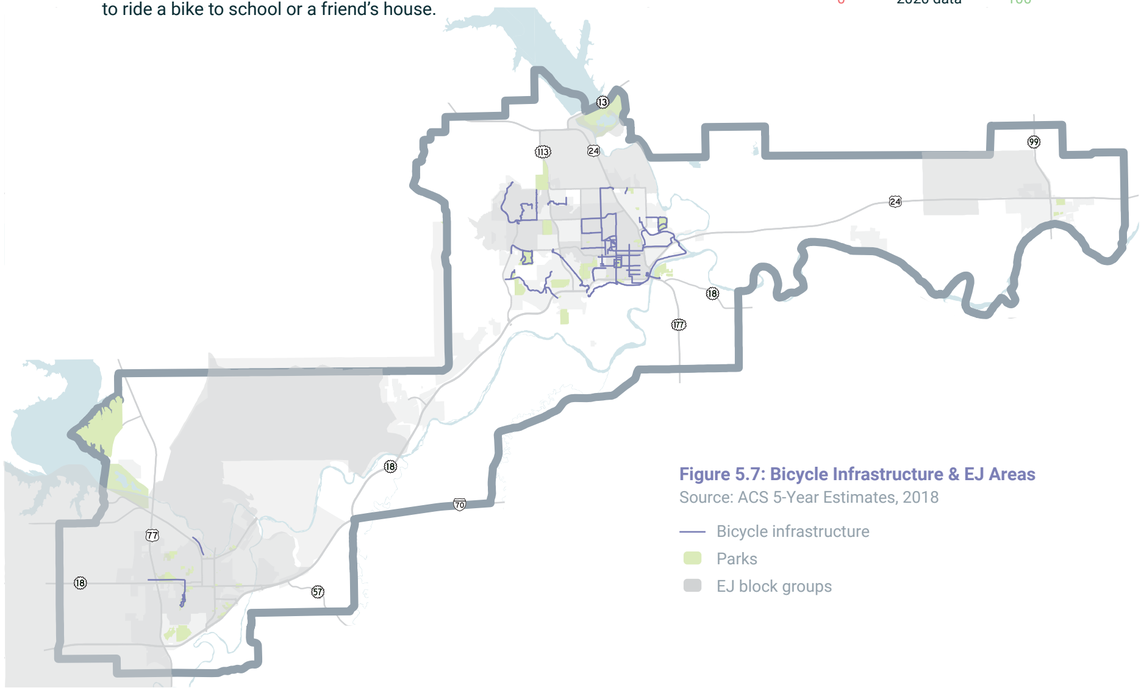
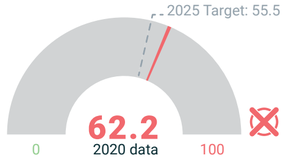


Figure 5.7: Bicycle Infrastructure & EJ Areas
Source: ACS 5-Year Estimates, 2018

- Bicycle infrastructure
- Parks
- EJ block groups

PM 5: Maintain or reduce the number of roadway feet per person

When roadways are built or expanded, a larger financial burden is placed on existing residents to support the infrastructure. To be fiscally responsible and reduce the cost of transportation, our region should focus on reducing or maintaining the number of roadway feet per person.



Road per Capita (ft): each resident responsible for	Manhattan	Junction City	Wamego	Green Valley Area	MPO Average
1990	45.4 ft	52.4 ft	68.0 ft	42.9 ft	52.2 ft
2020	45.2 ft	71.2 ft	65.5 ft	67.0 ft	62.2 ft
% Change	-0.4%	+35.9%	-3.7%	+56.2%	+19.2%

WHAT ARE THE FAST ACT PLANNING FACTORS FOR PROSPERITY?

- Protect and enhance the environment, promote energy conversation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
- Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.
- Enhance travel and tourism.