

CHAPTER 4: CURRENT TRANSPORTATION SYSTEM

Mobility has a significant impact on quality of life in the Kalamazoo Metropolitan Planning area. Our transportation system consists of a historically significant and complex network of state and federal highways, local streets and roadways, transit services, a series of bicycle and pedestrian multi-use paths, a railway line, and the Kalamazoo – Battle Creek International Airport. It is of utmost importance that the transportation system satisfies mobility needs and provides convenient, safe, and efficient transportation choices.

Roadway System

The MPO is primarily concerned with roadways of “Regional Significance” – those roadways eligible to receive federal funding. The MPO is also interested in the connectivity and functionality of the network as a whole and how that may impact the “Regionally Significant” roadway network. Federal statutes in the Code of Federal Regulations (CFR) require that public roadways be classified based on the characteristics of the service (mobility and access) they provide. Functional Classification is an analytic tool that the MPO uses to plan roads and highways and to determine the needs and priorities for transportation funds.

Functional Classification affects some design and access features, the rules regulating a roadway’s use, and in some cases the land use adjacent to it.

The higher the level of motor vehicle mobility required of a facility, the higher its Functional Classification.



A REGIONALLY SIGNIFICANT PROJECT IS A TRANSPORTATION PROJECT THAT IS ON A FACILITY THAT SERVES REGIONAL TRANSPORTATION NEEDS AND WOULD NORMALLY BE INCLUDED IN THE MODELING OF THE METROPOLITAN AREA’S TRANSPORTATION NETWORK.

23 CFR Sec. 450.104

Figure 4-1 shows Functional Classifications defined by the level of mobility versus access that the roads provide, as follows:

- Interstate: Highest mobility for vehicular traffic
- Arterials (Principal and Minor): High mobility
- Collectors (Urban, Rural Major, Rural Minor): Lower mobility/higher access for vehicular traffic
- Local: Lowest mobility; highest access for vehicular traffic

Functional Classifications recognize the need to accommodate vehicular traffic in a manner that reduces congestion and increases connectivity to regional and urban destinations. They also assist in defining eligibility for federal funding sources. An inverse relationship exists between high mobility for vehicular traffic and mobility for pedestrian, bicycle, and in many cases, transit usage. The MPO recognized this relationship and is committed to planning for and implementing a balanced transportation network that effectively accommodates vehicles, pedestrians, bicyclists, and transit riders.

Transportation Corridors

The U.S. Department of Transportation (USDOT), in cooperation with the states, local officials, and MPOs, developed the National Highway System (NHS) with the purpose of identifying the core road network that was considered critical to the nation's economy, defense, and mobility. The U.S. Congress approved the NHS in 1995, with the intent that the United States would prioritize federal-aid funds appropriately to ensure the NHS was adequately maintained. Figure 4-2 shows the NHS routes in our region.

[insert map 4-1: Functional Classifications System]

[insert map 4-2: National Highway System]

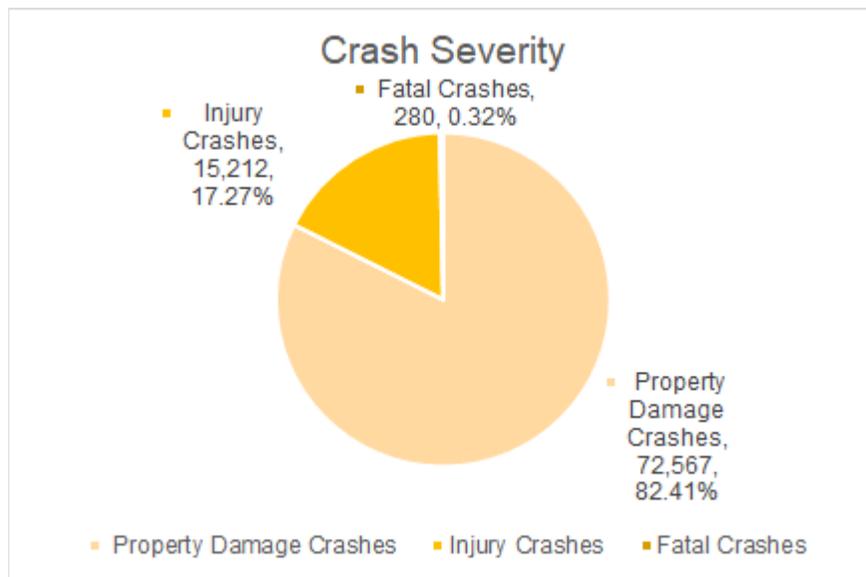
Crash History

Safety is a top priority not only for the greater Kalamazoo metropolitan area, but also at the State and Federal levels. To identify how we can make our transportation system safer, we must understand the crash patterns that have occurred over time. Crash data

collected over the ten-year time period between 2010 and 2019 show that there were over 88,000 crashes, an average of nearly 8,800 crashes per year.

Figure 4-3 shows the severity of crashes in our region. Over the ten-year period, there were 280 fatal crashes and over 15,000 crashes resulting in an injury.

Figure 4-3: Crash Severity pie chart



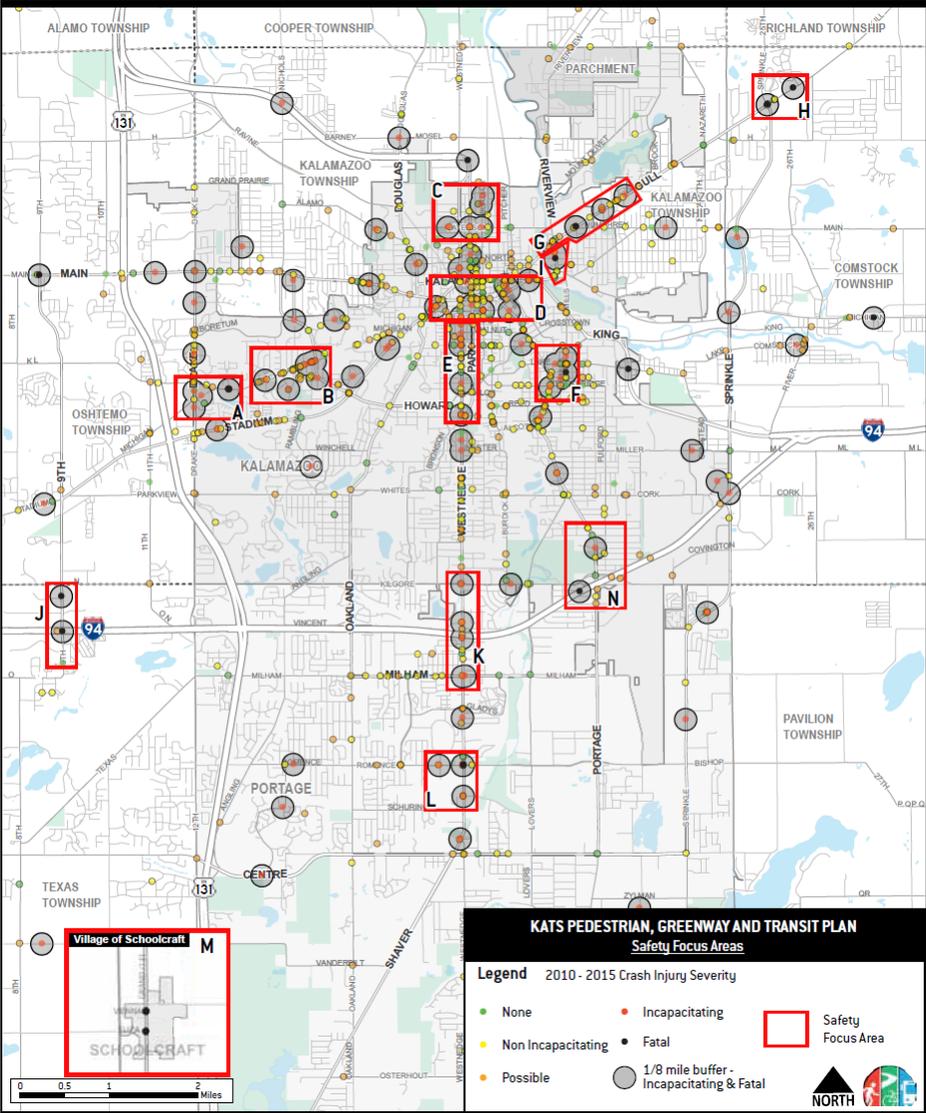
To identify the most hazardous locations, the crashes were sorted by intersections, which were then ranked according to the highest number of crashes. In 2017, the KATS Pedestrian, Greenways, and Transit Plan looked at advancing projects that address existing safety issues since it emerged as the highest priority from the initial public engagement efforts for this study. While completing a network of trail and shared-use paths would provide safer options for many, they will not necessarily improve safety in the high activity, high incident zones that currently exist. Bicycle and pedestrian crash patterns were reviewed for the years 2010 – 2019, and the resulting trends show pockets of high crash locations throughout the KATS Region that deserve priority for facility improvements. Pedestrian and bicyclist crash data was obtained through the Michigan Traffic Crash Facts website, which aggregates and hosts detailed data about reported crashes. This data was compiled and mapped to locate the densest

areas of crash activity. The densest sites became “Safety Focus Areas” and are listed below:

- A - Michigan Avenue & Drake Road
- B - Michigan Avenue & Howard Street
- C- Paterson Street and Burdick Road
- D - Downtown Kalamazoo
- E - Westnedge Avenue from Cedar Street to Maple Street
- F - Stockbridge Avenue to Vine Street
- G - Gull Road from Riverview Drive to Inverness Lane
- H- Gull Road & Sprinkle Road
- I - Riverview Drive & Michigan Avenue
- J - 9th Street & I-94
- K - Westnedge Avenue from Kilgore Road to Milham Avenue
- L - Westnedge Avenue & Romence Road
- M - N Grand Street & Eliza Street
- N - Portage Road & I-94

The majority of bicyclist crashes, 63%, occurred in the City of Kalamazoo followed by the City of Portage at 15% and Kalamazoo Township with 8%. The remaining municipalities each account for fewer than 3% of region-wide bicyclist crashes. Most crashes occurred on smaller, lower speed roads (68%). The majority of pedestrian crashes, 68%, occurred in the City of Kalamazoo followed by the City of Portage at 8% and Kalamazoo Township at 6%. The remaining municipalities each account for fewer than 4% of region-wide bicyclist crashes. The majority crashes occurred on smaller, lower speed roads (67%). Overall, high bicycle and pedestrian crash areas tend to be located in areas where cycling and walking are more popular, like Downtown Kalamazoo and near Western Michigan University. Figure 4-4 shows the resulting list of the top hazardous intersections. These intersections represent high priorities for safety improvements. For a more detailed view and analysis of safety focus areas, please refer to the KATS Pedestrian, Greenways and Transit Plan on the website: <https://katsmpo.org/documents/>.

Figure 4-4: Safety Focus Areas



Transit and Rail System

Transit

The Kalamazoo Transportation Center is located on Kalamazoo Avenue between North Burdick Street and Rose Street and houses Metro, Amtrak, and intercity bus passenger services. The facility is the downtown transfer center for Metro’s fixed route bus system and has a space for food and convenience purchases. Dedicated taxicab pick-up spaces are provided near the building. Sidewalk connections provide pedestrian access. Figure 4-5 shows the Metro fixed route bus system.

Van Buren Transit does not operate fixed route service and therefore does not have a transfer center.

Two intercity bus companies operate regularly scheduled passenger services in and out of the metropolitan area. Greyhound Bus Lines and Indian Trails Motorcoach are both stationed at the Kalamazoo Transportation Center. Charter bus service is provided by approximately seven local companies.

The Kalamazoo area is served by several locally based, independently owned taxi companies and one limousine service. Rides are available on an on-call basis, seven days a week, 24 hours a day for most taxi services. Due to its more rural nature, taxicab service is limited with Van Buren County.

Metro serves as the community ridesharing office for Kalamazoo, Barry, Branch, Calhoun, and St. Joseph counties. The office coordinates and provides updated names and address information for people requesting ridesharing information to locations within and out of the county area. Other activities of the community ridesharing program include contacts with local employers to set up carpool/vanpool programs within their companies and surveys and interviews with users of the carpool lots in the Kalamazoo area. MDOT maintains several carpool lots in the metropolitan area.

Several organizations, including church groups, senior care centers, and special interest providers maintain small scale transportation services for their members or clients.

[insert figure 4-5: Metro Fixed Bus Routes]

Rail

Rail freight service to the Kalamazoo area is provided by three rail carriers. Norfolk Southern, operating on both north-south and east-west rail lines through the mid-section of the urban area, provides freight movements between Detroit and northern Indiana

(and points beyond). Norfolk Southern also maintains a switching yard near the east side of the city of Kalamazoo's central business district. Grand Trunk/CN North America operates freight movement from two rail lines which serve Kalamazoo from the southwest, with continued service through Battle Creek and onto Detroit and Canada. A main line connects at the southern urban area which runs to Battle Creek. Grand Trunk maintains a switching yard near South Sprinkle Road. Grand Elk Railroad also leases north/south track rights from Norfolk Southern Railroad and provides freight service along this corridor between Elkhart, Indiana and Grand Rapids, Michigan. Small spur lines serve major industrial locations near the Pfizer facilities east of Portage Road and along the Fulford Street industrial area.

Rail passenger service is provided by Amtrak using the east-west Amtrak/Norfolk Southern corridor between Detroit and Kalamazoo. The Amtrak station is housed in the Kalamazoo Transportation Center located on the north side of the City of Kalamazoo's central business district. Passengers can reach numerous national destinations using the Amtrak Wolverine and Blue Water routes that pass-through Kalamazoo.

In 2012, the Michigan Department of Transportation (MDOT), Federal Railroad Administration (FRA) and Norfolk Southern Railway Co. signed a sales agreement that transferred ownership of 135 miles of Norfolk Southern railroad to MDOT for \$140 million. The line is part of Amtrak's Wolverine and Blue Water passenger rail services between Kalamazoo and Dearborn. This purchase was one step in a multi-step process that will pave the way for track improvements designed to accommodate passenger train speeds up to 110 mph. This will reduce travel time between Detroit and Chicago, reducing the overall trip time between the two cities to about five hours. MDOT has aggressively promoted the development of this corridor and has completed work towards high speed train service including in-cab signaling and improved road crossings between Kalamazoo and the state line west of Kalamazoo. Details of passenger and freight rail planning activities are included in MDOT's MI Transportation Plan which is available from the Michigan Department of Transportation's website.

Active Transportation

Active transportation (bicycle and pedestrian) elements are now integral components of this 2020-2050 MTP. As a result of specific needs identified in the 2045 MTP, the MPO has adopted the KATS Pedestrian, Greenways, and Transit Plan. Active transportation offers several options to improve our existing transportation system efficiently and cost effectively through a variety of systematic enhancements while simultaneously providing benefits, including safety to all roadway users. The Non-Motorized Element and the KATS Pedestrian, Greenways, and Transit Plan can be found in the appendices of this plan.

Freight

Freight is vital to the Kalamazoo MPO's economy, as well as the Michigan economy. Most raw and furnished goods and major parcel deliveries are moved via interstate motor freight carriers and a variety of freight class vehicles. Efficient freight mobility is crucial to the economic resilience of the area.

Within the area, the W.E. Upjohn Institute's REMI (Regional Economic Model Incorporated) model projects over twenty-four billion dollars in gross regional product generated by 2035 in three areas directly tied to freight and freight movement. However, ease of freight movement can conflict with compact urban development. As the Kalamazoo urbanized area continues to develop, KATS will need to weigh many of the other issues identified in the area and in our transportation survey results against the needs of the freight community.

At the state level, trucking moves approximately 70 percent of the freight tonnage into, out of, and within Michigan according to the MDOT Long Range Transportation Plan's Freight Profile Technical Report. The I-94 corridor going through Kalamazoo County carries approximately 100 million tons of freight annually and is the highest freight volume highway facility in Michigan. Kalamazoo County is the ninth highest Michigan county for originating intrastate truck freight movements with 6.32 million tons annually leaving the county.

Aviation

Located on Portage Road, south of I-94 in the east central urban area, the Kalamazoo/Battle Creek International Airport provides both commercial (three airlines) and general aviation services to the metropolitan and southwest Michigan areas. This airport primarily provides passenger services. The W.K. Kellogg Regional Airport in Battle Creek handles much of the air freight into and out of this region. The Kalamazoo/Battle Creek International Airport is one of the 14 air carrier airports in Michigan and is classified by the Federal Aviation Administration as a Class 1 airport. Airport facilities are owned and operated by Kalamazoo County. In addition to scheduled commercial passenger services, the airport facilities support a broad range of aviation activities, including instructional flight schools, corporate aircraft facilities, flying clubs, military operations, charter services, air freight, and air ambulance.

Land use surrounding the airport facility is primarily dedicated to commercial/retail and industrial purposes. A mobile home park is located adjacent to the northeastern edge of the airfield. The industrial and commercial areas serve as a buffer between airfield activities and larger residential areas located north of I-94, west of Portage Road, and east of South Sprinkle Road.

Portage Road is the main link that connects the airport to the rest of the surface transportation system. The airport is accessible by major transportation corridors linking to Portage Road from I-94, Kilgore Road, East Milham Avenue, and East Centre Avenue. Long- and short-term parking areas have been reconfigured along with an access/regress road to improve connections to the major street network. A new terminal building was built to improve airport customer service and airport operations. Intermodal services linking to the facility include several taxi companies, limousine services, a variety of specialized transportation providers, and the public transportation providers with Metro Connect and Metro services. Metro maintains a fixed route bus stop at the airport, providing interconnected bus service from all routes within their service area during normal operating hours.

Maintenance

Road Commission of Kalamazoo County: The Road Commission of Kalamazoo County (RCKC) maintains 1,269 miles of road throughout the 576 square mile county. The primary road system consists of 446 miles; the remaining 823 miles comprise the local system. Along with our maintenance operations, we maintain 63 bridges, over 24,566 signs, 48 traffic signals and 41 flashing beacon at intersections. Working with other governmental units, the RCKC works hard to locate and maximize every dollar available for infrastructure maintenance and construction. The RCKC current has an Asset Management Plan, which includes inventory of the pavement and bridge conditions in Kalamazoo County.

Van Buren County Road Commission: These Local Road Professionals operate a variety of equipment to maintain a county road system of 1,330 miles, 379 miles within the KATS boundary. The Van Buren County Road Commission provides maintenance operations on all Act 51 certified roads, including Primary Roads (all roads with the "CR" designation, Red Arrow Highway, and Blue Star Highway), Township Local Roads, including streets, avenues and roadways within certified subdivisions.

The Van Buren County Road Commission is also responsible for funding special and heavy maintenance projects on all Primary Roads (all roads with the "CR" designation, Red Arrow Highway, and Blue Star Highway). As partners in transportation, the Van Buren County Road Commission and its Local Township Officials are in close contact throughout the year to improve the quality and safety of our roads, determine maintenance priorities, and discuss various road related issues. Townships are responsible for funding road construction projects and upgrades on all Township Local Roads (certified streets, avenues and roadways within certified subdivisions). The Road Commission assists its Township Partners in the surveying, engineering, bidding and construction process of these construction projects.

Michigan Department of Transportation: KATS is serviced by MDOT's Southwest Region. The Southwest Region Engineer is responsible for roadway construction, roadway maintenance, engineering support, technical support, traffic operations, bridge

maintenance, safety operations, equipment management, and administration operations.

Locals:

Local streets are maintained by the cities and townships in which they reside. It is not uncommon for local agencies to coordinate projects to help with the cost of road maintenance.

Asset Management Plans: The RCKC currently has an adopted asset management plan that includes an inventory of the pavement and bridge conditions in Kalamazoo County.

Issues Facing the Region

As a growing metropolitan area, there are many transportation issues facing the region. Many of these issues are identified in our Transportation Survey, while others are national or global in scale. The following list is not exhaustive, it is meant to highlight areas that KATS has identified throughout the transportation planning process as overarching issues facing the region.

Aging Population

The number of adults (age 65 and older) in the greater Kalamazoo Metropolitan Statistical Area is expected to increase from 15% of the population in 2018 to 33% of the population in 2050. Across the United States, older adults (age 65 and older) are putting more emphasis on how and where they choose to age. While many older adults want to “age in place,” many are also now making purposeful decisions about where they want to spend their retirement years based on the availability of public transportation and access to goods and services. When older adults are able to easily and safely access public transportation, they are able to continue to meet their basic needs such as medical appointments, shopping, and recreation without having to drive or rely on others.

People with Disabilities

All transportation improvements must be constructed based on the American's with Disabilities Act and all transportation facilities and amenities must be constructed for all legal users. KATS should work with local advocates of people with disabilities to identify areas that do not meet the needs of all legal users and take steps to fix them. In 2014, KATS adopted a Complete Streets Policy to help strengthen the ties between funding priorities and the needs of all users of the roadway.

National Security

The Department of Homeland Security and Federal Highway Administration have charged transportation agencies with evaluating transportation infrastructure security. Michigan's Department of Transportation (MDOT) is responsible for a relatively large and diverse number of critical transportation facilities. These facilities support supply chains, passenger movement, and assets so vital to the people and businesses of the state of Michigan. The nation that their incapacity or destruction would have a debilitating impact and seriously weaken the state's security, economic stability and public safety. More than 25% of all trade between the United States and Canada passes through Detroit's international crossing. To protect these important economic assets, MDOT, Michigan State Police and local agencies regularly cooperate to identify contraband security issues and potential targets.

Security

Security of the streets and highways portion of the transportation system is provided in part by arrangements between enforcement and street departments to provide temporary traffic control at critical locations in the event of an inoperable traffic signal and response to incidents that disrupt operations on critical locations in the system. On the transit side, security is provided using onboard communications and video equipment. Video and public safety patrols are used at the main transportation center in downtown Kalamazoo.

Climate Change and Natural Environment

During the past century, the Earth has experienced a gradual warming trend. Human induced greenhouse gases, largely from fossil fuel combustion, are recognized as one of the major causes. To mitigate the effects of urbanization and development, Federal Highway Administration (FHWA) regulations require transportation agencies to include the environment in the planning process. FHWA supports environmental planning through its Planning and Environmental Linkages program. Planning and Environmental Linkages (PEL) represents a collaborative and integrated approach to transportation decision making that:

1. Considers environmental, community, and economic goals early in the transportation planning process.
2. Uses the information, analysis, and products developed during planning to inform the environmental review process.

Waterways, wetlands, woodlands, and other natural elements have a great impact on the greater Kalamazoo environmental landscape. Preservation of these natural areas is important to maintaining wildlife in the area and reducing the negative environmental footprint caused by things like vehicle emissions. Planning entities must work in collaboration to be aware of environmental challenges by monitoring adequacy of wetlands, stormwater management, endangered species, habitats, and invasive species.

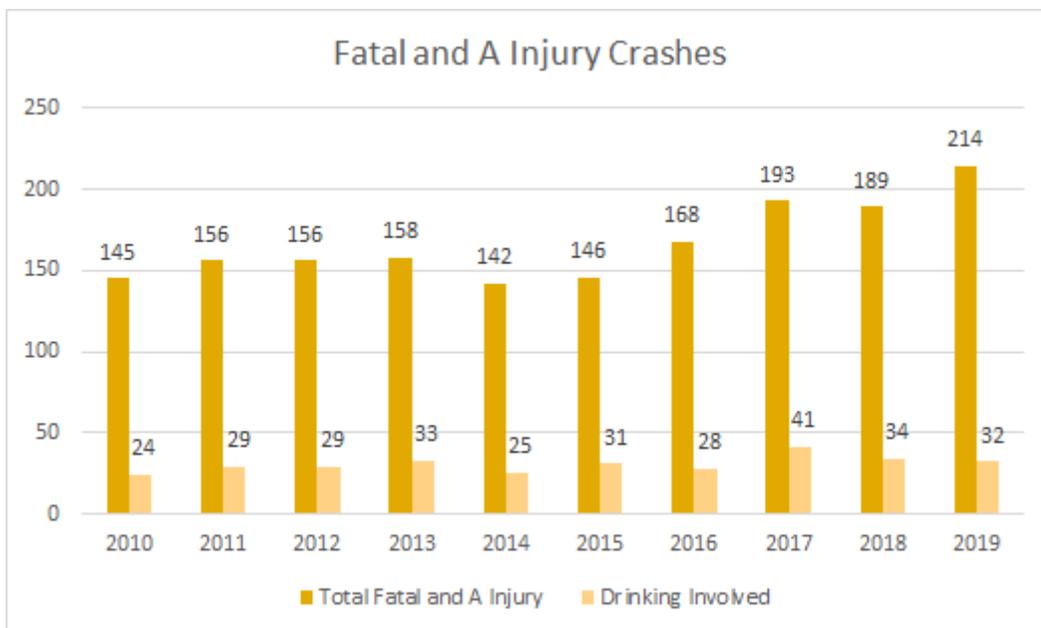
Health, Livability and Access

Addressing livability issues in transportation planning, development and implementation ensures that transportation investments support both mobility and broader community goals. A well-crafted transportation project can be the catalyst for achieving these goals, including economic growth and job creation. Based on the Transportation Survey results, there is growing demand to design facilities that meet the needs for all users while balancing the different access and mobility needs of motorists, freight, bicyclists, pedestrians, and transit riders at the same time.

Safety

Tens of thousands of people die each year in automobile crashes across the United States. In the State of Michigan, nearly 1,000 die each year. While the overall number of fatalities has been trending down, the Metropolitan Area should make investing in safety a priority. Congestion, alternative transportation modes, driving habits, and changing design standards can render infrastructure functionally outdated. Crashes are a critical indicator when this happens, allowing engineers and planners to identify high frequency traffic conflicts. Since most crashes occur due to human error, no level of improvement can prevent all crashes. The process of using crash data to justify improvements to mitigate human error remains an important part of developing a safer roadway system.

The Kalamazoo Area Transportation Study supports the State of Michigan’s Strategic Highway Safety Plan. The fatal and incapacitating (A) injury crash history in the KATS area from 2010 to 2019 shows a somewhat static pattern between 2010 and 2013, although the pattern begins to increase from 2014 until 2019. The number of drinking involved crashes followed a less linear pattern, although there was a decline between the years 2017 and 2019.



These types of crashes that comprised the fatal and incapacitating (A) injury crashes in the KATS area involved fixed object or off-road crashes and on-road crashes with other

vehicles, bicyclists or pedestrians. The percentage of all fatal and incapacitating (A) injury crash types for the 2010 through 2019 period is shown in the table below. Overwhelmingly, the two crash types that resulted in fatal and (A) injury crashes involve rear end straight collision and collisions with fixed objects. Pedestrian and bicycle involved crashes combined only represent 2% of these crashes, but still have the potential to be reduced.

KATS and its members continue to review the road system to identify locations with correctable crash patterns and develop countermeasures to address identified correctable sites. Public education and enforcement actions are also part of an effective safety improvement program.

2010 to 2019 Fatal and A Injury Crashes	
Crash Type	% of Crashes
Rear end straight	28.46%
Fixed Object	16.22%
Side swipe same	14.05%
Angle Straight	10.47%
Misc. multiple vehicle	4.15%
Angle turn	3.71%
Angle drive	3.06%
Head on left turn	2.69%
Backing	2.59%
Rear end driveway	2.10%
Overturn	1.89%
Misc. single vehicle	1.73%
Parking	1.46%

Head on	1.25%
Rear end left turn	1.20%
Other drive	1.14%
Other object	1.01%
Rear end right turn	0.97%
Pedestrian	0.94%
Bicycle	0.86%
Hit train	0.03%