

Chapter 6: Considering Emerging Issues



Kayakers on the Grand River; photo courtesy of LGROW

Since the approval of GVMC’s 2040 Metropolitan Transportation Plan in May of 2015, many issues have emerged that must be taken into consideration during the planning process. For instance, there is a new transportation bill, the FAST Act, which was signed into law on December 4, 2015. This transportation bill includes two new planning factors:

Planning Factor 9: Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation

Planning Factor 10: Enhance travel and tourism

While these elements have always been a consideration in the transportation process, the 2045 MTP represents the first long-range plan where we have had to specifically address the cause-and-effect relationship between transportation options and impacts on the environment, resiliency and reliability, and travel and tourism. Furthermore, technology continues to quickly improve, and ideas once considered futuristic, such as autonomous vehicles, have now become reality for our area. The Grand Rapids Autonomous Vehicle Initiative has brought four six-seat self-driving electric shuttles to the Grand Rapids downtown area for a one-year pilot. The concept of delivery drones could also impact the shipping and receiving of goods.

Recognizing the impact that emerging technology will have on the transportation system, including the safe and efficient movement of people and freight, the MTP Steering Committee recommended adding a specific objective to the first MTP goal: Further Develop an Efficient Multimodal System, which is:

Objective 1e: Prepare for new and emerging operation and propulsion technology in support of the goals and objectives of the Metropolitan Transportation Plan

This chapter describes how GVMC has considered the resiliency and the reliability of the transportation system along with the reduction or mitigation of stormwater impacts of surface transportation, enhancing travel and tourism, and the inclusion of new and emerging operation and propulsion technology, within its planning process for this document.

Environment



Lower Grand River Organization of Watersheds (LGROW) member clearing off a storm drain

Highlights:

- An average of seven Clean Air Action Days have been called per year over the last five years
- Over 91% of area residents are “aware” or “somewhat aware” of the Clean Air Action program, and 76.5% of area residents participate in a voluntary emission reduction activity on Clean Air Action Days at least some of the time
- 622 storm drains have been adopted, the vast majority of which are in the Grand Rapids metro area

Overview

Transportation and the environment are linked through runoff from roadways and pollution through vehicle emissions. Transportation is one of the largest factors related to energy and emissions. Energy conservation can help reduce total daily pollution output. Solutions such as investing in public transportation can help cut down on emissions released into the air in our area.

Process for Determining and Addressing Need

GVMC and its members have several measures to assess the current state of the regional environment. Air quality conformity assures that regional emissions will not negatively impact the region’s ability to meet the National Ambient Air Quality Standards (NAAQS). As of 2019, Kent and Ottawa County are both categorized as attainment zones for ground-level ozone and fine particulate matter. Furthermore, GVMC collaborates with environmentally focused organizations during our public involvement and consultation processes, and a member of the West Michigan Environmental Action Council and Rapid Wheelman Bicycle Club is a non-voting member of our Technical and Policy Committees. This member often brings emerging environmental issues to the forefront for discussion at Committee meetings. GVMC transportation staff also work alongside our Environmental Department to improve the environment in our region.

Environmental Needs and Proposed Solutions

GVMC and its members are involved with multiple efforts to improve the natural environment of our region in a plethora of ways. These efforts are in response to previously identified needs to protect our natural resources and often include collaboration with area members and partners. They include:

Regional Prosperity Initiative

GVMC participates in the Regional Prosperity Initiative, which attempts to implement approved watershed management plans from the US EPA and Michigan Department of Environment, Great Lakes, and Energy (MDEGLE).

West Michigan Clean Air Coalition Clean Air Action Program

GVMC works to reduce emissions by participating on the West Michigan Clean Air Coalition (WMCAC) and helping to run the Clean Air Action program for West Michigan. This program started in 1995 in response to GVMC's designation as nonattainment for ground-level ozone. The WMCAC includes several partners in Kent, Ottawa, Muskegon, and Kalamazoo counties that work together to achieve cleaner air in the region through the education and promotion of voluntary emission reduction activities. The program calls Clean Air Action Days when pollution levels for ground-level ozone or fine particulate matter are expected to reach or exceed the Unhealthy for Sensitive Groups (USG) threshold. At this point, sensitive groups, such as children and the elderly, might experience negative health impacts, like difficulty breathing. On Clean Air Action Days, the WMCAC encourages local residents and businesses to take part in a voluntary emission reduction activity, such as waiting to mow the lawn or refuel their vehicle, carpooling, or taking the bus. According to our 2016 survey, over 91% of area residents are "aware" or "somewhat aware" of the Clean Air Action program, and 76.5% of area residents participate in a voluntary emission reduction activity on Clean Air Action Days at least some of the time, thereby reducing emissions. The Rapid offers free bus rides on mainline bus routes on Clean Air Action Days as well, which significantly increases ridership, and consequently reduces emissions.

The NPDES Municipal Separate Storm Sewer System

Stormwater runoff is generated from rain and snowmelt that flows over land or impervious surfaces, such as paved roads, that does not soak into the ground. As stormwater flows off driveways and streets, it picks up and carries most of the items in its path—grass clippings, driveway salt, fertilizer, pet waste, trash, and more. Stormwater runoff flows through Municipal Separate Storm Sewer Systems (MS4s) and is then discharged untreated into local waterbodies. To prevent harmful pollutants from entering local lakes, rivers, and streams through MS4s, certain municipalities are required to have permits and develop stormwater management programs. GVMC assists 23 different municipalities in the Lower Grand River Watershed with stormwater compliance to prevent pollution and improve water quality throughout the region.

Lower Grand River Organization of Watersheds (LGROW)

GVMC houses the Lower Grand River Organization of Watersheds (LGROW), which brings together municipalities and community stakeholders to address issues facing the Grand River, the longest river in Michigan. In 2018, LGROW partnered with Citizen Labs in order to create an Adopt-a-Drain program, which enables citizens to have a direct positive impact on water quality in the Grand River by adopting a drain. Those who sign up pledge responsibility to keep a drain in their neighborhood free of leaves and debris which helps to protect the environment, manage stormwater, and minimize flooding. The Adopt-a-Drain program is an innovative way for participating communities to meet stormwater permit requirements and perform a valuable service for the community.

More information is available at www.adoptadrain-lgrow.org/ or www.lgrow.org. Currently, 622 drains have been adopted, most of which are in the Grand Rapids metro area.



Buck Creek, a tributary of the Grand River that stretches 20.3 miles long; photo courtesy of LGROW.

PFOS/PFAS Remediation

In recent years, samples at the Gerald R. Ford International Airport (GFIA) have been acquired to assess any levels of PFAS or PFOA contamination from firefighting foam that was used on the property. Sample numbers above or at standard levels have been detected in the soil as recently as November 2019. Measures have been taken to help this issue, such as an EGLE Remediation and Redevelopment Division provided by GFIA to draft a work plan for additional on-site investigation.

The Grand River Revitalization and Rapids Restoration

GVMC's Environmental Department staff is heavily involved in this program, which attempts to transition the Grand River back to a more natural state for fish and other animals in its ecosystem, remove dams, and create ways for people to access and use the river.

Air Quality Conformity and Interagency Consultation

GVMC is an orphan maintenance area (OMA) for ground-level ozone, and therefore must perform an air quality conformity analysis for its major planning documents, including the short-range Transportation Improvement Program (TIP) and the long-range Metropolitan Transportation Plan (MTP). More information on air quality requirements are included in Chapter 9 in the "Air Quality" section on page 196. More information about previous air quality analyses can be found at www.gvmc.org/air-quality.

Because of our OMA status, GVMC is required to send our project lists for the TIP and MTP to the regional Inter-Agency Work Group (IAWG) for analysis. This group includes representatives from other MPOs in the area; MDOT; the Michigan Department of Environment, Great Lakes, and Energy (MDEGLE); the Environmental Protection Agency (EPA); the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA).

Coordination with Environmental Organizations

GVMC contacts area environmental organizations through our consultation process for both the TIP and the MTP and asks them to review project lists to ensure that our natural resources are protected. These organizations are also included in all of GVMC's public outreach efforts, so they are always informed of

opportunities to comment on, or participate in, the development of the MTP. More information on the consultation process for this document is available in Chapter 9.

Challenges

Air Quality

As of 2019, both Kent and Ottawa Counties are designated as attainment by the Michigan Department of Environment, Great Lakes, and Energy (MDEGLE) for the most recent ground-level ozone and fine particulate matter standards. For an area to be considered attainment, it must meet the National Ambient Air Quality Standards (NAAQS) set by the EPA. Kent and Ottawa County have historically struggled to meet the ground-level ozone standard as our monitoring data is negatively influenced from transport from large cities across Lake Michigan, such as Chicago and Gary, IN. It is therefore all the more important for our area to reduce its transportation-related emissions to counteract the impact of transport.

It is also worthy to note that current regional emission inventory data suggests that mobile emissions account for approximately 30 percent of Volatile Organic Compound (VOC) emissions and more than 50 percent of Nitrogen Oxide (NOx) emissions. VOCs and NOx combine in the presence of sunlight to form ground-level ozone. Therefore, it is important to support strategies for the Ozone State Implementation Plan (SIP) that are cost effective and have a direct environmental benefit.

Natural Resources

Waterways, wetlands, woodlands, and other natural elements have a great impact on the Greater Grand Rapids 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.

Water Resources and Infrastructure

Runoff from roadways is often carried into local waterways after storms. This can damage the local environment by polluting streams or harming animals who use them. Developments along these roadways typically outfit abutting lots to carry their runoff into existing MDOT, county, and local stormwater systems, shifting responsibility for this pollution to transportation agencies. Coordination of transportation and underground infrastructure improvements can assist with this issue by helping to plan for extreme weather events. This coordination could lead to more effective and affordable solutions in the future.

Supporting Goals and Objectives

Goal 4: Strengthen Land Use and Transportation Policies

Objective 1a: Link transportation and land use policies to encourage people and businesses to live and work in a manner that improves equitable access to the entire system for all users and streamlines number and length of trips when possible

Goal 7: Protect and Enhance the Environment

Objective 7a: Promote energy conservation and improve air quality by encouraging active modes of transportation that reduce emissions and improve quality of life and public health

Objective 7b: Encourage the reduction or mitigation of storm water impacts of surface transportation projects

Travel and Tourism



The Blue Bridge in downtown Grand Rapids at dusk; photo courtesy of Experience Grand Rapids

Highlights:

- 3,265,242 passengers flew through the Gerald R. Ford International Airport in 2018
- The Pere Marquette brought 96,643 travelers through our city in 2018
- Kent County is home to three professional sports teams and 38 parks

Overview

Travel and tourism in the Grand Rapids area have a notable impact on the local economy. Events like ArtPrize or the Meijer LPGA Classic give the region a consistent economic boost and heighten the scope of the region on a national or even international basis, leading to an increase in tourism. ArtPrize alone brings in 500,000 visitors to Grand Rapids during the biennial 19-day event. Voted Beer City USA in national polls and named Best Beer Town and Best Beer Scene by USA Today readers, Grand Rapids is also a destination for craft beer enthusiasts. The Beer City Ale Trail includes 80+ breweries, which, according to Experience Grand Rapids, is “more incredible craft beer per square mile than just about anywhere else on earth.”

While Grand Rapids offers numerous attractions that draw in visitors, the city also serves as a major hub to connect travelers to other tourism destinations via the area’s transportation system. With a steady stream of visitors coming to our city and traveling through it, Grand Rapids has become a major travel destination. While an increase in tourism is great news for our economy, more users on the roadways can lead to increased congestion and consequently, worsening air quality. However, having readily available transportation options welcomes people to travel to, through, and throughout the city easily to reach their destinations and see what

the area has to offer. Coordinating efforts between tourism, recreation, and transportation can improve the entire system and promote better access and more mobility options in order to make a visit to Grand Rapids as hospitable and accommodating as possible.

Major Attractions

Visitors are attracted to our area for a number of reasons. West Michigan is home to numerous concert venues, sports arenas, colleges, museums, parks, U-Pick farms and orchards, and beaches. Investment in transportation facilities near major attractions can help support their operation or development, and some facilities, such as scenic biking paths, may be an attraction in and of themselves. Highlights of tourism attractions found across the area include:

Arts and Entertainment

Grand Rapids has many attractions for tourists interested in the arts. The city houses Actor's Theater Grand Rapids, Broadway Grand Rapids, the Grand Rapids Ballet, Opera Grand Rapids, and River City Improv. There are numerous venues for performances to take place, such as Circle Theater, the Civic Theater, and the DeVos Performance Hall. Concerts take place at the Van Andel Arena, 20 Monroe Live, or the Intersection. Other attractions include the Urban Institute of Contemporary Arts and five museums: the Grand Rapids Art Museum, the Grand Rapids Children's Museum, the Gerald R. Ford Presidential Museum, the African American Museum and Archives, and the Grand Rapids Public Museum.

ArtPrize is an international art competition that takes place for 19 days every other fall in Grand Rapids. Prizes totaling \$250,000 are awarded based on public votes cast on smartphones. Artists come from all over the world to participate, and art is exhibited in 165+ venues throughout the Grand Rapids area, including museums, bars, public parks, restaurants, theaters and hotels, etc. According to ArtPrize's website, 2018's ArtPrize competition included 1,260+ works created by 1,400+ artists from 41 states and 40 countries. This free public event attracts over 500,000 visitors, making it the most attended public art event in the world in 2014 and 2015, according to The Art Newspaper's annual "Big Ticket List" and ArtPrize.

Sports and Recreation

The area is home to three sports teams, including:

- The West Michigan Whitecaps, a minor league professional baseball team that is an affiliate of the Detroit Tigers. Home games are held at Fifth Third Ballpark in Comstock Park, MI.
- The Grand Rapids Drive, a professional basketball team that is an affiliate of the Detroit Pistons. Home games are held at the DeltaPlex Arena in Grand Rapids
- The Grand Rapids Griffins, a professional hockey team that is an affiliate of the Detroit Red Wings. Home games are held at the VanAndel Arena in downtown Grand Rapids.

For those interested in recreation, the area also offers dozens of golf courses, Cannonsburg Ski Resort, and 38 parks within Kent County alone. Millennium Park, located within Grand Rapids, Walker, Grandville, and Wyoming, covers 1,400 acres of rolling terrain and six miles of frontage on the Grand River. One of our nation's largest urban parks, it includes nearly 18 miles of trails. There are more than 90 miles of trails within Kent County, including multi-use, hiking, biking, bridle paths, cross country skiing, and water. Other opportunities to enjoy outdoor recreation include Blandford Nature Center and Frederik Meijer Gardens and Sculpture Park, which includes numerous scenic walking trails and hosts various artists' work. Lastly, John Ball Zoo in Grand Rapids and Boulder Ridge Wild Animal Park near Alto are home to a variety of animals from around the world.



Visitors looking at an animal exhibit at John Ball Zoo; photo courtesy of Experience Grand Rapids

Beer and Dining

As “Beer City USA,” Grand Rapids is known for its craft beer. In addition to the 80+ breweries on The Beer City Ale Trail, February 15 to March 15 is “Beer Month” in Grand Rapids. During this time, residents and visitors can participate in smaller events such as the annual Michigan Brewers Guild Winter Beer Festival or Cool Brews Hot Eats, where many participating establishments offer pairing specials, giving them an opportunity to experience the countless breweries and restaurants the region has to offer. During Restaurant Week, which takes place in August, restaurants offer specially priced lunch and/or dinner options at over 60 area restaurants that highlight fresh, local ingredients.

Accommodations and Travel

In 2018, the Gerald Ford International Airport exceeded 3 million passengers in one year for the first time in its existence. With the Amtrak line reaching Holland and Chicago, and a Greyhound and Indian Trails station located at Rapid Central Station, visiting has never been this easy or efficient. Investment in public transit systems like The Rapid can also add to visitors’ experiences.



Rapid Central Station; photo courtesy of The Rapid

Process for Determining and Addressing Need

Technical and Policy Committees

GVMC relies on our Technical and Policy Committee members, who work directly with their local communities, to bring identified needs related to tourism through our Committee process for discussion. GVMC also communicates directly with many members of the tourism industry through our consultation and public involvement mailing lists, which gives them the opportunity to voice suggestions or let us know their needs.

Experience Grand Rapids Destination Asset Study

GVMC also is in contact with Experience Grand Rapids, which works to inspire tourism within the area through marketing campaigns and promotions. Their mission is “to strengthen the region’s economic vitality and quality of life by marketing Grand Rapids/Kent County as a preferred visitor destination.”² In 2015, Experience Grand Rapids launched their Destination Asset Study. The study focuses on seven key aspects related to travel and tourism for the city. These include:

- **Convention Center & Hotel Opportunities**
Convention center expansion is considered a priority, and the Grand Rapids-Kent County Convention Arena Authority is proceeding with plans to develop a new 400 room hotel to sit atop DeVos Place Convention center.
- **Attracting Professional Sports**
Efforts are being made to attract a higher profile league soccer team to Grand Rapids, but the biggest obstacle right now is building a champion competition field for the team.
- **Enhancing Amateur Sports Offerings**
Conversations are taking place with the City of Kentwood and Cascade Township about two favorable locations for a Sports Complex, which would include a recommended 12-16 fields and 100+ acres.
- **Leveraging the Grand River**
Efforts are underway to bring the rapids back to the Grand River. GVMC’s environmental department, which includes LGROW, is involved in this effort. The river experience can become a focal point for visitors, which could lead to increased tourism.
- **Outdoor and Adventure Opportunities**
One goal of the study is to establish an interconnected trail system throughout the city and beyond to attract visitors and entice area residents. Marketing and mapping activities are supporting this effort.
- **Downtown Transportation for the Visitor**
The study recommends evaluating recent changes to DASH and Silver Line routes, including working with The Rapid to identify new stop locations for better signage for the DASH. Convenient transportation options for visitors with river access north of downtown is a priority. A bike plan and bike share feasibility study are completed, and the draft is being reviewed by City advisory committees.
- **Destination Awareness, Inclusion, and Diversity**
The study recommends considering measuring destination awareness and perceived strengths and weaknesses among potential future visitors, expanding marketing efforts for outdoor recreation, and supporting community efforts that promote the advancement of minority youth in the hospitality industry.

Travel and tourism, according to the Destination Asset Study, shows a growing interest in downtown Grand Rapids and a need for increased infrastructure to get more visitors to the area. With the number of yearly visitors coming to the Grand Rapids metropolitan area increasing, the need for downtown lodging and easy access to transportation is ever-growing. Through conventions, concerts, and other events, visitors are

² <https://www.experiencegr.com/about-us/>

expected to maintain a consistent presence in the city. Since the creation of the Study, all seven tasks are continually tracked and updated at www.experiencegr.com.

Challenges

Collaboration with Tourism Industry

The tourism industry within our area is very diverse and involves a number of different entities, which can make collaboration difficult. However, many are included on GVMC's consultation and public involvement list in order to invite a two-way discussion during project development.

Managing Congestion

Demand on the transportation system can shift depending on the season, day of the week, holidays, or the timing of special events. For instance, when there are Whitecaps games at Fifth Third Ballpark, traffic can back up significantly on the US-131 West River Drive off ramp. Congestion can lead to safety concerns and more emissions from idling vehicles. It is difficult to manage peak demands that overtax the system for short amounts of time. Encouraging carpooling or shifting to other modes of transportation can help.

Ensuring Accessibility

Maintaining easy access to all facilities during busy travel times can be a challenge. To better understand accessibility issues within our area, GVMC conducted an accessibility analysis in 2017 that assessed regional access to roadway, transit, and nonmotorized transportation networks, as well as accessibility to key destinations, hospitals, colleges, and employment centers, via these transportation systems. This assessment was a first step in an ongoing process involving coordination with transit and community agencies to encourage accessibility.

Supporting Goals and Objectives

Goal 1: Further Develop an Efficient Multi-Modal System

Objective 1b: Promote a balanced transportation system that stimulates and supports long-term economic vitality, travel and tourism, global competitiveness, productivity, and efficiency through directed investments across modes

Preparing for New and Emerging Vehicle Operation and Propulsion Technology



The WAV shuttle in downtown Grand Rapids; photo courtesy of Mobile GR

Highlights:

- Mobile GR is overseeing the Grand Rapids Autonomous Vehicle Initiative, which has brought six self-driving shuttles to downtown Grand Rapids as part of a year-long pilot program
- Ridership on the autonomous WAV shuttle varies from 200 to roughly 500 riders per day, with a daily average of 406 riders and an average of 6,112 riders per month for the first 5 months
- To date, WAV shuttles have given 33,678 total rides and driven 30,559 miles

Overview

Autonomous Vehicle: A vehicle that has features that allow the vehicle to guide itself without human interaction. Examples include cruise control, self-parking, and lane centering. Autonomous vehicles may also be referred to as a driverless vehicle.

Connected Vehicle: A vehicle or a device that communicates with other vehicles and/or other devices alongside the roadway. Examples include in-vehicle navigation and sending/receiving road condition information.

Over the last 20 years, technological advancements have made their way into the transportation system, with dynamic message signs on highways, GPS navigation in vehicles, back-up cameras, blind-spot/lane departure warning systems, and ride-hailing services like Uber and Lyft, which allow passengers to catch a ride in minutes through a smartphone app. Services like OnStar offer automatic crash response, emergency services, roadside assistance and more. And the development of electric vehicles has changed how vehicles are powered and lowered emissions.

Technology continues to evolve at a rapid pace, and technological advancements that were once considered to be futuristic ideas have now become a reality within our area. Companies are testing delivery service by drone. And Mobile GR is overseeing the Grand Rapids Autonomous Vehicle Initiative, which has brought six self-driving shuttles to downtown Grand Rapids as part of a year-long pilot program.

Autonomous vehicle technology offers many possible benefits, including:

- reduced crash rates
- additional mobility options for the elderly, disabled, blind, and those under 16
- reduced energy consumption through more efficient use of the vehicle
- improved time management, both commercially and personally

Furthermore, vehicle fleet changes could affect the capacity of some local roads. Advanced technology may reduce the amount of space required for transportation because if vehicles can travel faster and closer to each other, there is potential to use the road more efficiently. Existing roadways could accommodate higher volume, lanes could be narrower, and medians eliminated, reducing the amount of land required for vehicle movement. Reduced space required for transportation may have great potential to free up land for other high-value uses, particularly in urban areas. Reducing road usage and parking could bring activities closer to each other, mixing land uses, improving accessibility to destinations, and creating a better overall environment. This could increase property values, which would be positive in development and redevelopment of urban communities. However, bringing these types of vehicles to rural areas of the MPO may be challenging, as demand is inconsistent and the length of the trip may be much longer, thus costing more.

While the future isn't certain, it is expected that by 2045, between 20 and 85% of our vehicle fleet will have some level of automation. Most of these vehicles are expected to be connected electric vehicles. A vehicle does not need to be connected to be autonomous, but most new vehicles either currently come, or will come, with both of these features and will continue to do so.

Many factors will impact the percentage of our vehicle fleet that becomes autonomous, including the price of technology and regulations. Planning for the emergence of autonomous and connected vehicle technology will require additional preparation. In coordination with local companies, road agencies, local jurisdictions, and other transportation providers, GVMC will need to conduct additional research, analyze system data, and ensure that the proper infrastructure is in place to manage the demand for new vehicle technology.

According to the Association of Metropolitan Planning Organizations (AMPO), MPOs have an opportunity to be at the forefront of advancements in technology and automation. They state: As vehicle connectivity and automation is deployed, MPOs will work with their partners to explore visions of the desired future of transportation to help understand how vehicle connectivity and automation can help meet regional transportation needs and goals. Through policy development and investment decisions, MPOs can help guide deployment to the desired scenario for the region and nation. They will also have an important role in ensuring all transportation users, including youth, low income, minority, and elderly populations and individuals with disabilities, are provided equal access to the transportation system and the benefits of vehicle connectivity and automation, and do not receive a disproportionate share of any negative consequences. MPOs have the opportunity to help weave vehicle connectivity and automation into the transportation system in a way that is context sensitive to the existing urban fabric and community vision and helps meet regional goals and needs.

Process for Determining and Addressing Need

While advancements in automated vehicle technology are in their infancy stages, GVMC is monitoring the progress of Mobile GR's Grand Rapids Autonomous Vehicle initiative, which has brought six shuttles to the downtown area. These self-driving shuttles with a top speed of 25 miles per hour always have an attendant on board and follow The Rapid's Dash West route. Wheelchair accessible service is also available by texting/calling for a wheelchair accessible AVGR shuttle to be dispatched for customers. If a personal care attendant or other person is accompanying the wheelchair user, a separate shuttle will also be dispatched to that person.

Furthermore, GVMC coordinates with The Rapid in our planning efforts. While supportive of autonomous vehicle technology, The Rapid has indicated there will always be a staff member on every Rapid bus, but that opportunities for driver assist technology may prove to be helpful in the future.



Wheelchair accessible AVGR shuttle; photo courtesy of May Mobility

Challenges

Many challenges exist in integrating autonomous vehicles into our transportation system. These include:

Determining Infrastructure Needs

The vendor for the Grand Rapids Autonomous Vehicle Initiative's shuttles isn't able to determine the vehicle to infrastructure component needed for the shuttles to operate long-term or in other areas. There is therefore no way to determine transportation management for this new technology at this point, which could keep it in a long-term holding pattern. Our current model is also not capable of considering the impact of autonomous vehicles on the system.

Advancements Taking Place on Private Campuses

It is likely that autonomous vehicles will take their next steps in advancement at private campuses, such as industries, warehouses, etc., where there are not on-road regulations in place. Because these advancements will occur outside of the eye of the public sector, it may be difficult to be fully aware of progress that is being made. Companies will need to work with communities to solve issues together. Communities may need to move faster to support innovations, and companies may need to respect the process for achieving desired outcomes for all.

Cybersecurity

According to the National Association of City Transportation Officials (NACTO) Blueprint for Autonomous Urbanism, autonomous vehicles (AVs) "are vulnerable to cyberattacks as hackers and other malicious parties can target the software within AVs or connected vehicle infrastructure to compromise safety." The document explains that the risks of such attacks are local, with the people and infrastructure surrounding the compromised vehicles being vulnerable targets. The Federal Government will need to create strong cybersecurity standards for vehicles and hold manufacturers accountable for breaches to address this threat.

Cost

Connected and autonomous vehicles rely more and more on vehicle-to-vehicle communications rather than vehicle-to-roadside infrastructure communications. Nevertheless, the costs of infrastructure needed to support them may remain significantly high. Roadways, curbs, parking, charging stations, and traffic controllers are just a few examples that may need to be adjusted to meet the new demand of these vehicles.

Freight

According to NACTO's Blueprint for Autonomous Urbanism, "By 2020, the total number of annual packages delivered is expected to increase to 16 billion, up from 11 billion in 2018." Congestion is also on the rise due to growth in urban driving and ride-hail services. If unmanaged, automated vehicles could push congestion to unsustainable levels, causing truck drivers to sit in traffic which would cost billions in additional operations costs. The Blueprint for Autonomous Urbanism recommends cities develop sophisticated urban freight policies that prioritize and group deliveries in order to reduce the number of freight trips, thereby increasing efficiency and safety.

Furthermore, the document addresses delivery drones, which the Federal Aviation Administration began allowing companies to test for commercial use in the US in 2016. Delivery drones in urban areas lead to concerns about noise and questions about jurisdiction, drop-off logistics, and extending management of the public right-of-way to spaces other than streets.

Public Perception and Accessibility

Mobile GR is investigating public perception and accessibility issues related to autonomous vehicles. The Southeast Michigan Council of Governments also conducted a public perception survey in 2017, which indicated that 43% of the public described their comfort level riding in a fully autonomous vehicle as "apprehensive, but would give it a try." The Michigan Department of Transportation (MDOT) also recently conducted a survey for their long-range plan, Michigan Mobility 2045. 542 residents in GVMC's area completed the survey. When asked how they would invest transportation funds in the area, the lowest ranking priority was self-driving technologies. More buy-in and demand from the public may be necessary to make significant advancements in incorporating advanced vehicle technology into the transportation system.

Ensuring Equity

Connected and autonomous vehicles have the potential to benefit those who cannot afford vehicle ownership or cannot drive themselves, including people with disabilities, the elderly, and children. However, all people may not be able to take advantage of connected and autonomous vehicles if they don't have a credit card, smartphone, or internet access. Such obstacles need to be removed for everyone to benefit from new innovations.

Furthermore, NACTO's Blueprint for Autonomous Urbanism points out that "the trucking, taxi, and ride-hail industries employ almost 3 percent of the total American workforce, providing over 4.1 million jobs. People of color are overrepresented in this industry, and automation's potential to displace these workers risk exacerbating financial hardship along racial lines." City governments will need to work to address this to ensure equity as technology changes the ways freight is moved.

Public Involvement Spotlight: What Does the Public Say about Investing in Self-Driving Technologies?

MDOT's recent public survey showed that the public's lowest ranking transportation priority was investing in self-driving technology, or preparing Michigan for self-driving cars. According to MDOT, "most Michigan residents who were surveyed believe self-driving vehicles would have a negative impact or expressed a general lack of understanding about these vehicles. Members of the public also see preparing for self-driving vehicles as a low priority for Michigan relative to other potential transportation investments."

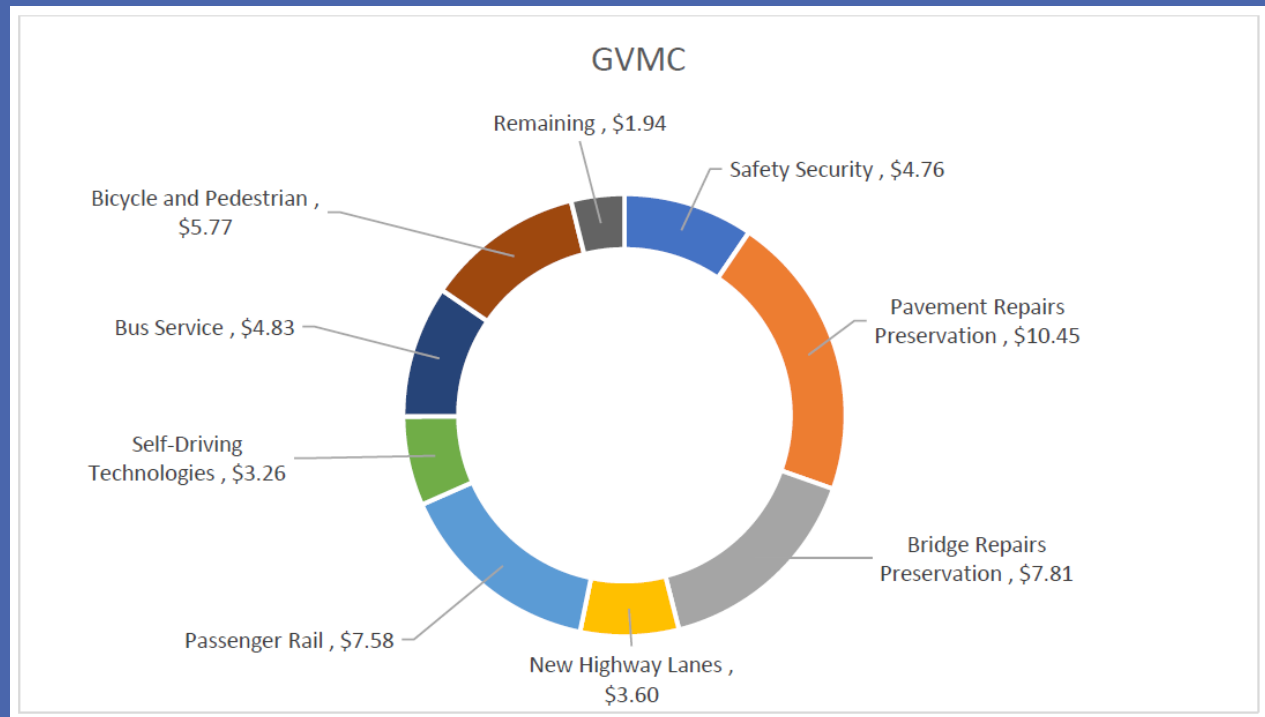


Figure 7: Michigan Mobility 2045 Public Survey Results; Graph courtesy of MDOT

However, this topic is on the public's radar. Here is what one respondent to GVMC's survey had to say: "You certainly should consider the prospect of electric autonomous vehicles of all sorts, and how we are going to accommodate them. They could be cars, scooters, delivery vehicles, etc., but they are likely to occur quickly and without regard to previous statutes, as occurred with Uber/Lyft."

Emerging Issues

Several opportunities have been identified to incorporate autonomous vehicles into the transportation system in the future. These include:

Last-Mile Connectivity

With autonomous vehicle technology advancements anticipated to take place in the private sector, opportunities may exist to connect transit routes with autonomous vehicles that could carry passengers the last mile of their trip to their destination. It will be necessary to coordinate last-mile connectivity options with private campuses making advancements in driverless technology and transit agencies.

Also, the traditional attractions of suburbs and rural areas—larger homes and a lot of green space—have not changed, and will continue to attract households with children. In the future, the difference will be the

amenities available in those areas. When new young generations move from urban centers to suburbs to raise children, they may continue to demand good access to mass transit and walkable neighborhoods in proximity to jobs, shopping, entertainment, and other services. Connected and autonomous vehicles may not replace transit. Instead, they could help resolve last-mile problems by providing better access to transit.

Creating a Connected Corridor through Collaboration

One step in advancing autonomous vehicles could be developing a connected autonomous vehicle corridor, for instance, between select major arterials within a city. It would be necessary to collaborate with regional stakeholders to achieve this.

Reimagining Space

Allocating space for various uses is key to vibrant communities. With autonomous vehicles, curbside space for pick-up and drop-off will become more valuable than parking spaces. Communities will need to evaluate how to redevelop obsolete parking spaces into other uses. Urban design solutions can help. Alleys and off-street loading areas can separate truck deliveries from curbside traffic lanes. Some cities have already set aside space for car-sharing or scooter-sharing. It is inevitable that curbs will be of increasing importance in the future as autonomous vehicles become more common. It could be the most valuable space that a community owns and uses. It needs to be well designed for multiple modes of transportation, including cars and trucks, buses, bikes and pedestrians. Curbs may become the center for connecting multiple modes effectively.

Time

Technology may help communities manage time more effectively. For example, delivery trucks currently arrive at homes and business locations when streets and sidewalks are most crowded. It makes roads more congested and also adds to the costs of e-businesses, shippers, and transportation companies. Street and highway infrastructure, strained beyond intended capacity at peak periods, often has excess capacity off-peak. Cities can encourage use of this capacity in off-peak hours. This should be more feasible, particularly when more delivery vehicles become autonomous.

Supporting Documents

NACTO Blueprint for Autonomous Urbanism

Supporting Goals and Objectives

Goal 1: Further Develop an Efficient Multimodal System

Objective 1e: Prepare for new and emerging operation and propulsion technology in support of the goals and objectives of the Metropolitan Transportation Plan

Chapter 7: Funding the Vision

The Metropolitan Transportation Plan (MTP) is a visionary planning document that identifies current and future transportation needs for the area. The list of projects selected to address these needs must be financially constrained, meaning that the project cost cannot exceed the amount of funding reasonably expected to be available over the life of the plan. GVMC worked in cooperation with FHWA, FTA, MDOT and the Michigan Transportation Planning Association (MTPA) to develop a methodology to forecast future revenues for the GVMC area through 2045 from federal, state and local sources and used that estimate to develop a financially constrained project list included in Chapter 8. This chapter describes the methodology used to forecast future funding as well as revenue sources to demonstrate that the project list is financially constrained. It also provides estimates of the cost of operating and maintaining the transportation system.

Transportation Funding Explained

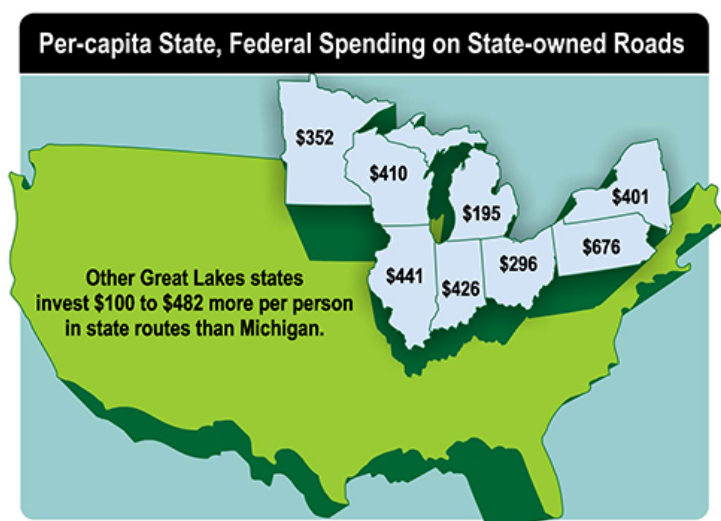
The development and maintenance of the transportation system is primarily financed through gas taxes and vehicle registration fees, which are deposited in the Michigan Transportation Fund (MTF). The distribution of the MTF is administered and distributed in accordance with Public Act 51 of 1951. The gas tax breakdown is as follows:

- The Federal government tax is \$0.184 per gallon on gasoline and \$0.244 per gallon on diesel.
- Michigan state tax is \$0.263 per gallon for both gasoline and diesel.
- The Michigan sales tax rate is 6% on motor vehicle fuel sales, but this does not support transportation.

Michigan drivers pay one of the highest tax levels across the country at the pump, yet Michigan ranks very low in what we invest in our roads compared to other states. This is because taxes paid at the pump also support priorities such as schools, local government, and transit, in addition to the roads³.

Gas taxes are also levied on a fixed per-gallon basis, so as cars have become more fuel efficient, drivers purchase less gas, which generates less revenue. Further, the federal gas tax rate has not increased since 1993 and is not indexed for inflation, so over time the taxes collected lose purchasing power. Prior to the 2015 state road funding package explained in the next paragraph, the state's gas tax, like the federal gas tax, did not adjust with inflation, thus limiting the purchasing power for road maintenance and improvements even further.

Our road conditions reflect this low level of investment, as need has historically outpaced available resources. Further complicating this scenario is that as pavement condition deteriorates, fixes become more costly. As federal gas tax revenues have decreased, local funds and vehicle registration fees have become increasingly important sources of transportation funding. On November 10,



Michigan lags behind neighboring states in spending on state-owned roads; graphic courtesy of MDOT

³ https://www.michigan.gov/documents/mdot/RealityCheckMyth6_473561_7.pdf

2015, Gov. Rick Snyder signed a series of bills as part of a \$1.2 billion road funding package that took effect on January 1, 2017 and achieved the following:

- Increased the state tax by \$0.073 to \$0.263 per gallon
- Increased the annual vehicle registration costs for passenger vehicles and commercial trucks by approximately 20%, with owners of hybrid and electric vehicles paying surcharges and gas taxes on top of their registration fees
- Transferred \$150 million from the state's general fund to highways in fiscal year FY2019
- Transferred \$325 million from the state's general fund to highways in FY2020
- Transferred \$600 million from the state's general fund to highways in FY2020 and subsequent years
- Adjusted the motor fuel tax for inflation by up to 5% annually, starting in January 2022

This is the largest state investment in transportation in Michigan history. Roughly one-third of this funding flows to MDOT and two-thirds to counties, cities and villages. After full phase in, local agencies will see an estimated 60% increase in ACT 51 revenue over their 2015 allocation.⁴ Although this funding package is helping to address Michigan's road funding shortfall, the state still lags behind neighboring states in investment on state-owned and local roads.

Public Involvement Spotlight: What Does the Public Say about Transportation Funding and the State of our Roads?

During the summer of 2019, GVMC conducted a public survey that asked the following question: Do you agree or disagree with the following statement: I would be willing to pay more to improve the transportation system in the region through either a slight increase in the gas tax or a small local millage if the funds raised went directly to improving the transportation system in this area? Overwhelmingly, the public "agreed" or "strongly agreed" with this statement. Here's what one member of the public had to say: *"I am MORE than willing to pay MORE than a slight increase in gas tax. We've pushed it off to long, we NEED it now. I don't have a problem paying \$3-500 more per year to get our roads fixed (and I'm on a fixed income.)"*

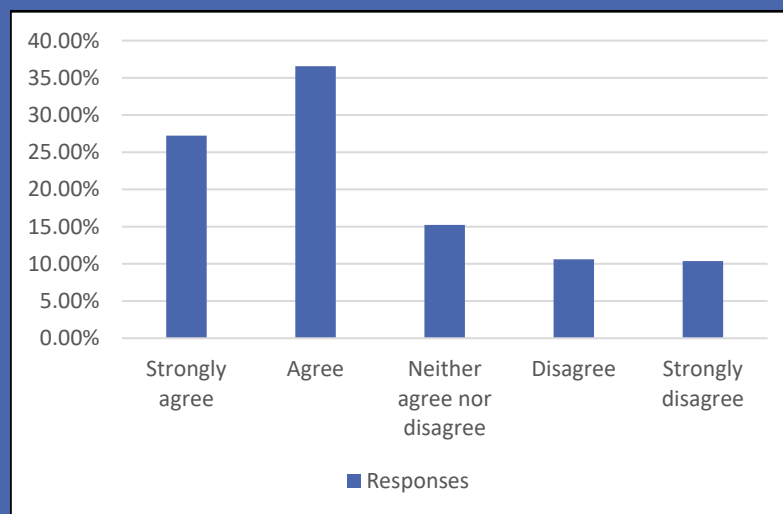


Figure 8: Percentage of residents willing to support a slight increase in the gas tax or a small local millage to support transportation

Gretchen Whitmer was elected governor in 2018 with a campaign promise to fix the roads. In March of 2019, Gov. Whitmer proposed a 45-cent-per-gallon gas tax increase to be phased in over one year which would raise over \$2 billion to fix Michigan roads. In the fall of 2019, the state budget moved forward without Whitmer's 45-cent-per-gallon increase. However, negotiations about how to more fully fund Michigan's crumbling infrastructure are continuing. If successful in achieving additional funding, this could have a substantial positive impact on the state of Michigan's roads.

⁴ https://www.michigan.gov/mdot/0,4616,7-151-9623_10736_66039_66044_66070---,00.html

Federal Transportation Funding Sources

For the most part, Federal transportation funds are flexible, giving state and local governments control over how to best invest in the transportation system. These monies come from fuel taxes, mostly gas and diesel, which are deposited in the Federal Highway Trust Fund (HTF), then apportioned to states through a formula outlined in the current transportation bill, the Fixing America's Surface Transportation (FAST) Act. This funding is then delegated to a number of programs designed to accomplish different objectives, described below.

National Highway Performance Program (NHPP): Funds to support condition and performance on the National Highway System (NHS) and to construct new facilities on the NHS. The National Highway System is the network of the nation's most important highways, including the Interstate and US highway systems. In Michigan, most roads on the National Highway System are state trunk lines (i.e., "I-," "US-," and "M-" roads). However, the NHS also includes all principal arterials (the most important roads after freeways), whether state or locally owned.

Surface Transportation Program (STP): Funds for construction, reconstruction, rehabilitation, resurfacing, restoration, preservation, or operational improvements to federal-aid highways and replacement, preservation, and other improvements to bridges on public roads. Michigan's STP apportionment from the federal government is split in half, half to areas of the state based on population and half that can be used in any area of the state. The GVMC MPO area has special discretion because it is considered a Transportation Management Area (TMA). TMAs are areas of population greater than 200,000 and have a set aside of federal STP funds. In Michigan the entire set aside for TMAs is reserved for spending on local jurisdiction facilities. The funding is distributed to agencies through a competitive process for eligible projects. STP can also be flexed to transit projects. Subcategories include STP Urban, STP Flex, STP Small Urban, and STP Rural categories, as defined below.

- **STP Urban:** These projects include resurfacing, capacity improvements, reconstruction, lane widening, new roads, intersection improvements and corridor studies. Transit projects are also eligible for STP funds.
- **STP Flex:** STP flex is used to fund resurfacing, reconstruction, safety, and expand and improve projects (Ottawa County only in the GVMC MPO area).
- **STP Small Urban:** This program is funded with a state set aside of federal STP funds for urban areas between 5,000 and 50,000 in population. The census defined urbanized area for Lowell (located in eastern Kent County) is currently the only area eligible for these funds in the Grand Rapids metropolitan area.
- **STP Rural:** This program is funded with a state set aside of federal funds. Functionally classified roads outside the urbanized area boundary are eligible for STP-Rural program funds. Transit providers in the rural area are also eligible for these funds for projects such as bus replacement or rehabilitation, communication and maintenance equipment, operational support equipment, and items related to services under the Americans with Disability Act. In Kent County, the Village of Caledonia, the Village of Sand Lake, the Village of Kent City, and the Village of Casnovia are eligible recipients of these road funds. ITP selects transit projects in the rural area from the established specialized services committee, and the Kent County Road Commission represents townships in rural Kent County. Ottawa County projects are selected by the Ottawa County Rural Task Force.

Highway Safety Improvement Program (HSIP): Funds to correct or improve a hazardous road location or feature or address other highway safety problems. Projects can include intersection improvements, shoulder widening; rumble strips, improving safety for pedestrians, bicyclists, or disabled persons; highway signs and markings, guardrails, and other activities. The state of Michigan allocates a portion of the Safety Program funds on the state highway system and distributes the remainder to local agencies through a competitive process.



The Rapid's Rideshare program is funded with CMAQ funds

Congestion Mitigation and Air Quality (CMAQ): Funds intended to reduce emissions from transportation-related sources. GVMC receives these funds because our MPO area was previously classified as a “non-attainment” and later “maintenance” area for the National Ambient Air Quality Standards (NAAQS) for ground-level ozone. These funds can be used for traffic signal retiming, actuations, and interconnects; installing dedicated turn lanes; roundabouts; travel demand management such as rideshare and vanpools, transit, and nonmotorized projects that divert non-recreational travel from single-occupant vehicles. CMAQ

also funds GVMC’s Clean Air Action program. The state of Michigan allocates funding to GVMC based on population. MDOT combines CMAQ funding with other funding sources for operational improvements on the state highway system. CMAQ funding is distributed to local agencies through a competitive process. Up to half of local CMAQ funds go to transit and the remainder is designated to roadway and other eligible projects.

Transportation Alternatives Program (TAP): Funds can be used for a number of activities to improve the transportation system environment, including (but not limited to) nonmotorized projects, preservation of historic transportation facilities, outdoor advertising control, vegetation management in rights-of-way, and the planning and construction of projects that improve the ability of students to walk or bike to school. The funding is split, with 50% being retained by the state, for more significant state/local TAP eligible projects, and 50% going to various areas of the state by population, much like the STP distribution. GVMC’s share of this funding is distributed to local agencies on a competitive basis.

State Transportation Funding Sources

The state law governing the collection and distribution of state highway revenue is Public Act 51 of 1951, commonly known as Act 51. All revenue from these sources is deposited into the Michigan Transportation Fund (MTF). Act 51 contains a number of complex formulas for the distribution of the funding, but essentially, once funding for certain grants and administrative costs are removed, 10% of the remainder is deposited in the Comprehensive Transportation Fund (CTF) for transit, rail, and other non-highway transportation. The MTF is split between the State Trunkline Fund administered by MDOT, county road commissions, and municipalities in a proportion of 39.1%, 39.1%, and 21.8% formula, respectively.

MTF Funds are critical to the operation of the road system in Michigan. Since federal funds cannot be used to operate or maintain the road system (items such as snow removal, mowing grass in the right-of-way, paying the electric bill for street lights and traffic signals, etc.), MTF funds are local communities’ and road commissions’ main source for funding these items. Most federal transportation funding must be matched with 20% non-federal revenue. In Michigan, most “match” funding comes from the MTF. Finally, federal funding cannot be used on local public roads, such as subdivision streets. Here again, MTF is the main source of revenue for maintenance and repair of these roads.

Funding from the MTF is distributed statewide to incorporated cities, incorporated villages, and county road commissions, collectively known as Act 51 agencies. The formula is based on population and public road mileage under each Act 51 agency’s jurisdiction.

Michigan has a number of programs that use both state funding and federal funding. These programs are collectively known as the Transportation Economic Development Fund (TEDF). The TEDF is split into several categories, depending on what that particular category is designed to accomplish. These are:

TEDF Category A: Highway projects to benefit targeted industries

TEDF Category B: Villages and small cities

TEDF Category C: Congestion mitigation in designated urban counties (Kent County only)

TEDF Category D: All-season road network in rural counties (Ottawa County only)

TEDF Category E: Forest roads; and

TEDF Category F: Roads in cities that are located in rural counties

Categories A and F are awarded on a competitive basis, Category B is limited to villages and small cities, and Category E is not awarded for GVMC.

Both Category C and D programs are blends of state and federal funding. Act 51 specifies that \$36.8 million of each year's MTF receipts be directed to the Transportation Economic Development Fund. The state of Michigan funds the TEDF Category C and D programs with additional Surface Transportation Program funding known as STP-Flex.

Local Funding

The cities and county road commissions use MTF allocations ("Act 51 funds") for transportation projects. Cities and villages often allocate additional funding for transportation improvements from sources such as the community's general fund, transportation millages, general obligation bonds, contributions from county governments and other communities, tax increment financing, and special assessment districts. Some communities also accumulate interest on MTF revenue after it has been distributed to them.

The county road commissions supplement their budgets through contributions from townships. Some enter into maintenance agreements with MDOT for work on state trunk lines within the county. Private funds are another source of funding and usually involve developers paying for the construction of access drives or roadways leading to their developments.

Public Transit

Federal revenue for transit comes from federal motor fuel taxes, just as it does for highway projects. Some of the motor fuel tax collected nationwide is deposited in the Mass Transit Account of the Highway Trust Fund (HTF). Federal transit funding is similar to federal highway funding as there are several core programs where money is distributed on a formula basis and other programs that are competitive in nature. Here are brief descriptions of some of the most common federal transit programs:

Section 5307: This is the largest single source of transit funding that is apportioned to Michigan. Section 5307 funds can be used for capital projects, transit planning, and projects eligible under the former Job Access Reverse Commute (JARC) program (intended to link people without transportation to available jobs). Some of the funds can also be used for operating expenses, depending on the size of the transit agency. One percent of funds received are to be used by the agency to improve security at agency facilities. Distribution is based on formulas including population, population density, and operating characteristics related to transit service. Urbanized areas of 200,000 in population or larger receive their own apportionment. Areas between 50,000 and 199,999 population are awarded funds by the governor from the governor's apportionment.

Section 5309: Capital Investment Grants: A discretionary grant program that funds fixed guideway transit capital investments, including heavy rail, commuter rail, light rail, streetcars and bus rapid transit. Federal transit law requires transit agencies seeking Section 5309 funding to complete a series of steps over several years to receive this funding. Locally, The Rapid has used Section 5309 to fund both the Silver Line and Laker Line Bus Rapid Transit projects.

Section 5310: Elderly and Persons with Disabilities: Funding for projects to benefit seniors and disabled persons when service is unavailable or insufficient and transit access projects for disabled persons exceeding Americans with Disabilities Act (ADA) requirements. Section 5310 incorporates the former New Freedom program. The State of Michigan allocates its funding on a per-project basis.

Section 5311: Non-Urbanized Area Formula Grant: Funds for capital, operating, and rural transit planning activities in areas under 50,000 population. Activities under the former JARC program (see Section 5307 above) in rural areas are also eligible. The state must use 15% of its Section 5311 funding on intercity bus transportation. The State of Michigan operates this program on a competitive basis.

Section 5337: State of Good Repair Grants: Funding to state and local governmental authorities for capital, maintenance, and operational support projects to keep fixed guideway systems in a state of good repair. Recipients will also be required to develop and implement an asset management plan. Half of Section 5337 funding will be distributed via a formula accounting for vehicle revenue miles and directional route miles; 50% is based on ratios of past funding received.

Section 5339: Bus and Bus Facilities: Funds will be made available under this program to replace, rehabilitate, and purchase buses and related equipment, as well as construct bus-related facilities including technological changes or innovations to modify low or no emission vehicles or facilities. Each state will receive \$1.75 million, with the remaining funding apportioned to transit agencies based on various population and service factors.

In addition to these funding sources, transit agencies can also apply for Surface Transportation Program and Congestion Mitigation and Air Quality Improvement (CMAQ) program funds. Within GVMC, up to one half of each year's local CMAQ allocation is reserved for transit projects.

Additional Sources of Transit Funding

State Funds: The majority of state-level transit funding is derived from the same source as state highway funding – the state tax on motor fuels. Act 51 stipulates that 10 percent of receipts into the MTF, after certain deductions, is to be deposited in a sub-account of the MTF called the Comprehensive Transportation Fund (CTF). This is analogous to the Mass Transit Account of the Highway Trust Fund at the federal level. Additionally, a portion of the state-level auto-related sales tax is deposited in the CTF. Distributions from the CTF are used by public transit agencies for matching federal grants and also for operating expenses.

Local Funds: Major sources of local funding for transit agencies include fare box revenues, general fund transfers from city governments, and transportation millages. All transit agencies in GVMC's MPO area collect fares from riders.

Revenue Forecast Methodology

Cooperative Revenue Estimation Process

Estimating the amount of funding available for the MTP planning period is a complex process. It relies on a number of factors, including economic conditions, miles travelled by vehicles nationwide and in the State of Michigan, and federal and state transportation funding received in previous years. Revenue forecasting relies on a combination of data and experience and represents a “best guess” of future trends.

The revenue forecasting process is a cooperative effort. The Michigan Transportation Planning Association (MTPA), a voluntary association of public organizations and agencies responsible for the administration of transportation planning activities throughout the state, formed the Financial Working Group (FWG) to develop a statewide standard forecasting process. FWG is comprised of members from the Federal Highway Administration (FHWA), the Michigan Department of Transportation (MDOT), transit agencies, and Metropolitan Planning Organizations, including GVMC. It represents a cross-section of the public agencies responsible for transportation planning in our state. The revenue assumptions in this financial plan are based on the factors formulated by the FWG and approved by the MTPA.

The MDOT Statewide Planning Division affirmed the following growth rates for the 2045 MTP:

2% compounding growth rate for federal revenue forecasting for local revenue
4% annual cost increase for construction project costs

These growth rates are consistent with the current Michigan Long Range Transportation Plan and are used for all financial plans in the state.

Federal Funding Revenues

To determine federal funding by program, GVMC took funding allocations per federal program for FY2020-2023 directly from the FY2020-2023 Transportation Improvement Program (TIP). For 2024 and beyond, GVMC took the funding totals by program from 2023 in the TIP and applied the approved federal growth rate of 2%. GVMC then applied the 2% growth rate factor to every year thereafter, with the exception of the small urban program, as MDOT directed GVMC not to factor in inflation for that program. Competitive programs, such as safety (HSIP funding), were not included in this analysis, as MDOT manages that program, and such grants are not guaranteed.

State Funding Revenues

The state of Michigan maintains an extensive network of highways across the state and within the GVMC Region. All highways with an “I,” “M,” or “US” designation, such as I-96, US-131, or M-6, are part of this network, which is known as the State Trunkline System. The portion of the State Trunkline System in West Michigan is comprised of over 1,024 lane-miles of highway, hundreds of bridges and culverts, signs, traffic signals, safety barriers, sound walls, and other capital that must be periodically repaired, replaced, reconstructed, or renovated. The agency responsible for the State Trunkline System is the Michigan Department of Transportation (MDOT). The amount of funding projected by MDOT to be available for system preservation activities (such as road repaving, rehabilitation, or reconstruction) is shown in the Revenue Forecast tables at the end of the chapter.

To derive these numbers, MDOT Statewide Transportation Planning Division analyzed historical state highway revenue and historical federal obligations. State revenue and federal revenue growth rates were calculated, reviewed and vetted by MDOT leadership, and supplied to GVMC.

Revenue Available for Capital Outlay

Debt service, non-capital uses and routine maintenance are deducted from the estimated federal and state revenue. The resulting FY2020-2045 total estimated revenue available for highway capital outlay is over \$8 billion (in future year dollars).

Methodology for Allocation of Capacity Improvement/New Road Dollars

The MDOT trunkline capacity improvement and new road (CI/NR) projects in the long-range revenue forecast are in the 2020-2024 Five-Year Transportation Program, are usually on corridors of National Significance and have major NEPA document (Environmental Impact Statement or Environmental Assessment) federal approval. The revenue remaining after accounting for the CI/NR projects is available for the state highway preservation projects, which accounts for most of the MDOT expenditures expected over the life of the MTP. Additional CI/NR needs will be shown as Illustrative Projects if funding is not committed at this time. GVMC CI/NR projects are included in the illustrative list of projects in Appendix G. Please refer to Chapter 8, "Investing in the Transportation System," for more information on how CI/NR projects are selected in the GVMC area.

Local Program Revenues

The local program funds consist of local Act 51 revenue estimates which are often supplemented with other local funds, such as general funds, transportation millages, municipal bonds and special assessments. Agencies that receive Act 51 funding include road agencies such as the Kent and Ottawa County Road Commissions, cities, and villages. To determine the amount of local revenue estimated to be available over the life of the MTP, staff reached out to the Act 51 agencies and asked the following:

- (1) How much the agencies anticipated receiving in Act 51 funds over the life of the plan
- (2) How much local funding from other sources the agencies anticipated having available over the life of the plan
- (3) How much the agencies projected spending on operations and maintenance (including snowplowing, crack sealing, etc.)
- (4) How much the agencies projected spending on preservation projects

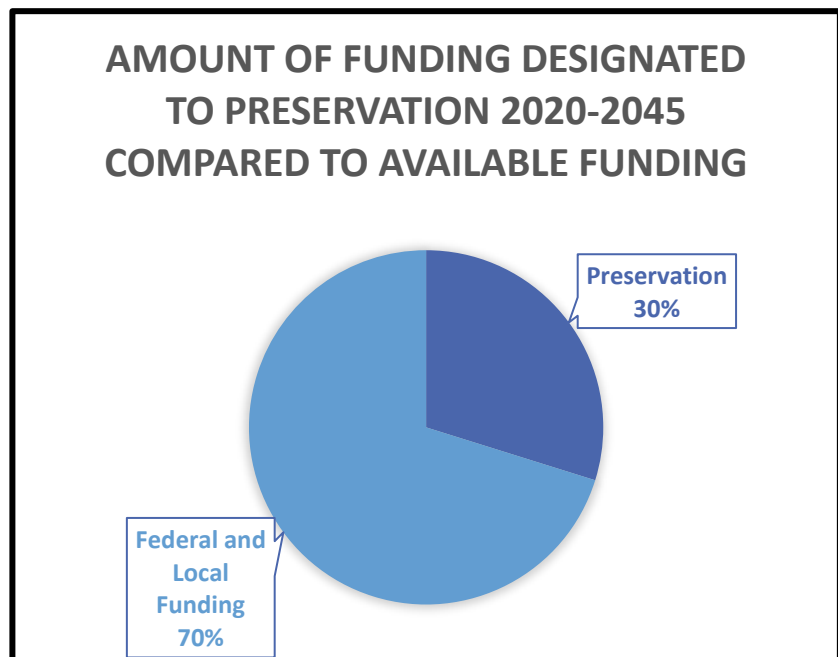


Figure 9: Amount of Funding Currently Designated to Preservation Compared to Available Funding; note: the percentage of preservation funding will likely increase significantly

Many agencies were able to provide estimates for all of these categories, and in these cases, staff used the numbers provided by the local agencies directly in our financial estimate. If an agency was not able to provide data, staff referred to MDOT’s Act 51 allocation estimates for 2020 and 2021⁵ and then applied the 2% inflation factor to 2021 Act 51 fund estimates to derive an estimate for 2022, and continued to apply the 2% inflation factor to every year thereafter. If a community was not able to forecast operations and maintenance expenditures, staff estimated the number to be 33% of their Act 51 funding estimate, since operations and maintenance costs are, on average, 1/3 of the total of most agencies’ Act 51 funds.

The estimates staff received from local agencies and jurisdictions as to the amounts they anticipated spending on preservation are depicted in the chart below.

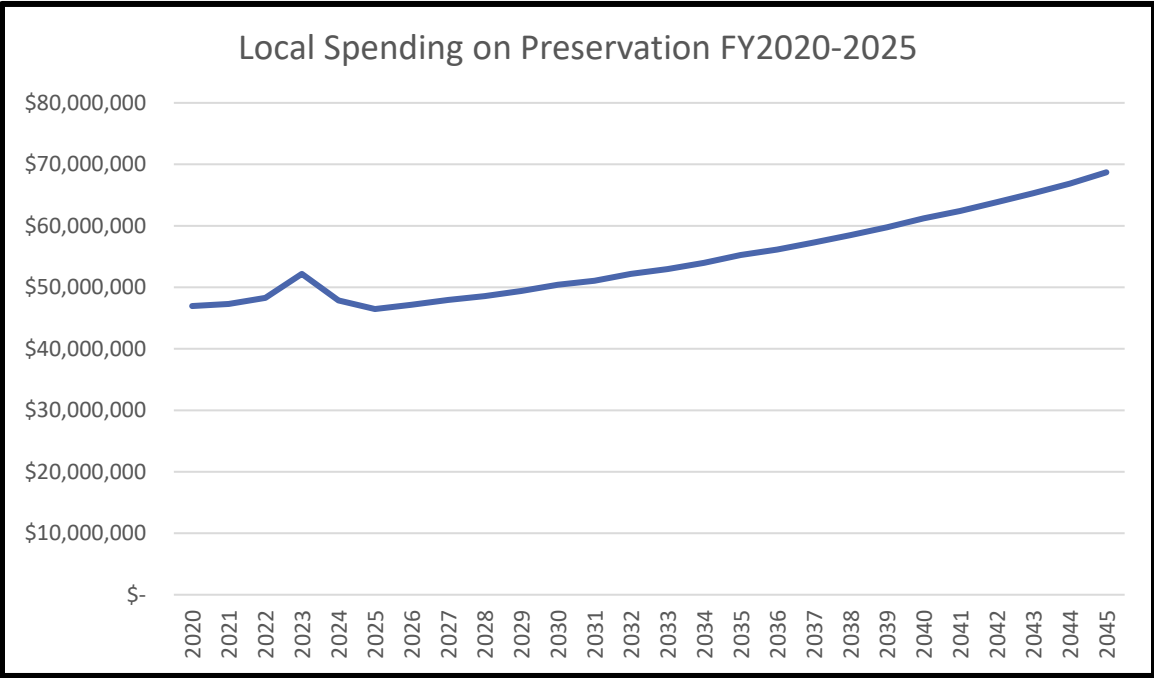


Figure 10: Amount of Funding Allocated to Preservation 2020-2045

Discussion of Innovative Financing Strategies–Highway

A number of innovative financing strategies have been developed over the past two decades to help stretch limited transportation dollars. Some are purely public sector; others involve partnerships between the public and private sectors. Some of the more common strategies are discussed below. Most of these strategies are provided for information only. However, Advance Construct/Advance Construct Conversion is a common strategy that GVMC uses to complete projects before funding is available.

Toll Credits: This strategy allows states to count funding they earn through tolled facilities (after deducting facility expenses) to be used as “soft match,” rather than using the usual cash match for federal transportation projects. Toll credits have been an important source of funding for the State of Michigan in the past because of the three major bridge crossings and one tunnel crossing between Michigan and Ontario. Toll credits have also helped to partially mitigate the funding crisis in Michigan, since insufficient non-federal funding is available to match all of the federal funding apportioned to the state.

⁵ https://www.michigan.gov/mdot/0,1607,7-151-9625_14406_54348---,00.html

State Infrastructure Bank (SIB): Under the SIB program, states can place a portion of their federal highway funding into a revolving loan fund for transportation improvements such as highway, transit, rail, and intermodal projects. Loans are available at 3% interest and a 25-year loan period to public entities. Private and nonprofit corporations developing publicly owned facilities may also apply. In Michigan, the maximum per-project loan amount is \$2 million.

Transportation Infrastructure Finance and Innovation Act (TIFIA): This nationwide program provides lines of credit and loan guarantees to state or local governments for development, construction, reconstruction, property acquisition, and carrying costs during construction. Repayment of TIFIA funding to the federal government can be delayed for up to five years after project completion with a repayment period of up to 35 years. Interest rates are also low.

Bonding: Bonding is borrowing, where the borrower agrees to repay lenders the principal and interest. States are allowed to borrow against their federal transportation funds, within certain limitations. While bonding provides money up front for important transportation projects, it also means diminished resources in future years, as funding is diverted from projects to paying the bonds' principal and interest. Michigan transportation law requires money for the payment of bonds and other debts be taken off the top before the distribution of funds for other purposes. Therefore, the advantages of completing a project more quickly need to be carefully weighed with the disadvantages of reduced resources in future years.

Advance Construct/Advance Construct Conversion: This strategy allows a community or agency to build a transportation project with its own funds (advance construct) and then be reimbursed with federal funds in a future year (advance construct conversion). Tapered match can also be programmed, where the agency is reimbursed over a period of two or more years. Advance construct allows for the construction of highway projects before federal funding is available; however, the agency must be able to build the project with its own resources and then be able to wait for federal reimbursement in a later year.

Public-Private Partnerships (P3): Governments are increasingly turning to public-private partnerships (P3) to fund large transportation infrastructure projects. An example of a public-private partnership is Design/Build/Finance/Operate (DBFO). In this arrangement, the government keeps ownership of the transportation asset, but hires one or more private companies to design the facility, secure funding, construct the facility and operate it, usually for a set period of time. The private-sector firm is repaid most commonly through toll revenue generated by the new facility. Sometimes governments grant exclusive concessions to private firms to operate and maintain already-existing facilities in exchange for an up-front payment from the firm to the government as well. The firm then operates, maintains, and collects tolls on the facility during the period of the concession, betting that it will collect more money in tolls than it paid out in operations costs, maintenance costs, and the initial payment to the government.

Operations and Maintenance

The FAST Act legislation (23 CFR 450.324(h)) requires that the financial plan for the MTP include system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain federal-aid highways and public transportation. For this reason, GVMC collected estimates from the Act 51 implementing road agencies in the Grand Rapids area as well as MDOT for annual operations and maintenance fund allocations. Local operations and maintenance funds are used for items such as snow plowing, mowing, pothole patching, crack sealing, signage, and other expenses deemed necessary to operate and maintain the overall transportation network. Local funds designated for operation and maintenance are not available to be used as a local match for federal transportation dollars. MDOT also has an operations and maintenance budget, and a complete list of eligible operation and maintenance activities are included in the column to the right. The chart below shows projected operation and maintenance expenditures over the life of the plan. A substantial amount of MDOT maintenance funds are provided under contract to KCRC and OCRC. The same growth rates were applied to project operations and maintenance into the future.

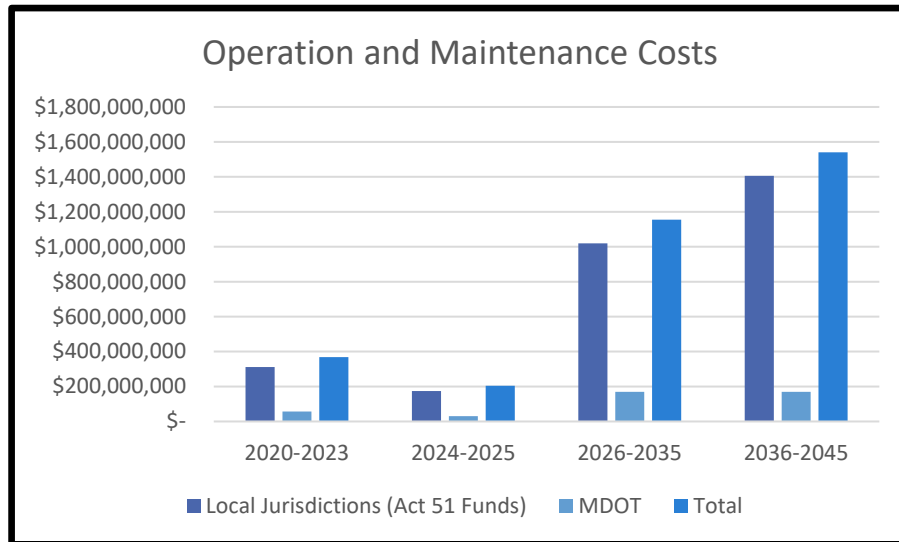


Figure 11: Operations and Maintenance Costs

Operations and Maintenance Costs over the Life of the Plan

Year	Local Jurisdictions (Act 51 Funds)	MDOT	Total
2020-2023	\$311,457,795.69	\$56,754,542.16	\$368,212,337.85
2024-2025	\$174,348,455.24	\$30,108,283.50	\$204,456,738.74
2026-2035	\$1,019,712,821.37	\$169,800,134.00	\$1,189,512,955.37
2036-2045	\$1,405,805,907.20	\$206,985,413.79	\$1,612,791,320.99

MDOT's eligible operations and maintenance activities include:

- Roadway surface maintenance (pot hole filling, crack sealing, etc.)
- Shoulder maintenance
- Tree and shrub removal
- Drainage structure cleaning
- Litter pick-up
- Grass and weed control
- Brush control
- Culvert and underdrain maintenance
- Guardrail repair
- Sweeping and flushing
- Tourist facility maintenance
- Fence repairs
- Winter maintenance (snow plowing, etc.)
- Bridge and structure maintenance
- Sign, attenuator and delineator maintenance
- ITS and TOC operations and maintenance
- Heavy Maintenance (skip-patching, minor resurfacing, etc.)
- Other maintenance-related activities as needed

Determining Funding Estimates

To determine the amount of local funding reasonably expected to be available over the life of the plan, staff added local agencies' Act 51 allocation estimates along with transportation funding from other sources, such as general fund transfers and millages, and then subtracted their operations and maintenance budgets from this total, since operations and maintenance funds cannot be used as the 20% match to leverage funding from federal programs for road projects, such as adding a center turn lane or reconstructing a road. However, the remaining Act 51 and local funds can be used as the 20% match to secure federal funds. The results of the analysis showed that over \$2.8 billion is expected to be available in local funding through 2045 and \$557.6 million in federal funding from programs such as STP, NHPP, and CMAQ. Staff also worked with the state to determine MDOT's anticipated funds for investment in GVMC's MPO area, which totaled an estimated \$3.4 billion. Finally, staff consulted with The Rapid to determine their expected revenues through 2045 from federal sources as well as other revenue streams, such as ticket fare. In total, \$6.8 billion is expected to be available in transportation funding for local, state and federal sources for transportation projects over the next 25 years. With the addition of transit, the number goes up to 10.8 billion.

2045 MTP Revenues

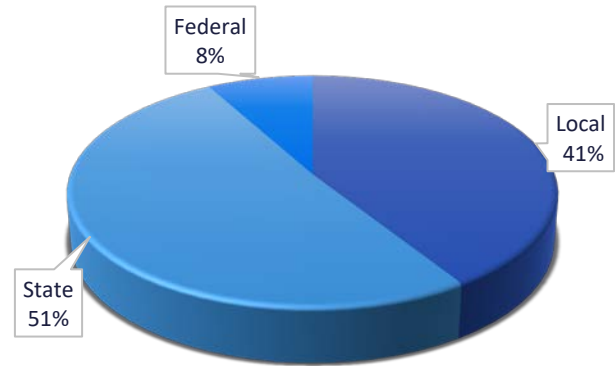


Figure 12: Division of revenues over the life of the MTP, excluding transit

2045 MTP Revenues Including Transit

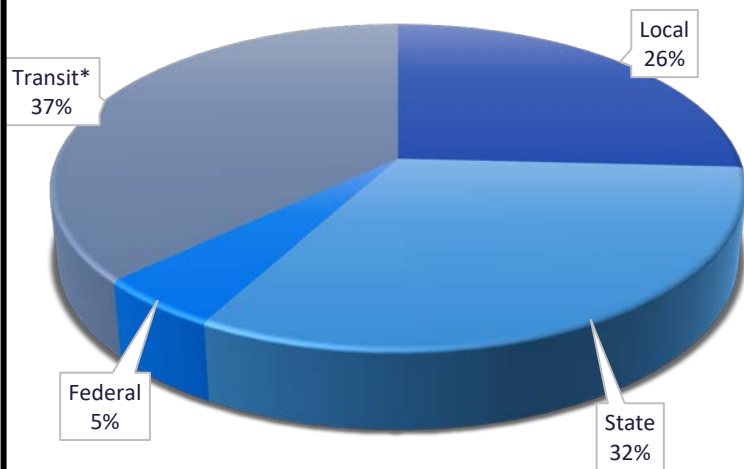


Figure 13: Division of all revenues over the life of the MTP

**Note: Transit revenue includes all sources of revenue, including passenger fares and federal apportionments for transit projects. All sources of transit revenue are described on page 147.*

Transit Revenues

The first five years of the Rapid's capital funding program is based on the Rapid's Capital Improvement Plan. Subsequent years are based on 2% inflation of the fifth year of the Capital Improvement Plan. The Rapid's operational funding was based on 2% inflation of the FY2020 operating budget. In total, over \$4 billion in transit funding is expected over the life of the plan between federal and other revenue sources, such as ticket sales. Including transit funding, \$10.8 billion is expected in funding over the life of the plan. Please consult The Rapid's financial analysis on page 147 for more information.

Expenditure Forecast Methodology

The FAST Act requires that the project costs listed in the MTP are recorded in the year they will be expended (YOE). Revenue estimates from all sources are inflated per prescribed growth rates, and similarly costs must be inflated so that comparisons may be drawn.

The expenditure information for projects in FY2020-2023 comes from the Transportation Improvement Program (TIP) and is understood to be inflated by the jurisdictions that submitted them. For projects that were programmed as part of the MTP development process, GVMC used the inflation rate of 4% recommended by the Michigan Department of Transportation (MDOT).

MDOT YOE project costs for projects that appear in the MTP project list are derived from the annual Financial Plan.

Only those transit projects considered to be financially constrained are included in the MTP project list. Therefore, transit projects included in the Rapid's Transit Master Plan (TMP) are instead listed in the MTP illustrative project list.

In addition to reflecting the inflated project cost estimates in the MTP Project List, the inflated project cost estimates were incorporated into the expenditure table, and estimates of both revenues and expenditures are provided through the year 2045.

All known sources of revenue and estimated project costs have been included in the following financial tables. These tables demonstrate that the total expenditures in the project list do not exceed estimated revenue.

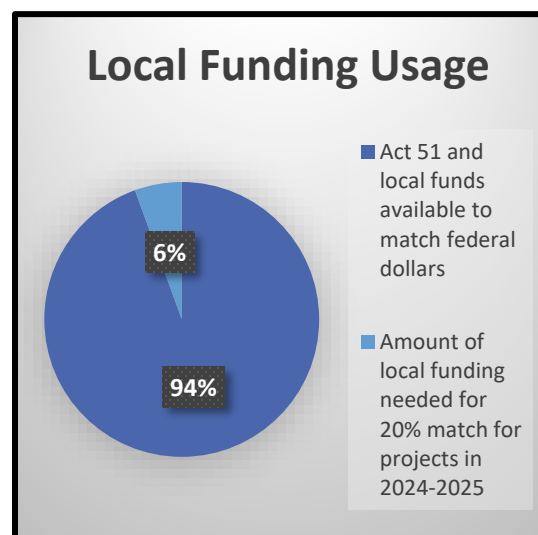
Revenue and Expenditure Table 2020-2023

Federal/State Funded Programs				
Federal Highway MPO Programs Anticipated Funding	Estimated State/Federal Revenue	Local Commitment	Total Revenue	Total Proposed Commitments
STP-Urban	\$37,475,630.00	\$12,471,593.00	\$49,947,223.00	\$49,947,223.00
STP-Flex	\$4,999,000.00	\$1,576,713.00	\$6,575,713.00	\$6,575,713.00
STP Rural	\$3,616,000.00	\$1,584,000.00	\$5,200,000.00	\$5,200,000.00
Small Urban	\$375,000.00	\$420,236.00	\$795,236.00	\$795,236.00
NHPP	\$2,897,000.00	\$745,500.00	\$3,642,500.00	\$3,642,500.00
EDFC	\$7,227,275.00	\$3,084,319.00	\$10,311,594.00	\$10,311,594.00
CMAQ	\$7,419,968.00	\$1,930,400	\$9,350,368.00	\$9,350,368.00
TAP	\$5,736,508.76	\$947,031.00	\$6,683,539.76	\$6,683,539.76
Total:	\$69,746,381.76	\$22,759,792.00	\$92,506,173.76	\$92,506,173.76
Constrained Yes/No				CONSTRAINED

Anticipated Local Funding	
Act 51 and local funds available to match federal dollars*	\$388,816,534.21
Amount of local funding needed for 20% match for projects in 2020-2023	\$22,759,792.00
Local Program Funds Remaining:	\$366,056,742.21

*Operations and maintenance budgets have been subtracted from this total

The table at right shows that only a small fraction of forecasted local funding will go to providing the federal match, which leaves additional funding for local units of government to fund their own projects or to provide the match if additional federal funding becomes available.



State Funding				
Federal Highway Programs— MPO Program Anticipated	Estimated Federal Revenue	State Match Required (80/20 match)	Total Revenue	Total Commitments
MDOT Revenue (Preservation)	\$213,980,194.40	\$53,495,048.60	\$267,475,243	\$267,475,243.00
Operations and Maintenance*		\$56,754,542	\$56,754,542	\$56,754,542
I-96/1-196/M-37/M-44 EA	\$32,424,000.00	\$8,106,000.00	\$40,530,000.00	\$40,530,000
Capacity Improvements	\$25,463,801.60	\$6,365,950.40	\$31,829,752.00	\$31,829,752
Total:	\$271,867,996	\$124,721,541.00	\$396,589,537	\$396,589,537
Constrained Yes/No				CONSTRAINED

*100% state match

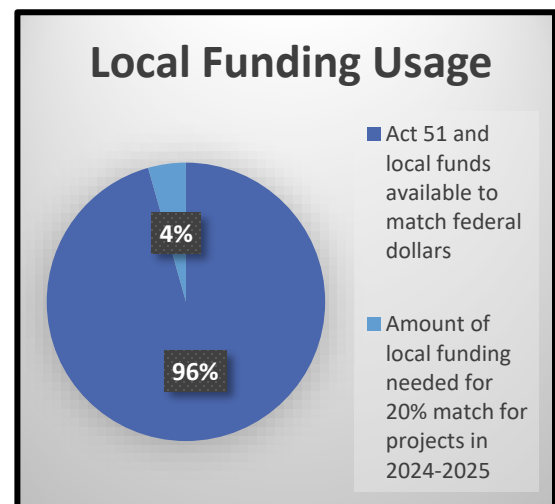
Revenue and Expenditure Table 2024-2025

Federal/State Funded Programs				
Federal Highway MPO Programs Anticipated Funding	Estimated State/Federal Revenue	Local Match Required (20% match)	Total Revenue	Total Proposed Commitments
STP-Urban	\$19,524,350.40	\$4,881,087.60	\$24,405,438.00	\$24,405,438.00
STP-Flex	\$2,651,734.80	\$662,933.70	\$3,314,668.50	\$3,314,668.50
STP Rural	\$1,918,232.40	\$479,558.10	\$2,397,790.50	\$2,397,790.50
Small Urban	\$375,000.00	\$93,750.00	\$468,750.00	\$468,750.00
NHPP	\$1,537,058.40	\$384,264.60	\$1,921,323.00	\$1,921,323.00
EDFC	\$1,998,588.00	\$499,647.00	\$2,498,235.00	\$2,498,235.00
CMAQ	\$5,135,369.81	\$1,283,842.45	\$6,419,212.26	\$6,419,212.26
TAP	\$3,028,521.96	\$865,291.99	\$4,326,459.94	\$4,326,459.94
Total:	\$36,168,855.77	\$9,150,375.44	\$45,751,877.20	\$45,751,877.20
<i>Constrained Yes/No</i>				CONSTRAINED

Anticipated Local Funding	
Act 51 and local funds available to match federal dollars*	\$199,823,365.19
Amount of local funding needed for 20% match for projects in 2024-2025	\$9,150,375.44
Local Program Funds Remaining:	\$190,672,989.75

*Operations and maintenance budgets have been subtracted from this total

The table at right shows that only a small fraction of forecasted local funding will go to providing the federal match, which leaves additional funding for local units of government to fund their own projects or to provide the match if additional federal funding becomes available.



State Funding				
Federal Highway Programs—MPO Program Anticipated	Estimated Federal Revenue	State Match Required (80/20 match)	Total Revenue	Total Commitments
MDOT Revenue (Preservation)	\$109,345,760.80	\$27,336,440.20	\$136,682,201	\$136,682,201
Operations and Maintenance*		\$30,108,283.50	\$30,108,283.50	\$30,108,283.50
Total:	\$109,345,760.80	\$57,444,723.70	\$166,790,484.50	\$166,790,484.50
<i>Constrained Yes/No</i>				CONSTRAINED

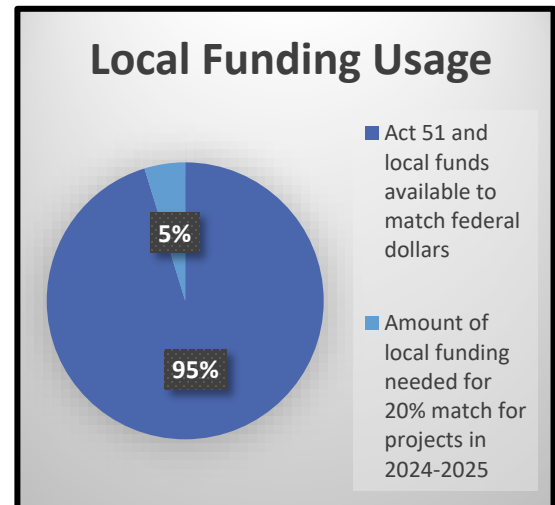
*100% state match

Revenue and Expenditure Table 2026-2035

Federal/State Funded Programs				
Federal Highway MPO Programs Anticipated Funding	Estimated State/Federal Revenue	Local Match Required (20% match)	Total Revenue	Total Proposed Commitments
STP-Urban	\$110,110,471.11	\$27,527,617.78	\$137,638,088.89	\$137,638,088.89
STP-Flex	\$14,954,851.87	\$3,738,712.97	\$18,693,564.84	\$18,693,564.84
STP Rural	\$10,818,156.25	\$2,704,539.06	\$13,522,695.31	\$13,522,695.31
Small Urban	\$1,875,000.00	\$468,750.00	\$2,343,750.00	\$2,343,750.00
NHPP	\$8,668,468.92	\$2,167,117.23	\$10,835,586.14	\$10,835,586.14
EDFC	\$11,271,333.58	\$2,817,833.39	\$14,089,166.97	\$14,089,166.97
CMAQ	\$28,961,680.01	\$7,240,420.00	\$36,202,100.01	\$36,202,100.01
TAP	\$17,079,798.94	\$7,319,913.83	\$24,399,712.78	\$24,399,712.78
Total:	\$203,739,760.67	\$53,984,904.26	\$257,724,664.94	\$257,724,664.94
<i>Constrained Yes/No</i>				CONSTRAINED

Anticipated Local Funding	
Act 51 and local funds available to match federal dollars*	\$1,081,949,937.33
Amount of local funding needed for 20% match for projects in 2026-2035	\$53,984,904.26
Local Program Funds Remaining:	\$1,027,965,033.07

*Operations and maintenance budgets have been subtracted from this total



The table at right shows that only a small fraction of forecasted local funding will go to providing the federal match, which leaves additional funding for local units of government to fund their own projects or to provide the match if additional federal funding becomes available.

State Funding				
Federal Highway Programs—MPO Program Anticipated	Estimated Federal Revenue	State Match Required (80/20 match)	Total Revenue	Total Commitments
MDOT Revenue (Preservation)	\$678,320,943.20	\$169,580,235.80	\$847,901,179	\$847,901,179
Operations and Maintenance*		\$169,800,134.00	\$169,800,134.00	\$169,800,134.00
I-96/1-196/M-37/M-44 EA	\$352,000,000.00	\$88,000,000.00	\$440,000,000.00	\$440,000,000.00
Total:	\$1,030,320,943.20	\$427,380,369.80	\$1,457,701,313.00	\$1,457,701,313.00
<i>Constrained Yes/No</i>				CONSTRAINED

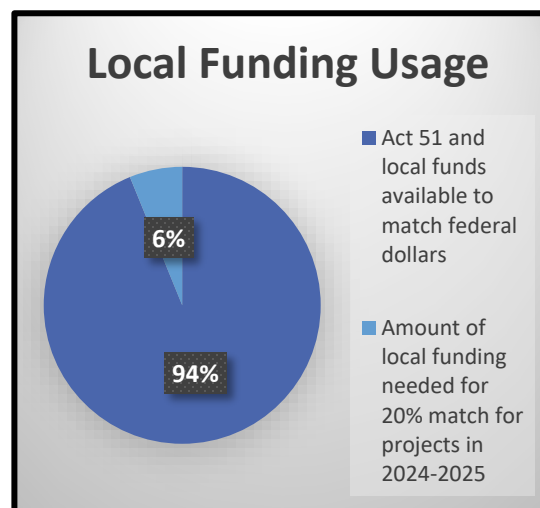
*100% state match

Revenue and Expenditure Table 2036-2045

Federal/State Funded Programs				
Federal Highway MPO Programs Anticipated Funding	Estimated State/Federal Revenue	Local Match Required (20% match)	Total Revenue	Total Proposed Commitments
STP-Urban	\$134,224,049.86	\$33,556,012.47	\$167,780,062.33	\$167,780,062.33
STP-Flex	\$18,229,880.98	\$4,557,470.25	\$22,787,351.23	\$22,787,351.23
STP Rural	\$13,187,272.10	\$3,296,818.03	\$16,484,090.13	\$16,484,090.13
Small Urban	\$1,875,000.00	\$468,750.00	\$2,343,750.00	\$2,343,750.00
NHPP	\$10,566,815.24	\$2,641,703.81	\$13,208,519.05	\$13,208,519.05
EDFC	\$13,739,692.74	\$13,739,692.74	\$15,266,325.26	\$15,266,325.26
CMAQ	\$35,304,126.32	\$8,826,031.58	\$44,130,158	\$44,130,158
TAP	\$20,820,179.61	\$8,922,934.12	\$29,743,113.73	\$29,743,113.73
Total:	\$247,947,016.85	\$76,009,413.00	\$311,743,369.73	\$311,743,369.73
<i>Constrained Yes/No</i>				CONSTRAINED

Anticipated Local Funding	
Act 51 and local funds available to match federal dollars*	\$1,157,844,274.04
Amount of local funding needed for 20% match for projects in 2036-2045	\$76,009,413.00
Local Program Funds Remaining:	\$1,081,834,861.04

*Operations and maintenance budgets have been subtracted from this total



The table at right shows that only a small fraction of forecasted local funding will go to providing the federal match, which leaves additional funding for local units of government to fund their own projects or to provide the match if additional federal funding becomes available.

State Funding				
Federal Highway Programs—MPO Program Anticipated	Estimated Federal Revenue	State Match Required (80/20 match)	Total Revenue	Total Commitments
MDOT Revenue (Preservation)	\$997,220,866.40	\$249,305,216.60	\$1,246,526,083.00	\$1,246,526,083.00
Operations and Maintenance		\$206,985,413.79	\$206,985,413.79	\$206,985,413.79
I-96/1-196/M-37/M-44 EA	\$20,000,000.00	\$5,000,000.00	\$25,000,000.00	\$25,000,000.00
Total:	\$1,017,220,866.40	\$461,290,630.39	\$1,478,511,496.79	\$1,478,511,496.79
<i>Constrained Yes/No</i>				CONSTRAINED

*100% state match

Transit Revenue and Expenditure Table

Transit Expenditures	2020-2023	2024-2025	2026-2035	2036-2045
Operating Expenditures				
Labor and Fringes	\$124,169,701	\$65,872,024	\$371,495,058	\$452,850,400
Services, Casualty/Liability, & Transfers	\$20,691,634	\$10,976,912	\$61,905,923	\$75,462,974
Materials, Supplies, Utilities	\$23,702,329	\$12,574,085	\$70,913,419	\$86,443,061
Purchased Transportation	\$33,523,065	\$17,940,014	\$101,175,373	\$123,332,217
Total Operating Expenses	\$202,086,730	\$107,363,036	\$605,489,768	\$738,088,649
Capital Expenditures				
Bus Maintenance Capital Needs	\$7,728,000	\$3,473,390	\$19,588,698	\$23,878,515
Bus Rapid Transit (BRT) (Laker Line)	\$45,000,000	\$0	\$0	\$0
Facility Expansion/Maintenance Needs	\$7,375,000	\$1,605,900	\$9,056,712	\$11,040,081
IT Capital Needs	\$4,985,000	\$1,515,000	\$8,544,068	\$10,415,170
Replacement of fixed-route buses	\$25,981,711	\$17,549,782	\$98,974,602	\$120,649,486
Replacement of paratransit vehicles	\$4,240,000	\$1,626,100	\$9,170,633	\$11,178,948
Replacement of RapidVan vehicles	\$500,000	\$252,500	\$1,424,011	\$1,735,861
Capitalized Operating Expense	\$9,200,000	\$4,040,000	\$22,784,180	\$27,773,788
Miscellaneous Capital Needs	\$1,411,950	\$777,700	\$4,385,955	\$5,346,454
Total Capital Needs	\$106,421,661	\$30,840,372	\$173,928,859.00	\$212,018,305
Transit Revenues				
Operating Revenues				
Passenger Fares	\$26,457,827	\$14,048,879	\$79,230,736	\$96,581,826
Sale of Transportation Services	\$34,524,894	\$18,458,483	\$104,099,350	\$126,896,528
Property Taxes	\$68,373,290	\$36,272,029	\$204,561,487	\$249,359,312
State Operating Assistance	\$61,736,128	\$32,751,015	\$184,704,206	\$225,153,397
Interest, Advertising, and Misc.	\$2,751,375	\$1,459,605	\$8,231,658	\$10,034,345
Capitalized Operating Expense	\$8,243,216	\$4,373,026	\$24,662,330	\$30,063,240
Total Operating Revenues	\$202,086,728	\$107,363,035	\$605,489,766	\$738,088,646
Capital Revenues				
5307 Federal Apportionments	\$42,968,045	\$22,016,584	\$124,165,796	\$151,357,411
Section 5309 Capital Investment Grants	\$36,000,000	\$0	\$0	\$0
Congestion, Mitigation & Air Quality	\$1,544,000	\$202,000	\$1,139,208	\$1,388,691
5339 Federal Apportionment	\$4,625,285	\$2,453,714	\$13,838,083	\$16,868,547
State Capital Grant Match	\$21,284,332	\$6,168,074	\$34,785,771	\$42,403,661
Total Capital Revenues	\$106,421,661	\$30,840,373	\$173,928,857	\$212,018,309
Total Expenditures	\$308,508,391	\$138,203,408	\$779,418,626	\$950,106,953
Total Revenue	\$308,508,389	\$138,203,408	\$779,418,624	\$950,106,952
Difference	\$0	\$0	\$0	\$0
CONSTRAINED YES/NO				CONSTRAINED

Chapter 8: Investing in the Transportation System

The project list for the 2045 Metropolitan Transportation Plan (MTP) is the culmination of months of work, as all previous milestones in the development of the MTP lead up to this effort. Public input, socio-economic data, goals and objectives, federal performance measures, the results of the modal needs and deficiencies analysis, and the financial analysis are all considered in the project selection process.

There are three steps in developing the project list, which include:

- (1) Determining investment priorities, or where funding should be allocated in order to meet the goals and objectives of the plan, address identified deficiencies, and achieve performance measure targets
- (2) Determining an investment strategy, or how much funding should be allocated in order to meet the goals and objectives of the plan, address identified deficiencies, and achieve performance measure targets
- (3) Using the identified investment priorities and strategy to develop a list of projects that meet the goals and objectives of the plan, address identified deficiencies, and achieve performance measure targets

Each step is described in further detail in the sections that follow.

Determining Investment Priorities

The first step in the creation of the project list for the 2045 Metropolitan Transportation Plan was determining investment priorities. Investment priorities identify areas where future transportation funds should be allocated in order to meet the goals and objectives of the plan, make forward progress in addressing the deficiencies identified during GVMC's analysis, and achieve performance measure targets for safety, system performance, and pavement and bridge condition. Taking into consideration the results of GVMC's needs and deficiencies analyses, the goals and objectives, and public survey data, the MTP Steering Committee began the task of determining investment priorities for the MTP on Thursday, October 17, 2019. Through this meeting, the following priorities were identified, with the rationale as to why they were determined to be a priority below each point:

(1) Maintaining the system in a state of good repair (includes bridge)

- a. Preserving the system is a goal of the 2045 MTP.
- b. Maintaining the system in a state of good repair (pavement and bridge) is a federal performance measure. (GVMC has supported the State's targets to show positive movement in this area.)
- c. Our public survey showed that the public's top priority is improving pavement condition.
- d. Our infrastructure is crumbling, and as repairs are delayed, they become more costly.
- e. Poor pavement condition creates a safety issue for all users of the transportation system.
- f. The need for funding is great: In order to achieve a PASER rating of 5 (fair condition), we would need a 50% increase in the annual budget by the year 2030.

Note: Bridge rehabilitation activities are determined by the state and the locals.

(2) Congestion Management

- a. Enhancing safety and reducing congestion is a goal of the 2045 MTP.
- b. Increasing the percentage of the person-miles traveled on the interstate and non-interstate NHS that are reliable is a federal performance measure, and GVMC supported the State's targets to show positive movement in this area.
- c. Improving the Truck Travel Time Reliability (TTTR) Index is a federal performance measure, and GVMC supported the State's targets to show positive movement in this area.
- d. Our survey showed that the public's second highest priority was using technology to reduce traffic congestion and delays, and the public's third highest priority was widening busy roads and interchanges.
- e. Not all busy roadways can be widened, so as population grows, promoting a transportation mode shift from a single occupancy vehicle (SOV) to transit or active modes of transportation would be beneficial in reducing congestion.
- f. The need for funding is great: Based on the deficiency analysis, there is \$1.02 - \$1.52 billion in identified need to improve congestion in the GVMC region.

(3) Safety

- a. Enhancing safety and reducing congestion is a goal of the 2045 MTP.
- b. Reducing the number and rate of fatalities and serious injuries and nonmotorized fatalities and serious injuries on all public roads is a federal performance measure, and GVMC supported the state's targets to show positive movement in this area.

(4) Nonmotorized

- a. Further developing an efficient multimodal system is a goal of the 2045 MTP.
- b. Ensuring equity, access, and mobility is a goal of the 2045 MTP.
- c. Shifting toward nonmotorized modes of transportation can help alleviate congestion.
- d. The need for funding is great: There is \$80 million in unfunded need for nonmotorized projects in the GVMC region.

(5) Transit

- a. Further developing an efficient multimodal system is a goal of the 2045 MTP.
- b. Transit asset management is a federal performance measure.
- c. Our public survey showed that the public's fourth highest priority is enhancing transit service.
- d. Increasing transit and rideshare usage means less cars on the road and reduced congestion.
- e. The need for funding is great: There is \$615,980,327 in unfunded transit projects on the Rapid's illustrative list of projects. (See Appendix G for The Rapid's complete list of illustrative projects.)

Because data in recent years has shown that pavement conditions in the region are falling and as time passes without funding to address these deficiencies, the system will only continue to deteriorate, and the solution will become increasingly more costly, GVMC determined that the highest investment priority for all available flexible funding is for projects that contribute to maintaining the system in a state of good repair. This is consistent with GVMC's 2040 MTP, and was affirmed by the MTP Steering Committee and later by the Transportation Study Group. However, with this said, increasing the safety of the system is also of utmost importance for all of our members. While it is rare to see a project that is purely safety-related, safety is considered during the design process for all area projects per AASHTO standards. If safety improvements can be made during the design phase, they are.

The remaining priorities—congestion management, nonmotorized, and transit—are also of importance. As our area grows and population increases, we are seeing increased demand upon our roadways. Many of our

busiest roads are constrained by buildings or other landmarks and cannot accommodate additional traffic through widening projects. Therefore, several of our member agencies are emphasizing a mode shift toward nonmotorized transportation or transit in order to alleviate congestion. Reducing the reliance on Single Occupancy Vehicles (SOVs) by developing policies that encourage the use or development of active modes of transportation is a goal of this plan.

Determining an Investment Strategy

Based on GVMC's financial analysis in Chapter 7, \$557.6 million was expected to be available in federal funds for local projects over the life of the Plan. The MPO may use these funds for projects deemed to be of the highest priority for the region as a whole. After developing investment priorities, GVMC tasked the MTP Steering Committee, and later the Transportation Programming Study Group (TPSG), with determining an investment strategy for the plan, meaning how much funding should be allocated toward each of these priorities in order to create meaningful change.

While GVMC staff asked both Committees to debate an amount or percentage of funding to allocate toward each investment priority, both committees expressed a hesitation to do so. The TPSG reflected back on their long track record of working together to select projects based on the greatest regional need at that time during the development of the Transportation Improvement Program (TIP) and felt hesitant of allocating certain funding to specific priorities so far into the future, without the ability of knowing what the greatest regional need may be at that time. Therefore, instead of allocating "bins" of funding toward the investment priorities, the TPSG instead had a meaningful discussion on the fund sources that could be used to fund projects that would address the investment priorities, depending on future need, thereby making improvements toward all. How the investment priorities are to be addressed by fund source is explained below.

Priority	Fund Source
Maintaining the System in a State of Good Repair	<ul style="list-style-type: none"> • STP Funds • STP Flex • NHPP
Congestion Management	<p><i>Expand and Improve Projects:</i></p> <ul style="list-style-type: none"> • STP Funds (Ottawa County Only) • STP Flex (EDFC) Kent County • NHPP <p><i>System Signal Operations and Intersection Improvements</i></p> <ul style="list-style-type: none"> • CMAQ (up to 50% of available funds)
Nonmotorized	<ul style="list-style-type: none"> • All TAP funds
Safety	<ul style="list-style-type: none"> • STP Funds
Transit	<ul style="list-style-type: none"> • CMAQ (up to 50% of all available funds) • FTA funds

Developing the Project List

In order to develop funding categories for each of the fund sources available, revenues were projected through GVMC's financial analysis. Project costs are listed in the year or range of years that they will be expended (YOE), per federal reporting requirements. See Chapter 7 for more information about revenue projections and YOE calculations.

The MTP project lists include projects selected based on the investment strategy recommended by the MTP Steering Committee and the TPSG and help address the deficiencies and investment priorities identified within, and achieve the goals and objectives of, the MTP. Only projects on the federal-aid road network that are considered deficient for pavement condition, congestion, or safety are eligible for local federal funding at this time, per GVMC's Policies and Practices for Programming Projects document, and only expand and improve projects that increase capacity (such as adding a lane) are required to be listed in the MTP.

Committed Projects

The MTP is required to be financially constrained, meaning that the costs of the projects cannot exceed the amount of funding expected to be available. Therefore, only projects with committed funding can be listed. The first four years (2020-2023) of the MTP project list come directly from GVMC's short-range planning document, the Transportation Improvement Program (TIP). These projects have already been selected to receive funding. Beyond 2023, the projects listed address projected transportation capacity deficiencies. These projects are grouped in year ranges and often include unprogrammed bins of funding. For example, for STP-Urban funding, the project line item reads, "Eligible projects to maintain the system in a state of good repair TBD." Discussions will take place in the future to determine which eligible projects will receive funding through this source. The project list also contains line item expenses for funding categories where precise funding levels are not available in advance (CMAQ) or where the funding is competitive (TAP, safety, small urban).



Photo of MDOT's I-96/I-196 Flip project under construction. This project has funding committed in the MTP project list. Photo courtesy of MDOT.

These projects cannot be programmed until the funds are awarded. Once these funds are awarded, the corresponding projects will be amended into GVMC's TIP. The projects in the lists that follow improve accessibility, decrease congestion, increase safety, and help maintain the system in a state of good repair through the year 2045.

Fund sources, along with eligible work per GVMC's policies, are explained in the table below.

Fund Source	Eligible Work
STP-Urban	<ul style="list-style-type: none"> • Reconstruction • Resurfacing • Safety • Planning Studies • Expand and Improve (Ottawa County only) • Other eligible deficiencies
STP FLEX	<ul style="list-style-type: none"> • Reconstruction • Resurface • Safety • Expand and Improve (Kent County only)
STP-Rural	<ul style="list-style-type: none"> • System preservation • Expand and improve
Small Urban	<ul style="list-style-type: none"> • Road and transit capital projects for urban areas between 5,000-49,999 in population (City of Lowell is the only area in GVMC's MPO area that qualifies)
NHPP	<ul style="list-style-type: none"> • Pavement preservation-NHS • Expand and improve-NHS
CMAQ	<ul style="list-style-type: none"> • Signal System Operations • Intersection Improvements • Transit (at least 50% of available funds) • Other eligible projects
EDFC	<ul style="list-style-type: none"> • Eligible projects addressing congestion
TAP	<ul style="list-style-type: none"> • Nonmotorized
FTA	<ul style="list-style-type: none"> • Transit

Unfunded Needs

The MTP project list must be financially constrained, meaning that project costs cannot exceed expected funds. Unfunded needs are included in an illustrative list for future consideration, and these projects can be moved into the Transportation Improvement Program (TIP) and/or Metropolitan Transportation Plan (MTP) when, or if, additional funds become available. The illustrative list for this plan includes many unfunded local, transit, nonmotorized, and MDOT projects.

Project Lists

FY2020-2023 Transportation Improvement Program

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2020	Grand Rapids	Market Ave	various locations	0.001	Signal detection install/upgrades var locations	\$142,000	CM	\$0	\$58,000	\$200,000	Exempt
2020	Grand Rapids	Market Ave	Various	0.001	Signal optimization @ up to 120 Fed aid locations	\$213,000	CM	\$0	\$87,000	\$300,000	Exempt
2020	Grand Rapids	Hall St	Fuller Avenue to Colorado Avenue	0.298	Reconstruction	\$0	STU	\$0	\$100,000	\$100,000	
2020	Grand Rapids	Hall St	Division Avenue to Jefferson Avenue	0.174	Rotomill and Resurface	\$100,000	STU	\$0	\$75,000	\$175,000	Exempt
2020	Grand Rapids	Hall St	Kalamazoo Avenue to Fuller Avenue	0.289	Reconstruction	\$150,000	STU	\$0	\$100,000	\$250,000	
2020	Grand Rapids	Walker Ave	Walker Avenue/Seventh Street - Stocking Avenue to Leonard Street	1.072	Rotomill and Resurface	\$580,000	STU	\$0	\$920,000	\$1,500,000	Exempt
2020	Grand Rapids	Madison Ave	28th Street to Alger Street	0.507	Rotomill and Resurface	\$284,000	STU	\$0	\$71,000	\$355,000	Exempt
2020	Grand Rapids	Alger St	Madison Avenue to Eastern Avenue	0.501	Reconstruction	\$532,000	STU	\$0	\$133,000	\$665,000	
2020	Grand Rapids	Eastern Ave	Ardmore Street to Oakdale Street	0.626	Rotomill and Resurface	\$500,000	STU	\$0	\$125,000	\$625,000	Exempt
2020	Grand Rapids	Lake Dr SE	Lake Drive - Atlas Ave to ECL	0.273	Rotomill and Resurface	\$400,000	STU	\$0	\$100,000	\$500,000	Exempt
2020	Grand Rapids	Division Ave	Wealthy Street to Cherry Street	0.248	Reconstruction	\$127,709	STU			\$127,709	
2020	Grand Rapids	Alger St	Eastern Avenue to Kalamazoo Avenue	0.732	Reconstruction	\$981,250	STU	\$0	\$268,750	\$1,250,000	Exempt
2020	Grand Rapids	Market Ave	Areawide	0.001	Regional Signal System TMS Operations	\$528,000	CM	\$0	\$132,000	\$660,000	Exempt
2020	Grand Rapids	Plainfield Ave NE	Plainfield Ave from I-96 to 390' N or Salerno Dr	0.225	5ft Sidewalk both sides	\$192,499	TAU	\$0	\$304,400	\$496,899	Exempt
2020	Grand Rapids	Madison Ave SE	Alger Street to Burton Street	0.499	Milling and Asphalt Overlay	\$284,000	STU	\$0	\$82,688	\$366,688	Exempt
2020	Grand Rapids	East Paris Avenue SE	East Paris Avenue SE at Burton Street SE, city of Grand Rapids	0.052	Traffic signal modernization	\$162,400	HSIP	\$0	\$40,600	\$203,000	Exempt
2020	Grand Rapids	Fuller Avenue NE	Fuller Ave at Malta, Short, Bradford, and Sweet St, city of Grand Rapids	0.068	Traffic signal modernization, pedestrian hybrid beacon	\$331,155	HSIP	\$0	\$36,795	\$367,950	Exempt
2020	Grand Rapids	Fuller Avenue NE	Fuller Ave at Leonard, Knapp, Averdeen, and 3 Mile Rd, city of Grand Rapids	0.114	Traffic signal modernization	\$476,203	HSIP	\$0	\$52,912	\$529,115	Exempt
2020	Grand Rapids	Leonard St NW	Leonard Street at Scriber Avenue, city of Grand Rapids	0.029	Traffic signal modernization	\$219,600	HSIP	\$0	\$24,400	\$244,000	Exempt
2020	Grand Valley Metropolitan Council	Front Ave	Areawide	0.001	Clean Air Action Days	\$80,000	CM	\$0	\$20,000	\$100,000	Exempt
2020	Grand Valley Metropolitan Council	Areawide	Areawide	0.000	Planning Studies	\$150,000	STU	\$0	\$37,500	\$187,500	Exempt
2020	Grand Valley Metropolitan Council	Areawide	Grand Rapids MPO Area	0.000	FY 2020 Clean Air Action Program	\$80,000	CM	\$0	\$20,000	\$100,000	Exempt
2020	Grand Valley Metropolitan Council	Areawide	Grand Valley Metropolitan Council planning boundary	0.000	Pavement Management, Congestion Management, Transportation GIS	\$149,990	STU	\$0	\$33,260	\$183,250	
2020	Hope Network, Inc.	Transit Operating	Areawide	0.000	Enhanced Mobility of Seniors and individuals with disabilities	\$306,400	5310	\$76,600	\$0	\$383,000	N/A
2020	Interurban Transit Partnership	Ellsworth Ave	Areawide	0.001	Rideshare program	\$165,454	CMG	\$0	\$0	\$165,454	Exempt

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2020	Interurban Transit Partnership	Ellsworth Ave	Areawide	0.001	Free rides on Clean Air Action Days	\$40,000	CM	\$10,000	\$0	\$50,000	Exempt
2020	Interurban Transit Partnership	Ellsworth Ave	Areawide	0.001	4 Replacement VanPool Vans	\$100,000	CM	\$25,000	\$0	\$125,000	Exempt
2020	Interurban Transit Partnership	Ellsworth Ave	Areawide	0.001	Replacement 40' buses/CNG (3)	\$1,070,000	CM	\$267,500	\$0	\$1,337,500	Exempt
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$352,000	5307	\$88,000	\$0	\$440,000	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$1,627,326	5307	\$406,832	\$0	\$2,034,158	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$1,523,200	5307	\$380,800	\$0	\$1,904,000	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$560,000	5307	\$140,000	\$0	\$700,000	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$288,000	5307	\$72,000	\$0	\$360,000	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$561,182	5307	\$140,295	\$0	\$701,477	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$156,000	5307	\$39,000	\$0	\$195,000	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$1,200,000	5307	\$300,000	\$0	\$1,500,000	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$113,560	5307	\$28,390	\$0	\$141,950	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$888,000	5307	\$222,000	\$0	\$1,110,000	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$1,600,000	5307	\$400,000	\$0	\$2,000,000	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Urbanized Area Formula Grants	\$1,200,000	5307	\$300,000	\$0	\$1,500,000	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	Bus and Bus Facilities Program	\$1,122,204	5339	\$280,551	\$0	\$1,402,755	N/A
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY20 CMAQ - Replacement 40 foot buses/CNG (3)	\$1,070,000	CM	\$267,500	\$0	\$1,337,500	Exempt
2020	Interurban Transit Partnership	Transit Operating	Areawide	0.000	FY20 CMAQ - Rideshare Program	\$165,454	CMG	\$0	\$0	\$165,454	Exempt
2020	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY20 CMAQ - 4 replacement vanpool vans	\$100,000	CM	\$25,000	\$0	\$125,000	Exempt
2020	Interurban Transit Partnership	Transit Operating	Areawide	0.000	FY20 CMAQ - Free Rides on Clean Air Action Days	\$40,000	CM	\$10,000	\$0	\$50,000	Exempt
2020	Kent County	Fruit Ridge Avenue	6 Mile Road to 10 Mile Road	4.000	Full depth resurface	\$877,000	STL	\$0	\$323,000	\$1,200,000	Exempt
2020	Kent County	84th St	Division Avenue to Eastern Avenue	0.975	Reconstruct to 3 lane	\$0	EDC	\$1,040,261	\$260,065	\$1,300,326	Conformity Met
2020	Kent County	Segwun Ave SE	South of Segwun Avenue to Grand River Drive	0.347	Widen to 3 Lanes	\$0	EDC	\$713,014	\$178,254	\$891,268	Exempt
2020	Kent County	Spaulding Ave	Ada Drive to Cascade Road	0.450	Reconstruction and Widening	\$640,000	STL	\$0	\$160,000	\$800,000	Conformity Met

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2020	Kent County	84th St	Kalamazoo Avenue to Breton Avenue	1.004	Reconstruction	\$1,120,000	STU	\$0	\$280,000	\$1,400,000	Exempt
2020	Kent County	Burton St SE	Burton St from Patterson Avenue to Highridge Hills Lane (Pvt.), Cascade Twp	0.364	Burton Street Trail from Patterson Avenue to Highridge Hills Lane (Pvt.)	\$1,286,669	TA	\$0	\$692,821	\$1,979,490	Exempt
2020	Kent County	68th St SW	Byron Center Avenue to Burlingame Avenue	1.032	Resurface	\$646,500	EDCF	\$0	\$253,500	\$900,000	Exempt
2020	Kent County	68th St SW	From Burlingame Avenue to Clyde Park Avenue	1.004	Widening from 2 to 3 Lanes	\$566,500	EDCF	\$0	\$233,500	\$800,000	Conformity Met
2020	Kent County	4 Mile Rd NW	4 Mile Road (Yorkland Drive to West River Drive), Alpine Township	0.609	GVMC - 4 Mile Road Sidewalk	\$105,000	TAU	\$0	\$45,000	\$150,000	Exempt
2020	Kent County	Grand River Drive SE	Grand River Drive SE from Snow Avenue to Segwun Avenue	4.606	Two Coarse Ashpalt Resurfacing	\$900,000	STL	\$0	\$300,000	\$1,200,000	Exempt
2020	Kentwood	Burton St	Burton/East Paris Intersection	0.001	Add right turn lanes on NE and NW quads	\$184,600	CM	\$0	\$75,400	\$260,000	Exempt
2020	Kentwood	52nd St	Broadmoor to Patterson Avenue	0.358	Mill and fill	\$500,000	STU	\$0	\$125,000	\$625,000	Exempt
2020	Kentwood	44th St SE	Breton Avenue to Shaffer Avenue	1.002	Mill and Resurface	\$183,000	NH	\$0	\$45,750	\$228,750	Exempt
2020	Kentwood	44th St SE	Breton Avenue to Shaffer Avenue	1.002	Mill and Resurface	\$500,000	STU	\$0	\$481,250	\$981,250	Exempt
2020	MDOT	I-96 EB	I196:US131-I96;I96:Leonard-Cascade;M44:M21-Knapp	10.829	Corridor Study and EA	\$999,643,706	IM	\$97,706,560	\$13,364,963	\$1,007,947,350	Exempt
2020	MDOT	Regionwide	Lake, Barry, Mason, Osceola and Allegan Counties	0.000	Signing Upgrade	\$49,110	ST	\$9,529	\$1,361	\$60,000	Exempt
2020	MDOT	I-196	I-196 EB over M-45 WB ramp	0.000	Deck replacement, beam repairs	\$1,530,000	IM	\$170,000	\$0	\$1,700,000	
2020	MDOT	I-196 EB	I-196 EB over M-45	0.000	Shallow ovrly, substr repr	\$1,530,000	IM	\$170,001	\$0	\$1,700,000	Exempt
2020	MDOT	I-96 WB	At M-21	0.001	I-96 WB Weave-Merge lane and add M-21 WB off ramp	\$1,526,503	CM	\$338,498	\$0	\$1,865,000	Exempt
2020	MDOT	I 96 EB	At M-21	0.001	I-96 EB Weave-Merge lane and add M-21 EB On Ramp	\$286,475	CM	\$63,525	\$0	\$350,000	Exempt
2020	MDOT	Regionwide	Various locations in Grand Region	0.000	2020 WMTOC Control Room Operations	\$713,732	CM	\$158,268	\$0	\$872,000	Exempt
2020	MDOT	Front Ave NW	Various locations in Grand Region	0.000	2020 ITS maintenance & operations in Grand Region	\$806,223	CM	\$178,778	\$0	\$985,000	Exempt
2020	MDOT	I-96	I-96: M-37 east to M-44; I-196 @ M-11 Interchange	2.775	Upgrade to LED	\$5,458	IM	\$530	\$76	\$6,064	Exempt
2020	MDOT	Regionwide	Grand Region	0.000	Overband Crack Fill (FPVS)	\$470,638	NH	\$104,363	\$0	\$575,000	Exempt
2020	MDOT	M-37	Lake Eastbrook Boulevard north to I-96	3.665	Full Depth Concrete Pavement Repairs, ADA Ramps	\$1,327,198	NH,HIPU	\$294,302	\$0	\$1,621,500	Exempt
2020	MDOT	M-37	44th Street north to 32nd Street	1.771	Milling and One Course Asphalt Overlay	\$880,706	NH	\$195,294	\$0	\$1,076,000	
2020	MDOT	Regionwide	Various Locations - Grand Region	0.000	Traffic Signal Modernizations; connected vehicle installations.	\$784,944	STG	\$0	\$0	\$784,944	Exempt
2020	MDOT	I-196	The Grand River east to Lane Avenue	2.501	Concrete Joint Repairs and High Friction Surface Treatment	\$3,870,000	IM	\$430,000	\$0	\$4,300,000	
2020	MDOT	M-37 SB	60th Street to Patterson Avenue (N Junction)	0.666	Extend 3rd lane from 60th St north to Patterson Ave (N Jct)	\$1,517,499	NH	\$321,359	\$15,142	\$1,854,000	Exempt
2020	MDOT	US-131 SB	US-131 SB Over The Grand River & Fulton Street	0.000	Railing Replacement	\$559,445	NH	\$124,056	\$0	\$683,500	Exempt
2020	MDOT	US-131	At the Rockford Rest Area	0.000	Rehabilitate sanitary drain field	\$223,946	ST	\$49,659	\$0	\$273,605	Exempt
2020	MDOT	Regionwide	Regionwide - Grand Region	0.000	Road Weather information Systems	\$193,149	ST	\$42,830	\$0	\$235,979	Exempt

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2020	MDOT	Regionwide	Regionwide - Grand Region	0.000	Road Weather information Systems	\$463,557	ST	\$102,793	\$0	\$566,350	Exempt
2020	MDOT	M-6	M-6 WB and US-131 SB	0.000	Electrical service for six (6) existing VDS	\$50,798	NH	\$11,264	\$0	\$62,062	Exempt
2020	MDOT	US-131	7 locations in Kent County	4.977	ITS camera and VDS installation	\$139,327	NH	\$30,895	\$0	\$170,222	Exempt
2020	MDOT	Grand Regionwide Longitudinal Pavement Markings	All trunkline routes in Grand Region	1.332	Longitudinal pavement marking application in Grand Region	\$592,043	HSIP	\$65,783	\$0	\$657,825	
2020	MDOT	Grand Regionwide Longitudinal Pavement Markings	All trunkline routes in Grand Region	1.332	Longitudinal pavement marking application in Grand Region	\$1,653	HSIP	\$184	\$0	\$1,837	
2020	MDOT	Grand Regionwide Special Pavement Markings	Alltrunkline routes in the Grand Region	3.634	Special marking application on trunkline routes in Grand Region	\$162,068	HSIP	\$18,008	\$0	\$180,075	
2020	MDOT	Grand Regionwide Special Pavement Markings	Alltrunkline routes in the Grand Region	3.634	Special marking application on trunkline routes in Grand Region	\$1,653	HSIP	\$184	\$0	\$1,837	
2020	MDOT	Grand Regionwide Pvmr Mrkg Retro Readings	All trunkline routes in Grand Region	2.113	Pvmt mrkg retroreflectivity readings on trunklines in Grand Region	\$3,749	HSIP	\$417	\$0	\$4,165	
2020	MDOT	TSC wide	Various Locations - Grand Rapids TSC	0.000	Traffic Signal Modernization; connected vehicle installations	\$5,000	STG	\$0	\$0	\$5,000	Exempt
2020	MDOT	I-196	Lane Avenue to US-131	0.902	Detail 8 joint repairs, cold milling and HMA resurfacing	\$621,000	IM	\$69,000	\$0	\$690,000	Exempt
2020	MDOT	I-196	5 structures located along I-196	0.000	Deep Overlay, Deck Patching	\$312,208	IM	\$34,690	\$0	\$346,898	Exempt
2020	Walker	3 Mile Rd	Walker Avenue at 3 Mile Road	0.001	Add dual lefts from EB 3 Mile Road to NB Walker	\$320,000	CM			\$320,000	Exempt
2020	Walker	Three Mile Road	Walker Avenue at 3 Mile Road	0.001	Add dual lefts from EB 3 Mile Road to NB Walker	\$320,000	CM			\$320,000	Exempt
2020	Walker	Sunset Hills Ave NW	Lake Michigan Drive to Jason Ridge Lane	0.604	Resurface	\$320,000	STU	\$0	\$80,000	\$400,000	Exempt
2020	Wyoming	Byron Center Ave	At 44th Street	0.001	Add NB RT Only Lane	\$142,000	CM	\$0	\$58,000	\$200,000	Exempt
2020	Wyoming	Byron Center Ave	South City Limit to 44th Street	2.028	Rotomill and Resurface	\$520,000	NH	\$0	\$130,000	\$650,000	Exempt
2020	Wyoming	Byron Center Ave	South City Limit to 44th Street	2.028	Rotomill and Resurface	\$550,000	STU	\$0	\$140,000	\$690,000	Exempt
2020	Hudsonville	New Holland St	New Holland Street North Side of street, City of Hudsonville	0.274	10' wide Nonmotorized Pathway N of New Holland St, E of Buttermilk Creek	\$151,200	TAU	\$0	\$125,146	\$276,346	Exempt
2020	Hudsonville	32nd Ave	I-196 Bridge to Corporate Grove Drive	0.390	Left Turn Lane	\$280,000	STU	\$0	\$242,346	\$522,346	Exempt
2020	MDOT	I-196 (EB)	West of 32nd Avenue east to East of the Ottawa/Kent County Line	5.303	Reconstruction	\$22,860,000	IM,HIPU	\$2,540,000	\$0	\$25,400,000	
2020	MDOT	I-196	EB & WB over 32nd Avenue; EB over 22nd Avenue	0.000	Deck patch, epoxy overlay, fascia painting	\$328,680	IM	\$36,520	\$0	\$365,200	Exempt
2020	MDOT	I-196	EB & WB over 32nd Avenue; EB over 22nd Avenue	0.000	Deck patch, epoxy overlay, fascia painting	\$0	IM	\$0	\$0	\$0	Exempt
2020	MDOT	I-196	EB & WB over 32nd Avenue; EB over 22nd Avenue	0.000	Deck patch, epoxy overlay, fascia painting	\$0	IM	\$0	\$0	\$0	Exempt
2020	MDOT	I-196	I-196 from 32nd Ave to 44th St.	4.839	Traffic Surveillance Cameras	\$409,250	ST	\$90,750	\$0	\$500,000	Exempt

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2020	MDOT	M-45	120th Avenue east to 68th Avenue	6.095	Milling & One Course Asphalt Overlay	\$659,711	NH	\$146,289	\$0	\$806,000	Exempt
2020	Ottawa County	Adams Street	48th Avenue to 24th Avenue	3.022	Ashpalt Overlay and shoulder widening	\$0	EDD	\$73,179	\$0	\$73,179	Exempt
2020	Ottawa County	Adams Street	48th Avenue to 24th Avenue	3.022	Ashpalt Overlay and shoulder widening	\$1,107,867	STL	\$0	\$268,954	\$1,376,821	Exempt
2020	Ottawa County	Port Sheldon St	44th Street to Main Street	2.493	Resurface	\$620,000	STU	\$0	\$450,000	\$1,070,000	Exempt
2020	Ottawa County	44th St	Chicago Drive to 8th Avenue	1.685	Resurface	\$400,000	STU	\$0	\$440,000	\$840,000	Exempt
2020	Ottawa County	10th Ave and Taylor Street	10th Ave/Golfside to 12th Avenue, Georgetown Twp	0.718	Grand River Greenway Trail Phase III (Cottonwood Drive to Bend Area)	\$260,007	TA	\$0	\$173,338	\$433,345	Exempt
2020	Ottawa County	Riley St	32nd Avenue to 8th Avenue	3.025	Resurface with 3' Paved Shoulders	\$396,000	STU	\$0	\$979,000	\$1,375,000	Exempt
2021	Caledonia	Kinsey Ave SE	Main Street to Maple Street	0.341	Asphalt Reconstruct with sidewalk	\$283,111	STU	\$0	\$91,889	\$375,000	Exempt
2021	Cedar Springs	N Main St NE	N Main Street over Cedar Creek, Str# 5185, City of Cedar Springs	0.000	Bridge Replacement	\$0	MCS	\$1,390,800	\$73,200	\$1,464,000	
2021	East Grand Rapids	Hall St SE	Wilshire Drive to Lake Drive	1.051	Cold Mill HMA Surface and HMA Resurface	\$641,718	STU	\$0	\$208,282	\$850,000	Exempt
2021	Grand Rapids	Hall St	Fuller Avenue to Colorado Avenue	0.298	Reconstruction	\$400,000	STU			\$400,000	
2021	Grand Rapids	Hall St	Kalamazoo Avenue to Fuller Avenue	0.289	Reconstruction	\$250,000	STU			\$250,000	
2021	Grand Rapids	Ottawa Ave	Fulton Street to Michigan Street	0.532	Rotomill and Resurface	\$254,813	STU	\$0	\$100,187	\$355,000	Exempt
2021	Grand Rapids	E Fulton St	Arthur to Wallinwood	0.402	Reconstruction	\$537,910	STU	\$0	\$174,590	\$712,500	Exempt
2021	Grand Rapids	Godfrey Ave SW	Liberty Street to Oxford Street	0.501	Reconstruction	\$358,607	STU	\$0	\$116,393	\$475,000	Exempt
2021	Grand Rapids	Godfrey Ave SW	Oxford Street to Market Avenue	0.553	Asphalt Reconstruct	\$358,607	STU	\$0	\$116,393	\$475,000	Exempt
2021	Grand Rapids	Hall St SE	Colorado Avenue to Sylvan Avenue	0.181	Asphalt Reconstruct	\$377,481	STU	\$0	\$122,519	\$500,000	Exempt
2021	Grand Rapids	Lake Eastbrook Blvd SE	East Beltline to 28th Street	0.799	Asphalt Reconstruct	\$661,782	STU	\$0	\$163,218	\$825,000	
2021	Grand Rapids	Valley Ave NW	4th Street to Walker Avenue	0.520	Asphalt Reconstruction	\$481,288	STU	\$0	\$156,212	\$637,500	Exempt
2021	Grand Rapids	Hall St SE	Sylvan Avenue to 1,275' East of Plymouth Avenue	0.505	Milling and two course asphalt resurfacing	\$245,363	STU	\$0	\$79,637	\$325,000	Exempt
2021	Grand Rapids	Market Ave SW	Market Avenue	0.088	Signal optimization at up to 120 fed aid locations	\$240,000	CM	\$0	\$60,000	\$300,000	Exempt
2021	Grand Rapids	Franklin St SE	Division to East City Limits	1.915	Resurface	\$0	EDCF	\$0	\$119,343	\$119,343	Exempt
2021	Grand Rapids	Franklin St SE	Division to East City Limits	1.915	Resurface	\$672,630	HIPU	\$0	\$400,657	\$1,073,287	Exempt
2021	Grand Rapids	Market Ave SW	Market Avenue	0.055	Regional Signal System TMS Operations	\$264,000	CM	\$0	\$396,000	\$660,000	Exempt
2021	Grand Valley Metropolitan Council	Front Ave NW	GVMC Planning Area	0.000	Planning Studies	\$150,000	STU	\$0	\$37,500	\$187,500	Exempt
2021	Grand Valley Metropolitan Council	Front Ave NW	GVMC MPO Area Kent County	0.000	FY2021 Clean Air Program	\$80,000	CM	\$0	\$20,000	\$100,000	Exempt
2021	Grandville	Wilson Ave SW	Rivertown Parkway to South City Limits	0.642	Milling and Asphalt Resurface	\$218,939	STU	\$0	\$71,061	\$290,000	Exempt
2021	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Replacement 40' Buses/CNG	\$240,000	CM	\$60,000	\$0	\$300,000	Exempt
2021	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Rideshare	\$206,207	CMG	\$0	\$0	\$206,207	Exempt

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2021	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Replacement VanPool Vans	\$100,000	CM	\$25,000	\$0	\$125,000	Exempt
2021	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Free bus rides on Clean Air Action Days	\$60,000	CM	\$15,000	\$0	\$75,000	Exempt
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$112,000	5307	\$28,000	\$0	\$140,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$520,000	5307	\$130,000	\$0	\$650,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$1,509,600	5307	\$377,400	\$0	\$1,887,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$44,000	5307	\$11,000	\$0	\$55,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$72,000	5307	\$18,000	\$0	\$90,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$120,000	5307	\$30,000	\$0	\$150,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$5,653,053	5307	\$1,413,263	\$0	\$7,066,316	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$1,440,000	5307	\$360,000	\$0	\$1,800,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$560,000	5307	\$140,000	\$0	\$700,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$120,000	5307	\$30,000	\$0	\$150,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$16,000	5307	\$4,000	\$0	\$20,000	
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2021 Urban Area Formula Grants	\$104,000	5307	\$26,000	\$0	\$130,000	
2021	Interurban Transit Partnership	Bartlett St SW	Areawide	0.000	FY 2021 Bus/Bus Facilities Grants	\$1,144,648	5339	\$286,162	\$0	\$1,430,810	Exempt
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2021 CMAQ - Transit Capital Improvements	\$240,000	CM	\$60,000	\$0	\$300,000	Exempt
2021	Interurban Transit Partnership	Transit Operating	Areawide	0.000	FY2021 CMAQ - Transit Operating - Rideshare	\$206,207	CMG	\$0	\$0	\$206,207	Exempt
2021	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2021 CMAQ - Transit Capital Improvement	\$100,000	CM	\$25,000	\$0	\$125,000	Exempt
2021	Interurban Transit Partnership	Transit Operating	Areawide	0.000	FY2021 CMAQ - Transit Operating	\$60,000	CM	\$15,000	\$0	\$75,000	Exempt
2021	Kent County	84th St SE	Breton Avenue to Hanna Lake Avenue	0.989	Asphalt Reconstruct	\$981,450	STU	\$0	\$318,550	\$1,300,000	Exempt
2021	Kent County	68th St SE	Hanna Lake Avenue to Kraft Avenue	2.931	Milling and Resurfacing	\$849,332	STU	\$0	\$275,668	\$1,125,000	Exempt
2021	Kent County	Whitneyville Ave SE	I-96 to Cascade Road	0.957	Crush & Shape Asphalt Resurfacing	\$188,740	STU	\$0	\$61,260	\$250,000	Exempt
2021	Kent County	13 Mile Rd NE	Grange Avenue to Edgerton Avenue	2.284	Crush and Shape Resurfacing	\$770,000	EDCF	\$0	\$230,000	\$1,000,000	Exempt
2021	Kent County	7 Mile Rd NW	Alpine Avenue to Pine Island Drive	1.816	Crush and Shape Resurfacing	\$462,000	EDCF	\$0	\$138,000	\$600,000	Exempt
2021	Kent County	S Division Ave	76th Street to 68th Street	1.005	Milling and Asphalt Resurfacing	\$717,000	NH	\$0	\$183,000	\$900,000	Exempt

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2021	Kent County	20 Mile Rd NW	20 Mile Rd NW over Walter Creek, Str# 5037, Kent County	0.000	Miscellaneous Bridge Rehabilitation	\$348,800	BO	\$65,400	\$21,800	\$436,000	Exempt
2021	Kent County	100th St SE	Kalamzaoo Avenue to East 1 Mile	1.403	Reconstruct	\$895,000	STL	\$0	\$305,000	\$1,200,000	Exempt
2021	Kentwood	32nd St SE	Breton Avenue to Shaffer Avenue	1.000	Widen and Reconstruct adding Center Turn Lanes	\$0	EDC	\$1,200,000	\$1,400,000	\$2,600,000	Conformity Met
2021	MDOT	I-196	I-196 WB over Plymouth Avenue	0.000	Bridge replacement, widen, approach replacement	\$2,025,869	IM	\$225,097	\$0	\$2,250,966	
2021	MDOT	I 96 EB	At M-21	0.001	I-96 EB Weave-Merge lane and add M-21 EB On Ramp	\$1,649,278	CM	\$365,723	\$0	\$2,015,000	
2021	MDOT	M-57	Farland Ave East to Ramsdell Dr	2.010	Passing Relief Lanes	\$3,827,700	HSIP	\$425,300	\$0	\$4,253,000	
2021	MDOT	I-96	Thornapple River Drive east to West of Whitneyville Avenue	7.649	Concrete Inlay	\$11,700,000	IM	\$1,300,000	\$0	\$13,000,000	
2021	MDOT	I-96	I-96: M-37 east to M-44; I-196 @ M-11 Interchange	2.775	Upgrade to LED	\$60,032	IM	\$5,836	\$834	\$66,702	Exempt
2021	MDOT	I-196	I-196 EB over The Grand River & I-296 WB (US-131 SB) over I-196 EB	0.000	Deck Repl, Beam repair	\$4,866,530	IM,IPD	\$540,725	\$0	\$5,407,255	
2021	MDOT	Regionwide	Regionwide - Grand	0.000	2021 WMTOC Control Room Operations	\$739,106	CM	\$163,895	\$0	\$903,000	Exempt
2021	MDOT	Regionwide	Regionwide - Grand	0.000	2021 ITS maintenance & operations in Grand Region	\$806,223	CM	\$178,778	\$0	\$985,000	Exempt
2021	MDOT	US-131	US-131 NB and SB	4.104	Queue management system	\$203,400	HSIP	\$22,600	\$0	\$226,000	Exempt
2021	MDOT	US-131 N	US-131 Kent County	43.162	Freeway Signing Update	\$4,000,000	NHG	\$0	\$0	\$4,000,000	
2021	MDOT	US-131	US-131 from North Park St. to 10 Mile Rd.	7.878	ITS devices and infrastructure	\$2,439,348	NH	\$540,918	\$0	\$2,980,266	Exempt
2021	MDOT	Regionwide	Regionwide - Grand Region	0.000	Road Weather information Systems	\$3,193,523	ST	\$708,154	\$0	\$3,901,677	Exempt
2021	MDOT	US-131	7 locations in Kent County	4.977	ITS camera and VDS installation	\$959,804	NH	\$212,834	\$0	\$1,172,638	Exempt
2021	MDOT	Grand Regionwide Longitudinal Pavement Markings	All trunkline routes in Grand Region	1.691	Longitudinal pavement marking application on trunklines in Grand Region	\$650,475	HSIP	\$72,275	\$0	\$722,750	
2021	MDOT	Grand Regionwide Longitudinal Pavement Markings	All trunkline routes in Grand Region	1.691	Longitudinal pavement marking application on trunklines in Grand Region	\$2,205	HSIP	\$245	\$0	\$2,450	
2021	MDOT	Grand Regionwide Special Pavement Markings	All trunkline routes in Grand Region	1.066	Longitudinal pavement marking application on trunklines in Grand Region	\$108,045	HSIP	\$12,005	\$0	\$120,050	
2021	MDOT	Grand Regionwide Special Pavement Markings	All trunkline routes in Grand Region	1.066	Longitudinal pavement marking application on trunklines in Grand Region	\$2,205	HSIP	\$245	\$0	\$2,450	
2021	MDOT	Grand Regionwide Retroreflectivity Readings	All trunkline routes in the Grand Region	3.729	Pavement marking retroreflectivity readings on trunklines in Grand Region	\$3,528	HSIP	\$392	\$0	\$3,920	
2021	MDOT	GR TSC Areawide	GR TSC Areawide	0.000	Asphalt Crack Treatment	\$482,916	ST	\$107,086	\$0	\$590,000	Exempt
2021	MDOT	I-96	M-11 east to Thornapple River Drive	2.869	Concrete Joints Reseal	\$517,500	IM	\$57,500	\$0	\$575,000	Exempt
2021	Sparta	N Union St NW	N Union St NW over Nash Creek, Str# 5233, Village of Sparta	0.000	Miscellaneous Bridge Rehabilitation	\$356,000	BHT	\$66,750	\$22,250	\$445,000	Exempt
2021	Walker	Kinney Ave	Three Mile to Waldorf	0.510	Reconstruct	\$754,962	STU	\$0	\$245,038	\$1,000,000	Exempt

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2021	Walker	Kinney Ave NW	Waldorf Avenue to 3 Mile Road	0.510	Rconstruct & add missing curb and gutter, sidewalk, drainange, all weather	\$755,000	STU	\$0	\$245,000	\$1,000,000	Exempt
2021	Wyoming	Wilson Ave SW	South City Limits to North City Limits	2.979	Resurfacing	\$0	EDC	\$984,000	\$246,000	\$1,230,000	Exempt
2021	Hudsonville	Van Buren St	36th Avenue to City Limits	0.506	Milling and Asphalt Resurface	\$296,700	STU	\$0	\$96,300	\$393,000	Exempt
2021	Ottawa County	48th Ave	Bauer Road to Pierce Street	2.499	Resurface 30 foot width	\$839,895	STU	\$0	\$272,605	\$1,112,500	Exempt
2021	Ottawa County	8th Ave	Jackson Street to Port Sheldon Street	2.286	Resurface 42 Foot Width	\$694,565	STU	\$0	\$225,435	\$920,000	Exempt
2022	Grand Rapids	29th St SE	Breton to East City Limits	0.484	Road Rehabilitation	\$243,536	STU	\$0	\$81,464	\$325,000	Exempt
2022	Grand Rapids	Butterworth St SW	O'Brien to Marion	0.694	road rehabilitation	\$234,170	STU	\$0	\$78,330	\$312,500	Exempt
2022	Grand Rapids	College Ave NE	Leonard to Sweet	0.500	reconstruction	\$725,926	STU	\$0	\$242,824	\$968,750	Exempt
2022	Grand Rapids	Collindale Ave NW	Lake Michigan Drive to Leonard Street	1.003	road rehabilitation	\$327,838	STU	\$0	\$109,662	\$437,500	Exempt
2022	Grand Rapids	S Division Ave	Quigley Street to Cottage Grove Street	0.500	road rehabilitation	\$187,336	STU	\$0	\$62,664	\$250,000	Exempt
2022	Grand Rapids	Eastern Ave SE	36th Street to 28th Street	1.000	Rehab/Reconstruct	\$913,262	STU	\$0	\$305,488	\$1,218,750	Exempt
2022	Grand Rapids	Eastern Ave SE	400' North of 44th Street to 36th Street	0.877	road rehabilitation	\$899,211	STU	\$0	\$300,789	\$1,200,000	Exempt
2022	Grand Rapids	Market Ave SW	Market Avenue	0.088	Signal Optimization	\$240,000	CM	\$0	\$60,000	\$300,000	Exempt
2022	Grand Rapids	Franklin St SE	Division to East City Limits	1.915	Resurface	\$477,370	EDCF			\$477,370	Exempt
2022	Grand Rapids	Division Ave NE	Fountain Street to Michigan Street	0.117	Road Rehabilitation	\$187,336	STU	\$0	\$62,664	\$250,000	Exempt
2022	Grand Rapids	Market Ave SW	Market Ave.	0.080	Regional Signal System TMS Operations	\$264,000	CM	\$0	\$396,000	\$660,000	Exempt
2022	Grand Valley Metropolitan Council	Front Ave NW	GVMC area--Kent and Eastern Ottawa County	0.000	Educational campaign for Clean Air Action program	\$80,000	CM	\$0	\$20,000	\$100,000	Exempt
2022	Grand Valley Metropolitan Council	Front Ave NW	GVMC Planning Area	0.000	Planning Studies	\$150,000	STU	\$0	\$37,500	\$187,500	Exempt
2022	Grandville	Chicago Dr SW	Wilson to east city limits	1.801	Resurface	\$334,630	EDCF	\$0	\$132,370	\$467,000	Exempt
2022	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Replacement 40' Buses/CNG	\$240,000	CM	\$60,000	\$0	\$300,000	Exempt
2022	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Rideshare	\$150,000	CMG	\$0	\$0	\$150,000	Exempt
2022	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Replacement VanPool Vans	\$100,000	CM	\$25,000	\$0	\$125,000	Exempt
2022	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Free Rides on Clean Air Action Days	\$80,000	CM	\$20,000	\$0	\$100,000	Exempt
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$720,000	5307	\$180,000	\$0	\$900,000	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$1,033,306	5307	\$258,326	\$0	\$1,291,632	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$154,998	5307	\$38,749	\$0	\$193,747	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$145,478	5307	\$36,370	\$0	\$181,848	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$3,914,524	5307	\$978,631	\$0	\$4,893,155	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$1,068,814	5307	\$267,204	\$0	\$1,336,018	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$400,000	5307	\$100,000	\$0	\$500,000	

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$960,000	5307	\$240,000	\$0	\$1,200,000	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$8,490	5307	\$2,122	\$0	\$10,612	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$100,478	5307	\$25,120	\$0	\$125,598	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$16,000	5307	\$4,000	\$0	\$20,000	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$40,800	5307	\$10,200	\$0	\$51,000	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$84,897	5307	\$21,224	\$0	\$106,121	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$1,853,393	5307	\$463,348	\$0	\$2,316,741	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$42,710	5307	\$10,678	\$0	\$53,388	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$63,673	5307	\$15,918	\$0	\$79,591	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$76,000	5307	\$19,000	\$0	\$95,000	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$397,469	5307	\$99,367	\$0	\$496,836	
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY 2022 Urbanized Area Formula Grants	\$84,897	5307	\$21,224	\$0	\$106,121	
2022	Interurban Transit Partnership	Bartlett St SW	Areawide	0.000	FY 2022 Bus/Bus Facilities Program	\$995,630	5339	\$248,907	\$0	\$1,244,537	Exempt
2022	Interurban Transit Partnership	Transit Operating	Areawide	0.000	FY22 Rideshare	\$150,000	CMG	\$0	\$0	\$150,000	Exempt
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY22 CMAQ - Replacement 40' Buses/CNG	\$240,000	CM	\$60,000	\$0	\$300,000	Exempt
2022	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY22 CMAQ - Replacement Vanpool Vans	\$100,000	CM	\$25,000	\$0	\$125,000	Exempt
2022	Interurban Transit Partnership	Transit Operating	Areawide	0.000	FY22 CMAQ - Free Rides on Clean Air Action Days	\$80,000	CM	\$20,000	\$0	\$100,000	Exempt
2022	Kent County	84th St SE	Hanna Lake to East Paris	1.008	Reconstruct	\$974,146	STU	\$0	\$325,854	\$1,300,000	Exempt
2022	Kent County	13 Mile Rd NE	Sparta Village Line to Grange	3.480	resurface	\$899,210	STU	\$0	\$300,790	\$1,200,000	Exempt
2022	Kent County	6 Mile Rd NW	Alpine to Pine Island	1.821	resurface	\$749,343	STU	\$0	\$250,657	\$1,000,000	Exempt
2022	Kent County	4 Mile Rd NE	Coit to Plainfield	1.093	Resurface	\$450,000	EDCF	\$0	\$150,000	\$600,000	Exempt
2022	Kent County	Kalamazoo Ave SE	68th to 60th	0.944	resurface	\$731,000	NH	\$0	\$182,750	\$913,750	Exempt
2022	Kent County	68th St SE	Plaster Creek to Hanna Lake Avenue	0.593	Widening	\$0	EDC	\$1,200,000	\$300,000	\$1,500,000	Conformity Met
2022	Kent County	100th St SE	1 Mile East of Kalamazoo Avenue to Hanna Lake	0.607	Reconstruct	\$913,000	STL	\$0	\$337,000	\$1,250,000	Exempt
2022	Kent County	Cascade Rd SE	36th to Whitneyville Avenue	0.813	Widening	\$0	EDC	\$1,120,000	\$280,000	\$1,400,000	Conformity Met
2022	Kentwood	East Paris Avenue SE	28th Street to 36th Street	1.001	Mill and Resurface	\$936,679	STU	\$0	\$313,321	\$1,250,000	Exempt
2022	Kentwood	East Paris Ave SE	East Paris Ave. at 28th St.	0.133	Add right turn lane	\$128,000	CM	\$0	\$32,000	\$160,000	Exempt

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2022	MDOT	I-196 (WB)	M-11 East 0.74 Miles	0.733	Extend Off Ramp	\$2,250,875	CM	\$499,125	\$0	\$2,750,000	
2022	MDOT	regionwide	Regionwide - Grand	0.000	2022 West Michigan TOC Control Room Operations	\$790,671	CM	\$175,329	\$0	\$966,000	
2022	MDOT	Regionwide	Regionwide - Grand	0.000	2022 ITS maintenance & operations in Grand Region	\$818,500	CM	\$181,500	\$0	\$1,000,000	
2022	MDOT	M-11	Church Street east to US-131	4.203	Two Course Asphalt Resurfacing	\$3,274,000	NH	\$665,470	\$60,530	\$4,000,000	Exempt
2022	MDOT	I-96	Burton Street over I-96	0.000	Deep overlay	\$990,504	BOI	\$110,056	\$0	\$1,100,560	Exempt
2022	MDOT	I-296 SB	I-96 EB connector to I-296 SB over West River Drive and CSX RR	0.000	Deep overlay with barrier replacement.	\$1,769,541	IM	\$196,616	\$0	\$1,966,156	
2022	MDOT	I-96	I-96 from Kent Co Line to US-131	25.234	Freeway Signing Upgrade Project	\$14,000	IMG	\$0	\$0	\$14,000	
2022	MDOT	Regionwide	Regionwide freeways	0.000	Freeway Enhanced Delineation	\$44,751	HSIP	\$4,972	\$0	\$49,723	Exempt
2022	MDOT	M-44 E	10 intersections regionwide	0.000	Install traffic signal dilemma zone systems	\$55,450	HSIP	\$6,161	\$0	\$61,611	
2022	MDOT	Grand Regionwide Retroreflectivity Readings	All trunkline routes in Grand Region	2.557	Pavement marking retroreflectivity readings on trunklines in Grand Region	\$3,528	HSIP	\$392	\$0	\$3,920	
2022	MDOT	TSC wide	Various Locations - Grand Rapids TSC	0.000	Traffic Signal Modernization; connected vehicle installations	\$1,955,630	STG	\$0	\$0	\$1,955,630	
2022	MDOT	Grand Regionwide Longitudinal Pavement Markings	All trunkline routes in Grand Region	1.486	Longitudinal pavement marking application on trunklines in Grand Region	\$661,500	HSIP	\$73,500	\$0	\$735,000	
2022	MDOT	Grand Regionwide Longitudinal Pavement Markings	All trunkline routes in Grand Region	1.486	Longitudinal pavement marking application on trunklines in Grand Region	\$2,205	HSIP	\$245	\$0	\$2,450	
2022	MDOT	Grand Regionwide Special Pavement Markings	All trunkline routes in Grand Region	1.845	Special pavement marking application on trunklines in Grand Region	\$185,220	HSIP	\$20,580	\$0	\$205,800	
2022	MDOT	Grand Regionwide Special Pavement Markings	All trunkline routes in Grand Region	1.845	Special pavement marking application on trunklines in Grand Region	\$2,205	HSIP	\$245	\$0	\$2,450	
2022	Wyoming	36th St SW	Burlingame Avenue to Clyde Park Avenue	1.001	resurface	\$562,007	STU	\$0	\$187,993	\$750,000	Exempt
2022	MDOT	I-96	I-96, I-196, and US-131 in Ottawa and Allegan counties	34.885	Rural Freeway Traffic Management systems	\$23,757	NH	\$5,268	\$0	\$29,025	
2022	MDOT	I-96	I-96, I-196, and US-131 in Ottawa and Allegan counties	34.885	Rural Freeway Traffic Management systems	\$57,017	NH	\$12,643	\$0	\$69,660	
2022	Ottawa County	Fillmore St	48th Avenue to Taylor Street	4.450	Resurface/Preservation	\$1,300,000	STU	\$0	\$658,000	\$1,958,000	Exempt
2022	Ottawa County	Leonard St	Leonard St from 68th Ave to 48th Ave	2.650	Asphalt overlay 1-1.5 inches to include HMA resurfacing	\$0	EDD	\$73,179	\$0	\$73,179	Exempt
2022	Ottawa County	Leonard St	Leonard St from 68th Ave to 48th Ave	2.650	Asphalt overlay 1-1.5 inches to include HMA resurfacing	\$703,000	STL	\$0	\$271,421	\$974,421	Exempt
2023	Cedar Springs	S Main St NE	Church Street to 18 Mile Road	0.737	Milling and Two Course Asphalt Resurfacing	\$380,553	STU	\$0	\$103,197	\$483,750	Exempt
2023	Grand Rapids	Ball Ave NE	Leonard Street to Knapp Street	1.002	Milling an Asphalt Overlay (1.5 Inches)	\$427,753	STU	\$0	\$115,997	\$543,750	Exempt

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2023	Grand Rapids	Ball Ave NE	Michigan Street to Plymouth Avenue	0.543	Milling and Two Course Asphalt Resurfacing	\$275,335	STU	\$0	\$74,665	\$350,000	Exempt
2023	Grand Rapids	Fuller Ave NE	Knapp Street to 3 Mile Road	0.989	Milling and Asphalt Overlay (1.5 Inches)	\$427,753	STU	\$0	\$115,997	\$543,750	Exempt
2023	Grand Rapids	Fuller Ave SE	Ramona Street to Adams Street	0.177	Asphalt Reconstruct	\$344,169	STU	\$0	\$93,331	\$437,500	Exempt
2023	Grand Rapids	Ottawa Ave NW	Fairbanks Street to Mason Street and Walbridge Street to Monroe Avenue	0.371	Asphalt Reconstruct	\$712,922	STU	\$0	\$193,328	\$906,250	Exempt
2023	Grand Rapids	Turner Ave NW	6th Street to US-131 SB On Ramp and US-131 SB Off Ramp to Richmond Street	0.813	Milling and Asphalt Overlay (1.5 inches)	\$344,169	STU	\$0	\$93,331	\$437,500	Exempt
2023	Grand Rapids	Wealthy St SE	Ethel Avenue to East City Limit	0.159	Concrete Reconstruction (and Brick)	\$786,672	STU	\$0	\$213,328	\$1,000,000	Exempt
2023	Grand Rapids	Robinson Rd SE	Youell Avenue to Plymouth Avenue	0.407	Reconstruct/Preventative Maintenance	\$344,169	STU	\$0	\$93,331	\$437,500	Exempt
2023	Grand Rapids	Market Ave SW	Market Avenue	0.088	Signal Optimization	\$240,000	CM	\$0	\$60,000	\$300,000	Exempt
2023	Grand Rapids	Market Ave SW	Market Avenue	0.055	Regional Signal System TMS Operations	\$264,000	CM	\$0	\$396,000	\$660,000	Exempt
2023	Grand Valley Metropolitan Council	Front Ave NW	GVMC Planning Area	0.000	Planning Studies	\$150,000	STU	\$0	\$37,500	\$187,500	Exempt
2023	Grand Valley Metropolitan Council	Front Ave NW	GVMC--Kent and Eastern Ottawa County	0.000	Clean Air Action educational campaign	\$80,000	CM	\$0	\$20,000	\$100,000	Exempt
2023	Grandville	Ivanrest Ave SW	Parie Street to 28th Street	0.501	Milling and Asphalt Resurface	\$220,268	STU	\$0	\$59,732	\$280,000	Exempt
2023	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Replacement 40' Buses/CNG	\$240,000	CM	\$60,000	\$0	\$300,000	Exempt
2023	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Rideshare	\$186,207	CMG	\$0	\$0	\$186,207	Exempt
2023	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Replacement VanPool Vans	\$100,000	CM	\$25,000	\$0	\$125,000	Exempt
2023	Interurban Transit Partnership	Bartlett St SW	ITP-The Rapid	0.000	Free rides on Clean Air Action Days	\$80,000	CM	\$20,000	\$0	\$100,000	Exempt
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$400,000	5307	\$100,000	\$0	\$500,000	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$960,000	5307	\$240,000	\$0	\$1,200,000	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$16,000	5307	\$4,000	\$0	\$20,000	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$1,070,910	5307	\$267,728	\$0	\$1,338,638	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$66,245	5307	\$16,561	\$0	\$82,806	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$1,587,265	5307	\$396,816	\$0	\$1,984,081	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$86,594	5307	\$21,649	\$0	\$108,243	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$3,248,266	5307	\$812,066	\$0	\$4,060,332	

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$49,810	5307	\$12,452	\$0	\$62,262	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$720,000	5307	\$180,000	\$0	\$900,000	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$43,565	5307	\$10,891	\$0	\$54,456	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$1,040,372	5307	\$260,093	\$0	\$1,300,465	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$8,659	5307	\$2,165	\$0	\$10,824	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$405,418	5307	\$101,355	\$0	\$506,773	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$209,716	5307	\$52,429	\$0	\$262,145	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$86,594	5307	\$21,649	\$0	\$108,243	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$148,388	5307	\$37,097	\$0	\$185,485	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$77,046	5307	\$19,262	\$0	\$96,308	
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY2023 Urbanized Area Formula Grants	\$120,382	5307	\$30,095	\$0	\$150,477	
2023	Interurban Transit Partnership	Transit capital	Areawide	0.000	FY 2023 Bus/Bus Facilities Program	\$1,010,564	5339	\$252,641	\$0	\$1,263,205	Exempt
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY23 CMAQ - Replacement 40' Buses/CNG	\$240,000	CM	\$60,000	\$0	\$300,000	Exempt
2023	Interurban Transit Partnership	Transit Operating	Areawide	0.000	FY23 CMAQ - Rideshare	\$186,207	CMG	\$0	\$0	\$186,207	Exempt
2023	Interurban Transit Partnership	Transit Capital	Areawide	0.000	FY23 CMAQ - Replacement VanPool Vans	\$100,000	CM	\$25,000	\$0	\$125,000	Exempt
2023	Interurban Transit Partnership	Transit Operating	Areawide	0.000	FY23 CMAQ - Free Rides on Clean Air Action Days	\$80,000	CM	\$20,000	\$0	\$100,000	Exempt
2023	Kent County	84th St SE	Patterson Avenue to East Paris Avenue	0.999	Asphalt Reconstruct	\$1,062,008	STU	\$0	\$287,992	\$1,350,000	Exempt
2023	Kent County	Buttrick Ave SE	Thornapple River Drive to Grand River Drive	0.476	Crush and Shape Resurfacing	\$236,002	STU	\$0	\$63,998	\$300,000	Exempt
2023	Kent County	Northland Dr NE	13 Mile Road to 14 Mile Road	1.224	Mill, Fill, and Resurface	\$0	EDC	\$936,614	\$240,000	\$1,176,614	Exempt
2023	Kent County	Northland Dr NE	12 Mile Road to 13 Mile Road	1.004	Mill and Fill Resurface	\$0	EDC	\$720,000	\$180,000	\$900,000	Exempt
2023	Kent County	100th St SE	Hannah Lake to East Paris Avenue	1.002	Reconstruct	\$931,000	STL	\$0	\$319,000	\$1,250,000	Exempt
2023	Kentwood	52nd St SE	Kalamazoo Avenue to Breton Avenue	1.502	3.5" Milling and Resurface	\$1,455,344	STU	\$0	\$394,656	\$1,850,000	Exempt
2023	MDOT	I-96	Cascade Road east to M-11	3.025	Two Course Asphalt Resurfacing	\$4,230,000	IM	\$470,000	\$0	\$4,700,000	Exempt
2023	MDOT	I-96	Fruit Ridge Road Over I-96	0.000	Deep Overlay	\$1,337,063	IM	\$148,563	\$0	\$1,485,626	Exempt
2023	MDOT	I-196BS E	3 Bridges on I-196 Ramp Corridor from I-196 to Chicago Drive	0.000	Deep Overlay	\$1,341,802	NH	\$297,541	\$0	\$1,639,343	
2023	MDOT	Regionwide	Regionwide	0.000	2023 West Michigan TOC Control Room Operations	\$827,504	CM	\$183,497	\$0	\$1,011,000	Exempt
2023	MDOT	Regionwide	Regionwide	0.000	2023 ITS maintenance and operations in Grand Region	\$900,350	CM	\$199,650	\$0	\$1,100,000	Exempt

Fiscal Year	Responsible Agency	Project Name	Limits	Length	Project Description	Federal Cost	Federal Fund Source	State Cost	Local Cost	Total Budget Amount	Air Quality
2023	MDOT	US-131	US-131 NB and SB	4.104	Queue management system	\$1,195,203	HSIP	\$132,800	\$0	\$1,328,003	Exempt
2023	MDOT	Regionwide	Regionwide freeways	0.000	Freeway Enhanced Delineation	\$492,256	HSIP	\$54,695	\$0	\$546,951	Exempt
2023	MDOT	M-44 E	10 intersections regionwide	0.000	Install traffic signal dilemma zone systems	\$345,020	HSIP	\$38,336	\$0	\$383,355	
2023	MDOT	Grand Regionwide Longitudinal Pavement Markings	All trunkline routes in Grand Region	1.845	Longitudinal pavement marking application on trunklines in Grand Region	\$661,500	HSIP	\$73,500	\$0	\$735,000	
2023	MDOT	Grand Regionwide Longitudinal Pavement Markings	All trunkline routes in Grand Region	1.845	Longitudinal pavement marking application on trunklines in Grand Region	\$2,205	HSIP	\$245	\$0	\$2,450	
2023	MDOT	Grand Regionwide Special Pavement Markings	All trunkline routes in Grand Region	1.845	Special pavement marking application on trunklines in Grand Region	\$119,070	HSIP	\$13,230	\$0	\$132,300	
2023	MDOT	Grand Regionwide Special Pavement Markings	All trunkline routes in Grand Region	1.845	Special pavement marking application on trunklines in Grand Region	\$2,205	HSIP	\$245	\$0	\$2,450	
2023	MDOT	Grand Regionwide Retroreflectivity Readings	All trunkline routes in Grand Region	2.971	Pavement marking retroreflectivity readings on trunklines in Grand Region	\$3,528	HSIP	\$392	\$0	\$3,920	
2023	MDOT	M-57	Northland Dr to Farland Ave	3.917	Shoulder Paving with Shoulder Rumble Strips	\$200,700	HSIP	\$22,300	\$0	\$223,000	Exempt
2023	Rockford	Courtland St NE	Courtland/Northland from Monroe to Wolverine	0.887	Resurface	\$373,669	STU	\$0	\$631,331	\$1,005,000	Exempt
2023	Walker	Alpine Ave NW	Ann Street to Hillside Drive	0.503	Milling and Resurface	\$629,338	STU	\$0	\$170,662	\$800,000	Exempt
2023	Wyoming	Gezon Pkwy SW	Byron Center Avenue to Clyde Park Avenue	2.170	Resurface	\$98,334	STU	\$0	\$26,666	\$125,000	Exempt
2023	Wyoming	Gezon Pkwy SW	Byron Center Avenue to Clyde Park Avenue	2.170	Resurface	\$1,280,000	EDCF	\$0	\$320,000	\$1,600,000	Exempt
2023	Wyoming	54th St SW	Clyde Park Avenue to Division Avenue	1.005	Resurface	\$746,000	NH	\$0	\$204,000	\$950,000	Exempt
2023	Wyoming	54th St SW	Clyde Park Avenue to Division Avenue	1.005	Resurface	\$440,536	STU	\$0	\$119,464	\$560,000	Exempt
2023	Hudsonville	32nd Ave	32nd Avenue	0.209	Left Turn Lane	\$160,000	CM	\$0	\$40,000	\$200,000	Exempt
2023	MDOT	I-196	Byron Road east to 32nd Avenue	6.674	Reconstruction	\$10,206,000	IM	\$1,134,000	\$0	\$11,340,000	
2023	MDOT	M-6	Grand Rapids/South Beltline W	0.000	Cold milling and one course asphalt overlay.	\$65,481	ST	\$14,521	\$0	\$80,000	Exempt
2023	Ottawa County	18th Ave	Chicago Drive to Bauer Road	2.313	Asphalt Resurface	\$767,005	STU	\$0	\$207,995	\$975,000	Exempt

FY2024-2025 Project List

FY2024-2025 STP Urban									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible projects to maintain the system in a state of good repair TBD			Various		\$24,405,438.00	\$19,524,350.40	\$4,881,087.60	TBD	
Total Available:					\$24,405,438.00	\$19,524,350.40	\$4,881,087.60		
Total Cost:					\$24,405,438.00	\$19,524,350.40	\$4,881,087.60		
Total Remaining:					\$0	\$0	\$0		

FY2024-2025 STP Flex									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible reconstruction, resurface, and expand and improve projects TBD			Various		\$3,314,668.50	\$2,651,734.80	\$662,933.70	TBD	
Total Available:					\$3,314,668.50	\$2,651,734.80	\$662,933.70		
Total Cost:					\$3,314,668.50	\$2,651,734.80	\$662,933.70		
Total Remaining:					\$0	\$0	\$0		

FY2024-2025 STP Rural									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible rural projects TBD			Various		\$2,397,790.50	\$1,918,232.40	\$479,558.10	TBD	
Total Available:					\$2,397,790.50	\$1,918,232.40	\$479,558.10		
Total Cost:					\$2,397,790.50	\$1,918,232.40	\$479,558.10		
Total Remaining:					\$0	\$0	\$0		

FY2024-2025 STP Small Urban									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible small urban project TBD			City of Lowell		\$468,750.00	\$375,000.00	\$93,750.00	TBD	
Total Available:					\$468,750.00	\$375,000.00	\$93,750.00		
Total Cost:					\$468,750.00	\$375,000.00	\$93,750.00		
Total Remaining:					\$0	\$0	\$0		

FY2024-2025 NHPP									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible pavement preservation projects-NHS-TBD			Various		\$1,921,323.00	\$1,537,058.40	\$384,264.60	TBD	
Total Available:					\$1,921,323.00	\$1,537,058.40	\$384,264.60		
Total Cost:					\$1,921,323.00	\$1,537,058.40	\$384,264.60		
Total Remaining:					\$0	\$0	\$0		

FY2024-2025 EDFC									
Project	From	To	Jurisdiction	Length	Total Cost	State	Local Match	Air Quality Exempt?	Project Description
Eligible projects addressing congestion TBD			Various		\$2,498,235.00	\$1,998,588.00	\$499,647.00	TBD	
Total Available:					\$2,498,235.00	\$1,998,588.00	\$499,647.00		
Total Cost:					\$2,498,235.00	\$1,998,588.00	\$499,647.00		
Total Remaining:					\$0	\$0	\$0		

FY2024-2025 CMAQ									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible CMAQ projects TBD *			Various		\$6,419,212.26	\$5,135,369.81	\$1,283,842.45	TBD	
Total Available:					\$6,419,212.26	\$5,135,369.81	\$1,283,842.45		
Total Cost:					\$6,419,212.26	\$5,135,369.81	\$1,283,842.45		
Total Remaining:					\$0	\$0	\$0		

**Includes transit and other eligible needs*

FY2024-2025 TAP									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible nonmotorized projects TBD	TBD		Various		\$4,326,459.94	\$3,028,521.96	\$865,291.99	TBD	
Total Available:					\$4,326,459.94	\$3,028,521.96	\$865,291.99		
Total Cost:					\$4,326,459.94	\$3,028,521.96	\$865,291.99		
Total Remaining:					\$0	\$0	\$0		

*FY2024-2025 MDOT									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	State Match	Air Quality Exempt?	Project Description
Operations and Maintenance			MDOT		\$30,108,283.50		\$30,108,283.50	Yes	Includes routine and winter state highway maintenance activities and operations (100% state funded)
Preservation			MDOT		\$136,682,201.00	\$109,345,760.80	\$27,336,440.20	Yes	
**M-37 in Caledonia Township Improvement Project	Approximately 92nd Street north	Existing M-37 boulevard section north of 76th Street	MDOT	Approx. 2.5 miles	\$55,000,000	\$15,200,000	\$39,800,000	No	Includes connecting improvements on adjacent local roads and connecting local non-motorized facilities
Total Available:					\$221,790,484.5	\$124,545,760.8	\$97,244,723.70		
Total Cost:									
Total Remaining:					\$0	\$0	\$0		

Note: this list does not contain routine maintenance, road rehabilitation, or capital preventative maintenance programs and projects. Projects that do not alter existing roadway thru-lane capacities beyond one-half (0.50) continuous miles, as permitted by federal regulation (examples: 40 CFR §93.105, 40 CFR §93.122 (a) (1), etc.), are not necessarily included in this list. As required by annual appropriation acts from the State of Michigan Legislature, the Michigan Department of Transportation (MDOT) is required to program projects over a rolling five-year period and provide this list to the Legislature and other state offices and officials. This program is documented in the MDOT Five Year Transportation Program (5YTP). In addition to projects programmed in the latest MDOT 5YTP, environmentally cleared projects are provided in this list, but unless programmed within the most current MDOT 5YTP, no open-to-traffic date is scheduled; dates indicated below are approximate. Other factors, such as funding availability, public input, statewide priorities, weather conditions, and partnership opportunities, may affect proposed completion date of projects listed beyond calendar year 2019, or may change the order of what projects are completed.

**Includes road rehabilitation and reconstruction, bridge replacement, capacity improvements, and operations and maintenance*

***Project Amended November 16, 2022. Project Notes:*

(1) 55 million cost is a planning-level estimate for M-37 improvements and connected local projects, and will be modified during the Environmental Assessment (EA) and design process; (2) Non-federal funding estimate includes all state and local revenue sources for M-37 and connected local projects; (3) Total cost includes some phases already obligated in the GVMC FY 2023-2026 TIP; (a) Non-Federal amount includes \$5.0 Million already obligated for PE and the EA

FY2024-2025 Transit								
Project	From	To	Jurisdiction	Length	Total Cost	Transit Capital Revenues	Air Quality Exempt?	Project Description
Bus Maintenance Capital Needs					\$3,473,390.00	\$3,473,390.00	Yes	
Facility Expansion/Maintenance Needs					\$1,605,900.00	\$1,605,900.00	Yes	
IT Capital Needs					\$1,515,000.00	\$1,515,000.00	Yes	
Replacement of fixed-route buses					\$17,549,782.00	\$17,549,782.00	Yes	
Replacement of paratransit vehicles					\$1,626,100.00	\$1,626,100.00	Yes	
Replacement of RapidVan vehicles					\$252,500.00	\$252,500.00	Yes	
Capitalized Operating Expense					\$4,040,000.00	\$4,040,000.00	Yes	
Miscellaneous Capital Needs					\$777,700.00	\$777,700.00	Yes	
Total Available:					\$30,840,373.00	\$30,840,373.00		
Total Cost:					\$30,840,372.00	\$30,840,372.00		
Total Remaining:					\$1.00	\$1.00		

FY2026-2035 MTP Projects

FY2026-2035 STP Urban									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible projects to maintain the system in a state of good repair TBD			Various		\$137,638,088.89	\$110,110,471.11	\$27,527,617.78	TBD	
Total Available:					\$137,638,088.89	\$110,110,471.11	\$ 27,527,617.78		
Total Cost:					\$137,638,088.89	\$110,110,471.11	\$ 27,527,617.78		
Total Remaining:					\$0	\$0	\$0		

FY2026-2035 STP Flex									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible reconstruction, resurface, and expand and improve projects TBD			Various		\$18,693,564.84	\$14,954,851.87	\$3,738,712.97	TBD	
Total Available:					\$18,693,564.84	\$14,954,851.87	\$3,738,712.97		
Total Cost:					\$18,693,564.84	\$14,954,851.87	\$3,738,712.97		
Total Remaining:					\$0	\$0	\$0		

FY2026-2035 STP Rural									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible rural projects TBD			Various		\$13,522,695.31	\$10,818,156.25	\$2,704,539.06	TBD	
Total Available:					\$13,522,695.31	\$10,818,156.25	\$2,704,539.06		
Total Cost:					\$13,522,695.31	\$10,818,156.25	\$2,704,539.06		
Total Remaining:					\$0	\$0	\$0		

FY2026-2035 STP Small Urban									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible small urban project TBD			City of Lowell		\$2,343,750.00	\$1,875,000.00	\$468,750.00	TBD	
Total Available:					\$2,343,750.00	\$1,875,000.00	\$468,750.00		
Total Cost:					\$2,343,750.00	\$1,875,000.00	\$468,750.00		
Total Remaining:					\$0	\$0	\$0		

FY2026-2035 NHPP									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible pavement preservation projects-NHS TBD			Various		\$10,835,586.14	\$8,668,468.92	\$2,167,117.23	TBD	
Total Available:					\$10,835,586.14	\$8,668,468.92	\$2,167,117.23		
Total Cost:					\$10,835,586.14	\$8,668,468.92	\$2,167,117.23		
Total Remaining:					\$0	\$0	\$0		

FY2026-2035 EDFC									
Project	From	To	Jurisdiction	Length	Total Cost	State	Local Match	Air Quality Exempt?	Project Description
Eligible projects addressing congestion TBD	TBD				\$14,089,166.97	\$11,271,333.58	\$2,817,833.39	TBD	
Total Available:					\$14,089,166.97	\$11,271,333.58	\$2,817,833.39		
Total Cost:					\$14,089,166.97	\$11,271,333.58	\$2,817,833.39		
Total Remaining:					\$0	\$0	\$0		

FY2026-2035 CMAQ									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible CMAQ projects TBD*	TBD		Various		\$36,202,100.01	\$28,961,680.01	\$7,240,420.00	TBD	
Total Available:					\$36,202,100.01	\$28,961,680.01	\$7,240,420.00		
Total Cost:					\$36,202,100.01	\$28,961,680.01	\$7,240,420.00		
Total Remaining:					\$0	\$0	\$0		

*Includes transit and other eligible needs

FY2026-2035 TAP									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible nonmotorized projects TBD	TBD		Various		\$24,399,712.78	\$17,079,798.94	\$7,319,913.83	TBD	
Total Available:					\$24,399,712.78	\$17,079,798.94	\$7,319,913.83		
Total Cost:					\$24,399,712.78	\$17,079,798.94	\$7,319,913.83		
Total Remaining:					\$0	\$0	\$0		

FY2026-2035 MDOT									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	State Match	Air Quality Exempt?	Project Description
Operations and maintenance			MDOT		\$169,800,134.00		\$169,800,134.00	Yes	Includes routine and winter state highway maintenance activities and operations (100% state funded)
M-37/M-44 (East Beltline Ave)	M-21 (E. Fulton St)	Knapp St	MDOT		\$60,000,000.00	\$48,000,000.00	\$12,000,000.00	No	Addition of 1 thru-lane on NB and SB M-37/M-44 (East Beltline Ave) and reconstruction and widening of M-37/M-44 (East Beltline Ave) bridge over I-96.
EB I-96 On-Ramp from Leonard St	Leonard St	EB I-96	MDOT					No	Relocate EB I-96 on-ramp from Leonard St to allow more space for merging between on-ramp and off-ramps to dedicated M-37/M-44 (East Beltline Ave) interchange and new EB I-96 to WB I-196 ramp. Existing weave-merge lane will tie in with relocated EB I-96 on-ramp from Leonard St.
EB I-96 Off-Ramp to WB I-196	EB I-96 (south of Leonard St interchange)	WB I-196 (near Maryland Ave overpass)	MDOT					No	Construct new off-ramp from EB I-96 (south of Leonard St interchange) to WB I-196 (near Maryland Ave overpass). Provides new access to WB I-196.
EB I-196 On-Ramp to WB I-96	EB I-196 (near Maryland Ave overpass)	WB I-96 (south of Leonard St interchange)	MDOT					No	Construct new on-ramp and bridges to WB I-96 (south of Leonard St interchange) from EB I-196 (near Maryland Ave overpass). Provides new access to WB I-96.
WB I-96	M-37/M-44 (East Beltline Ave)	North of Leonard St	MDOT					No	Relocation of mainline WB I-96 closer to EB I-96 (new alignment completed in 2020). Old alignment will be replaced with WB I-96 / NB M-37 collector-distributor (CD). No change in total thru lanes.
WB I-96 / NB M-37 Collector-Distributor	M-37/M-44 (East Beltline Ave)	North of Leonard St	MDOT					No	<p>New CD lanes on I-96 EB/WB, I-196 to M-44/M-37:</p> <ul style="list-style-type: none"> M-37/M-44 (East Beltline Ave) ramps to WB I-96 and WB I-196 will be directed to CD ramp first, then mainline system. This eliminates the cross-weaving between traffic exiting to WB I-196 from the M-37/M-44 (East Beltline Ave) interchange. CD will be used to access WB I-196 from WB I-96 CD will be used to access Leonard St from WB I-96 M-37/M-44 (East Beltline Ave) traffic will access Leonard St via the new WB I-96 CD.
*EB I-96	M-37/M-44 (East Beltline Ave)	M-21 (E. Fulton St)	MDOT		\$375,000,000.00	\$300,000,000.00	\$75,000,000.00	No	<ul style="list-style-type: none"> Addition of I-96 EB weave-merge lane between M-37/M-44 (East Beltline Ave.) and M-21 (E. Fulton St) and EB CD lanes between I-196 and M-37/M-44
WB I-96 Off-Ramp to M-21 (Fulton St)	WB I-96	M-21 (E. Fulton St)	MDOT		\$5,000,000.00	\$4,000,000.00	\$1,000,000.00	No	Construct new WB I-96 off-ramp to M-21 (E. Fulton St). This will include:
**WB I-96	Cascade Rd	Bridge over Grand Rapids Eastern (GRE) Railroad, near M-37/M-44	MDOT					No	<ul style="list-style-type: none"> New I-96 weave-merge lane between WB I-96 on-ramp from Cascade Rd to new WB I-96 off-ramp to M-21 (Fulton St) and M-21 modifications New thru-lane on EB/WB I-96 between Cascade Rd and bridge over GRE RR, near M-37/M-44 (East Beltline Ave). These lanes will tie in with new location of EB/WB I-96 and EB/WB I-96 CD lanes.

Preservation			MDOT		\$847,901,179.00	\$678,320,943.20	\$69,580,235.80	Yes	Includes road and bridge rehabilitation, reconstruction and/or replacement, CPM, traffic safety projects, and limited operational improvements
Total Available:					\$1,457,701,313.00	\$1,030,320,943.20	\$427,380,369.80		
Total Cost:					\$1,457,701,313.00	\$1,030,320,943.20	\$427,380,369.80		
Total Remaining:					\$0	\$0	\$0		

Note: this list does not contain routine maintenance, road rehabilitation, or capital preventative maintenance programs and projects. Projects that do not alter existing roadway thru-lane capacities beyond one-half (0.50) continuous miles, as permitted by federal regulation (examples: 40 CFR §93.105, 40 CFR §93.122 (a) (1), etc.), are not necessarily included in this list. As required by annual appropriation acts from the State of Michigan Legislature, the Michigan Department of Transportation (MDOT) is required to program projects over a rolling five-year period and provide this list to the Legislature and other state offices and officials. This program is documented in the MDOT Five Year Transportation Program (5YTP). In addition to projects programmed in the latest MDOT 5YTP, environmentally cleared projects are provided in this list, but unless programmed within the most current MDOT 5YTP, no open-to-traffic date is scheduled; dates indicated below are approximate. Other factors, such as funding availability, public input, statewide priorities, weather conditions, and partnership opportunities, may affect proposed completion date of projects listed beyond calendar year 2019, or may change the order of what projects are completed. Photos of several of these projects are located starting on page 176.

**All EB I-96 and I-196 projects are included in the total listed for this project*

***Cost is included in projects above*

FY2026-2035 Transit								
Project	From	To	Jurisdiction	Length	Total Cost	Transit Capital Revenues	Air Quality Exempt?	Project Description
Bus Maintenance Capital Needs			The Rapid		\$19,588,698.00	\$19,588,698.00	Yes	
Facility Expansion/Maintenance Needs			The Rapid		\$9,056,712.00	\$9,056,712.00	Yes	
IT Capital Needs			The Rapid		\$8,544,068.00	\$8,544,068.00	Yes	
Replacement of fixed-route buses			The Rapid		\$98,974,602.00	\$98,974,602.00	Yes	
Replacement of paratransit vehicles			The Rapid		\$9,170,633.00	\$9,170,633.00	Yes	
Replacement of RapidVan vehicles			The Rapid		\$1,424,011.00	\$1,424,011.00	Yes	
Capitalized Operating Expense			The Rapid		\$22,784,180.00	\$22,784,180.00	Yes	
Miscellaneous Capital Needs			The Rapid		\$4,385,955.00	\$4,385,955.00	Yes	
Total Available:					\$173,928,859.00	\$173,928,859.00		
Total Cost:					\$173,928,859.00	\$173,928,859.00		
Total Remaining:					\$0	\$0		

FY2036-2045 Projects

FY2036-2045 STP Urban									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible projects to maintain the system in a state of good repair TBD			Various		\$167,780,062.33	\$134,224,049.86	\$33,556,012.47	TBD	
Total Available:					\$167,780,062.33	\$134,224,049.86	\$33,556,012.47		
Total Cost:					\$167,780,062.33	\$134,224,049.86	\$33,556,012.47		
Total Remaining:					\$0	\$0	\$0		

FY2036-2045 STP Flex									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible reconstruction, resurface, and expand and improve projects TBD			Various		\$22,787,351.23	\$18,229,880.98	\$4,557,470.25	TBD	
Total Available:					\$22,787,351.23	\$18,229,880.98	\$4,557,470.25		
Total Cost:					\$22,787,351.23	\$18,229,880.98	\$4,557,470.25		
Total Remaining:					\$0	\$0	\$0		

FY2036-2045 STP Rural									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible rural projects TBD					\$16,484,090.13	\$13,187,272.10	\$ 3,296,818.03	TBD	
Total Available:					\$16,484,090.13	\$ 13,187,272.10	\$ 3,296,818.03		
Total Cost:					\$16,484,090.13	\$ 13,187,272.10	\$ 3,296,818.03		
Total Remaining:					\$0	\$0	\$0		

FY2036-2045 STP Small Urban									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible small urban project TBD			City of Lowell		\$2,343,750.00	\$1,875,000.00	\$ 468,750.00	TBD	
Total Available:					\$2,343,750.00	\$1,875,000.00	\$468,750.00		
Total Cost:					\$2,343,750.00	\$1,875,000.00	\$468,750.00		
Total Remaining:					\$0	\$0	\$0		

FY2036-2045 NHPP									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible pavement preservation projects-NHS TBD					\$13,208,519.05	\$10,566,815.24	\$2,641,703.81	TBD	
Total Available:					\$13,208,519.05	\$10,566,815.24	\$2,641,703.81		
Total Cost:					\$13,208,519.05	\$10,566,815.24	\$2,641,703.81		
Total Remaining:					\$0	\$0	\$0		

FY2036-2045 EDFC									
Project	From	To	Jurisdiction	Length	Total Cost	State	Local Match	Air Quality Exempt?	Project Description
Eligible projects addressing congestion TBD			Various		\$15,266,325.26	\$13,739,692.74	\$13,739,692.74	TBD	
Total Available:					\$15,266,325.26	\$13,739,692.74	\$13,739,692.74		
Total Cost:					\$15,266,325.26	\$13,739,692.74	\$13,739,692.74		
Total Remaining:					\$0	\$0	\$0		

FY2036-2045 CMAQ									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible CMAQ projects TBD*					\$44,130,158	\$35,304,126.32	\$8,826,031.58	TBD	
Total Available:					\$44,130,158	\$35,304,126.32	\$8,826,031.58		
Total Cost:					\$44,130,158	\$35,304,126.32	\$8,826,031.58		
Total Remaining:					\$0	\$0	\$0		

**Includes transit and other eligible needs*

FY2036-2045 TAP									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	Local Match	Air Quality Exempt?	Project Description
Eligible nonmotorized projects TBD					\$29,743,113.73	\$20,820,179.61	\$8,922,934.12	TBD	
Total Available:					\$29,743,113.73	\$20,820,179.61	\$8,922,934.12		
Total Cost:					\$ 29,743,113.73	\$20,820,179.61	\$8,922,934.12		
Total Remaining:					\$0	\$0	\$0		

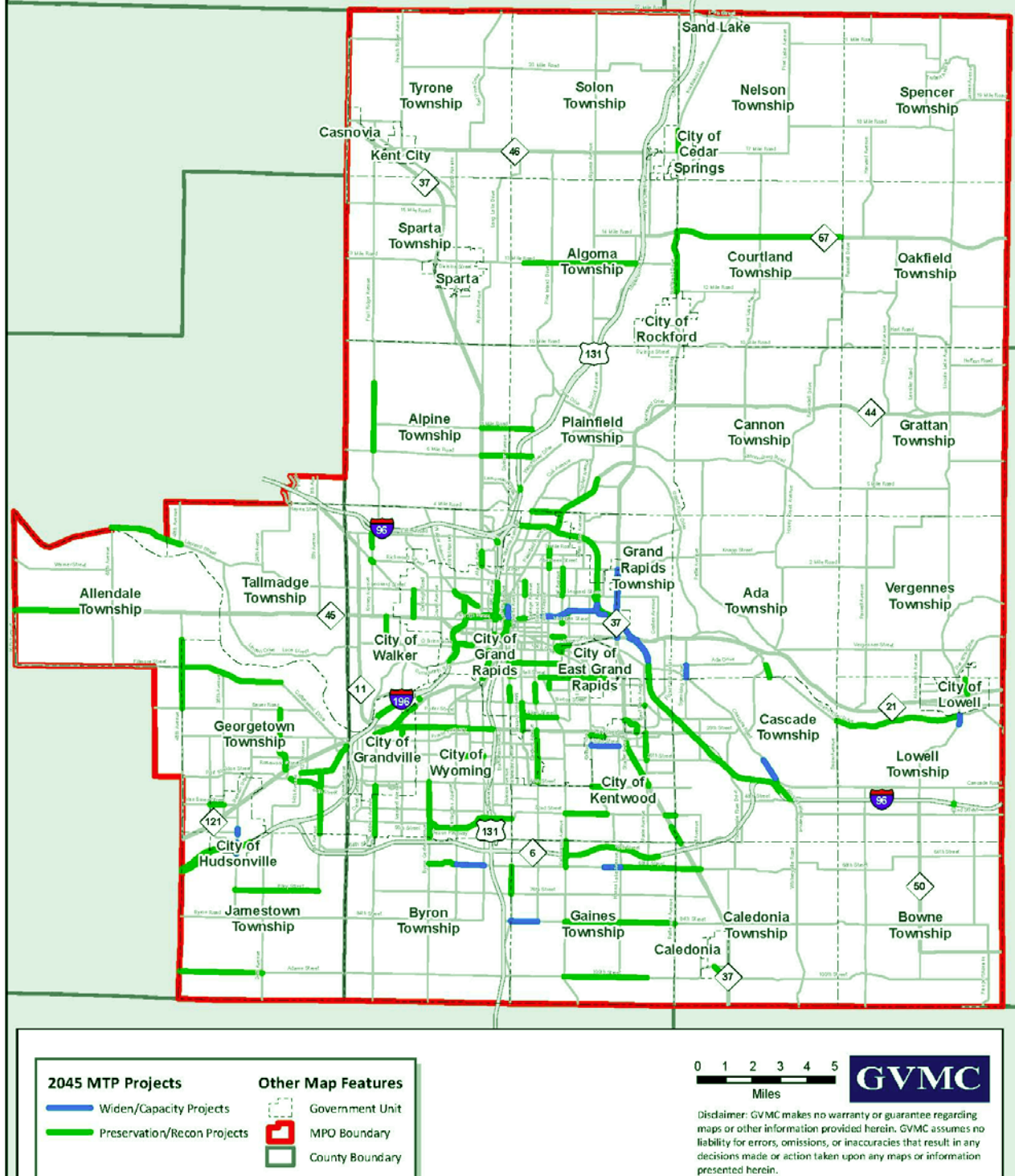
*FY2036-2045 MDOT									
Project	From	To	Jurisdiction	Length	Total Cost	Federal	State Match	Air Quality Exempt?	Project Description
Operations and maintenance					\$206,985,413.79		\$206,985,413.79	Yes	Includes routine and winter state highway maintenance activities and operations (100% state funded)
WB I-196 Off-Ramp to NB Division Ave; joint City of GR & MDOT project	WB I-196	Division Ave			\$25,000,000.00	\$20,000,000.00	\$5,000,000.00	No	
Preservation					\$1,246,526,083.00	\$997,220,866.40	\$249,305,216.60	Yes	
Total Available:					\$1,478,511,496.79	\$1,017,220,866.40	\$461,290,630.39		
Total Cost:					\$1,478,511,496.79	\$1,017,220,866.40	\$461,290,630.39		
Total Remaining					\$0	\$0	\$0		

Note: this list does not contain routine maintenance, road rehabilitation, or capital preventative maintenance programs and projects. Projects that do not alter existing roadway thru-lane capacities beyond one-half (0.50) continuous miles, as permitted by federal regulation (examples: 40 CFR §93.105, 40 CFR §93.122 (a) (1), etc.), are not necessarily included in this list. As required by annual appropriation acts from the State of Michigan Legislature, the Michigan Department of Transportation (MDOT) is required to program projects over a rolling five-year period and provide this list to the Legislature and other state offices and officials. This program is documented in the MDOT Five Year Transportation Program (5YTP). In addition to projects programmed in the latest MDOT 5YTP, environmentally cleared projects are provided in this list, but unless programmed within the most current MDOT 5YTP, no open-to-traffic date is scheduled; dates indicated below are approximate. Other factors, such as funding availability, public input, statewide priorities, weather conditions, and partnership opportunities, may affect proposed completion date of projects listed beyond calendar year 2019, or may change the order of what projects are completed.

**Includes road rehabilitation and reconstruction, bridge replacement, capacity improvements, and operations and maintenance*

FY2036-2045 Transit								
Project	From	To	Jurisdiction	Length	Total Cost	Transit Capital Revenues	Air Quality Exempt?	Project Description
Bus Maintenance Capital Needs					\$23,878,515.00	\$23,878,515.00	Yes	
Facility Expansion/Maintenance Needs					\$11,040,081.00	\$11,040,081.00	Yes	
IT Capital Needs					\$10,415,170.00	\$10,415,170.00	Yes	
Replacement of fixed-route buses					\$120,649,486.00	\$120,649,486.00	Yes	
Replacement of paratransit vehicles					\$11,178,948.00	\$11,178,948.00	Yes	
Replacement of RapidVan vehicles					\$1,735,861.00	\$1,735,861.00	Yes	
Capitalized Operating Expense					\$27,773,788.00	\$27,773,788.00	Yes	
Miscellaneous Capital Needs					\$5,346,454.00	\$5,346,454.00	Yes	
Total Available:					\$212,018,305.00	\$212,018,305.00		
Total Cost:					\$212,018,303.00	\$212,018,303.00		
Total Remaining:					\$2.00	\$2.00		

2045 MTP Projects Map with Capacity Deficiencies

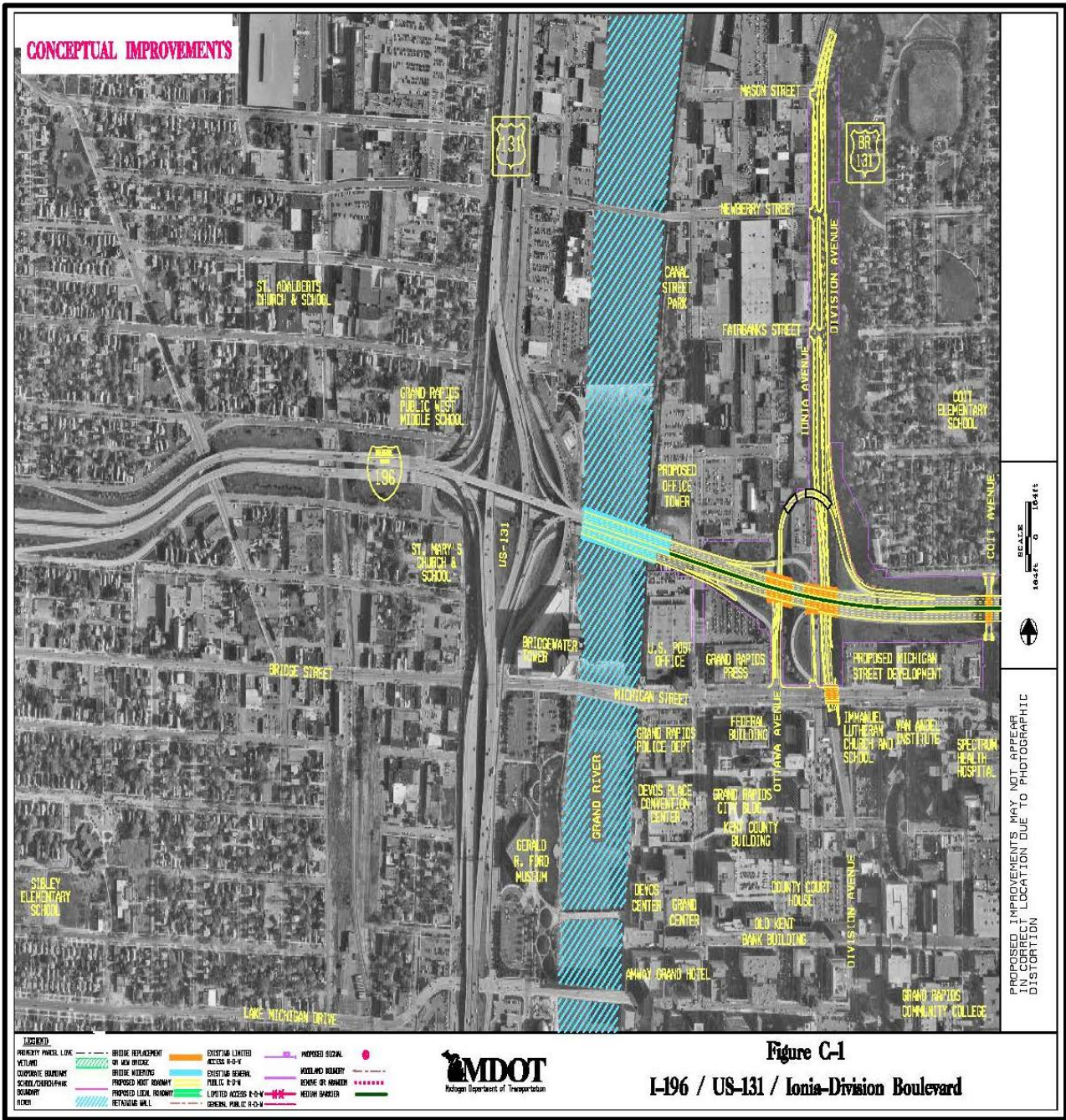


Map 26: 2045 MTP Projects with Capacity Deficiencies

Maps of MDOT Projects

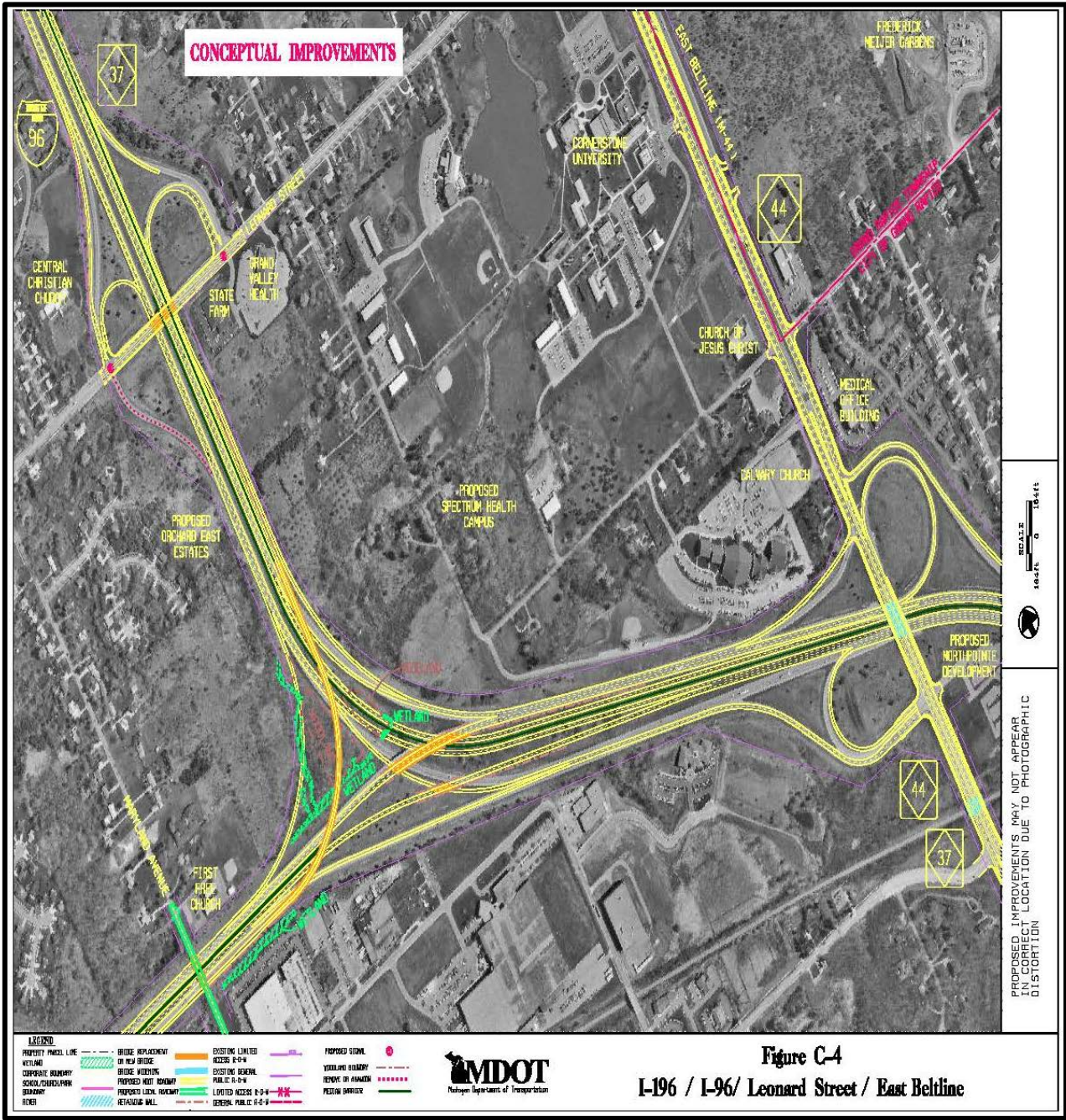
New ramp from westbound I-196 at Ottawa Avenue to N. Division Avenue

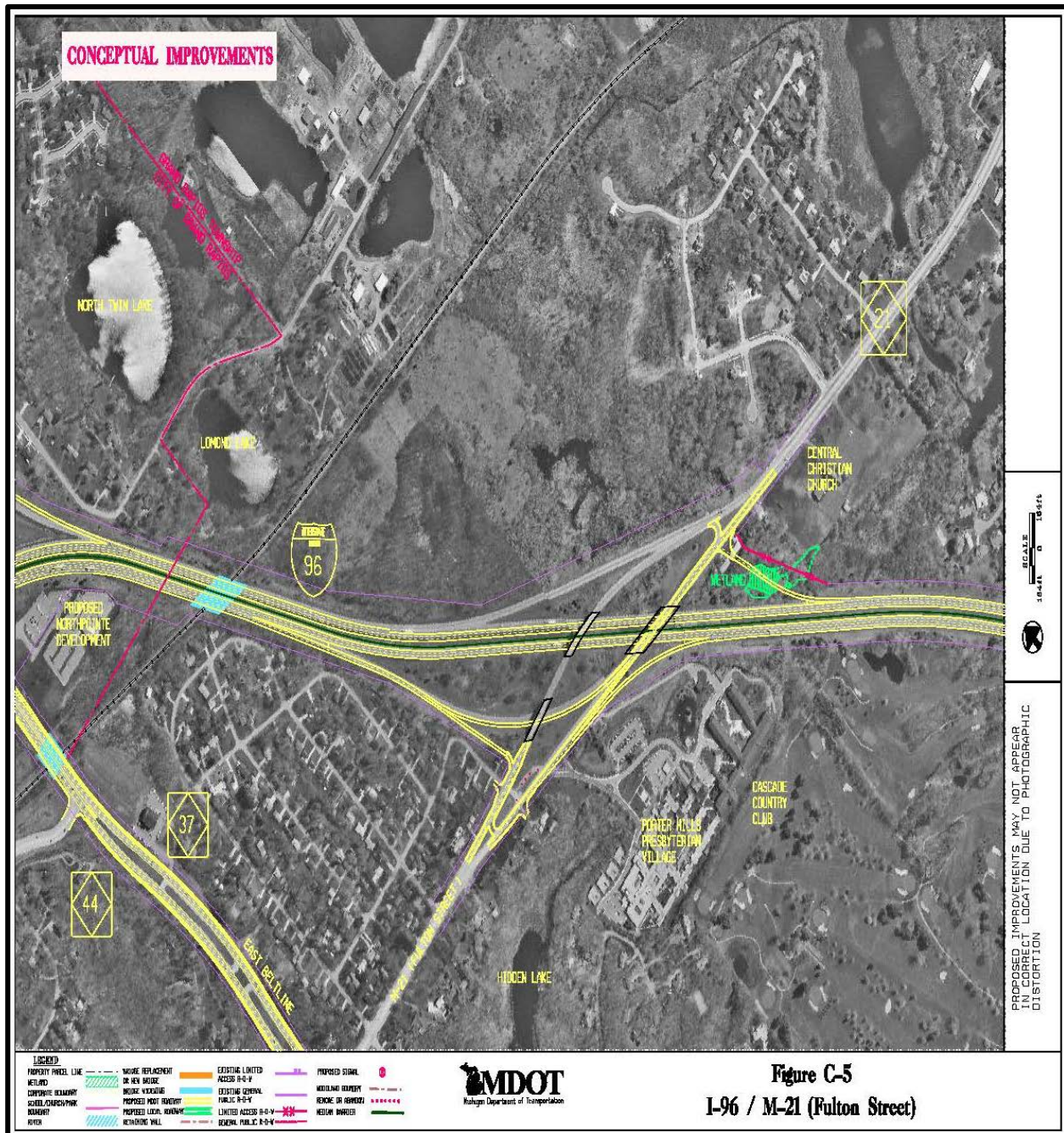
The map below contains details about this proposed joint MDOT/City of Grand Rapids project.



I-196/I-96 east to Cascade – Full Build Out

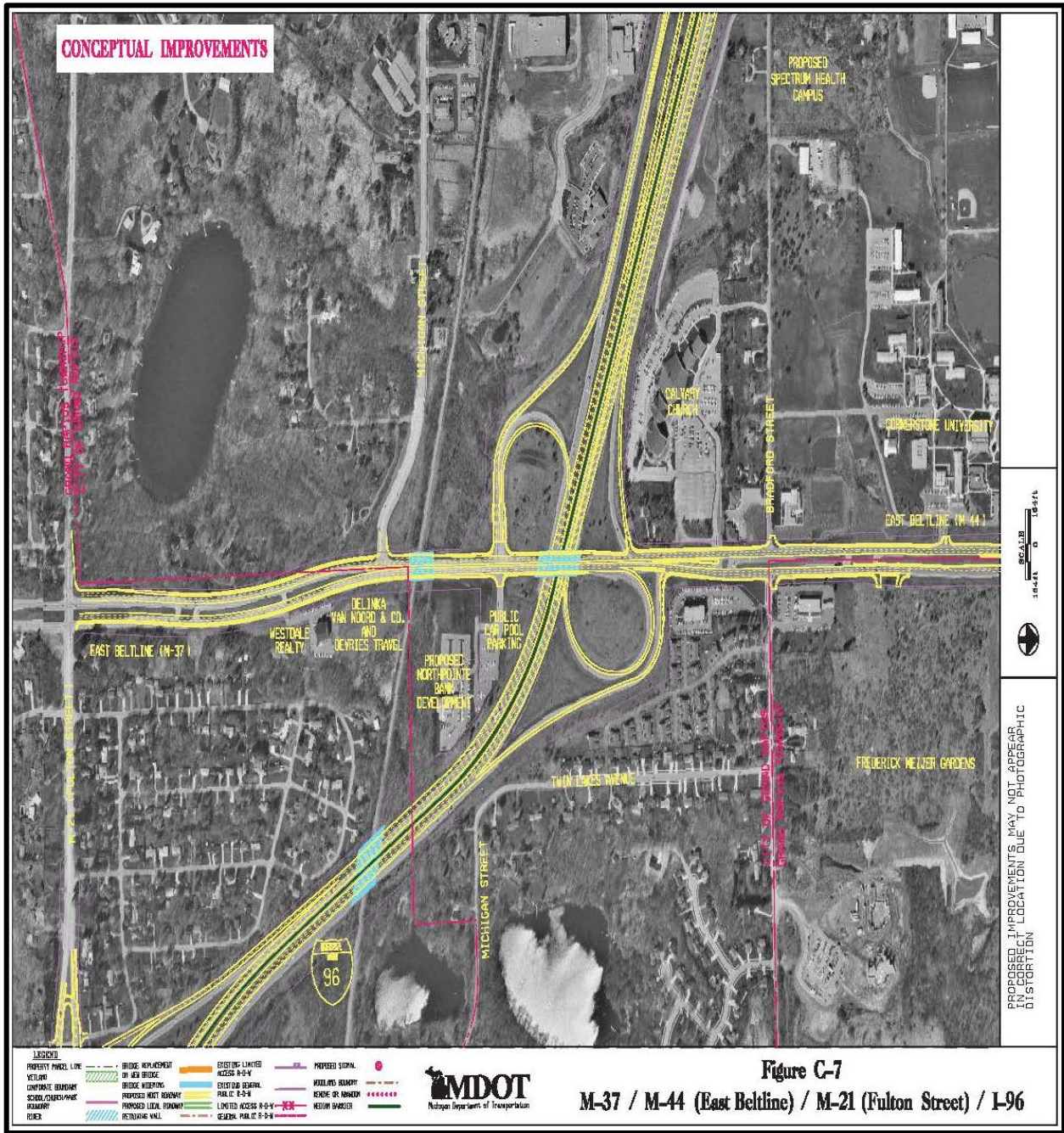
Please see below for concepts from the EA.





I-96 from M-21 (Fulton) to Knapp Street

Please see conceptual EA improvements below.



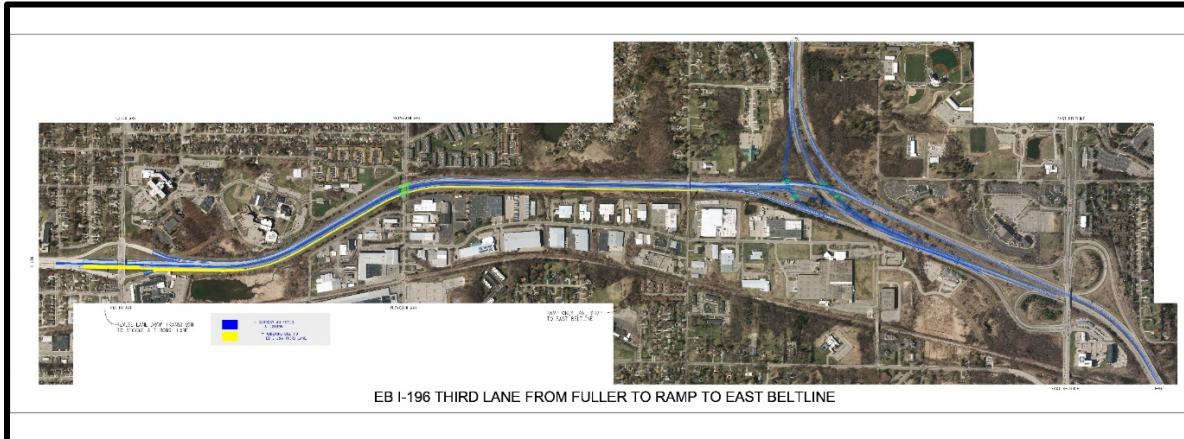
I-96/I-196 Flip project

Please note that in the photographs below, westbound I-196 travels under eastbound I-96. In the concepts, which were developed 10-15 years ago, it's the other way around. Hence, the project received the name "The Flip." The reasons behind this change are very technical, but in short, it was easier to maintain traffic during construction if MDOT built parts of the new eastbound I—96 mainline bridge and kept westbound I-96 open. It also resulted in lower costs because the bridges are smaller. For more information about this project, please view the video here: www.youtube.com/watch?v=r-XtvC9IPd4.



I-196/I-96: Fuller Avenue to M-44/M-37 (East Beltline)

This project will include an eastbound and westbound third lane on I-196, east of Fuller Avenue; expected completion in 2021.



Illustrative Project List

This chapter began with the list of approved major projects that have identified transportation deficiencies, are financially constrained and expected to be constructed within the funding available over the life of the plan. Many have been through the National Environmental Policy Act (NEPA) environmental clearance process and have a federally approved Environmental Impact Statement (EIS) or Environmental Assessment (EA).

Projects that are identified as deficiencies, but do not have dedicated funding, are included in the Illustrative Projects list below. Local pavement condition improvements that have been identified and are without a dedicated funding source, identified capacity needs without committed funds, MDOT projects that have not gone through the NEPA process, ITP/The Rapid projects that are considered “financially unconstrained” because funding is not yet secured, and nonmotorized projects which do not have identified funding, are all examples of the types of projects that are included on the illustrative list.

The Illustrative Projects have “conceptual improvements” indicated and estimated costs identified, when available, for each segment. These conceptual improvements will not become committed projects until further study is completed, including moving through the MPO process, funding is committed, and, as required, they progress through the federal NEPA process. In many cases, the Illustrative projects will require further study of feasible alternatives.

Local System Illustrative Vision

Throughout the development of this MTP, efforts were made to establish a basic vision of what we collectively would like our transportation system to be in the year 2045 and how the system could achieve optimal performance. Issues related to the condition of the pavement, to the reliability of travel times, to the convenience of the local transit system, to the availability of alternate means of transportation and the efficiency of moving freight throughout the system were all analyzed.

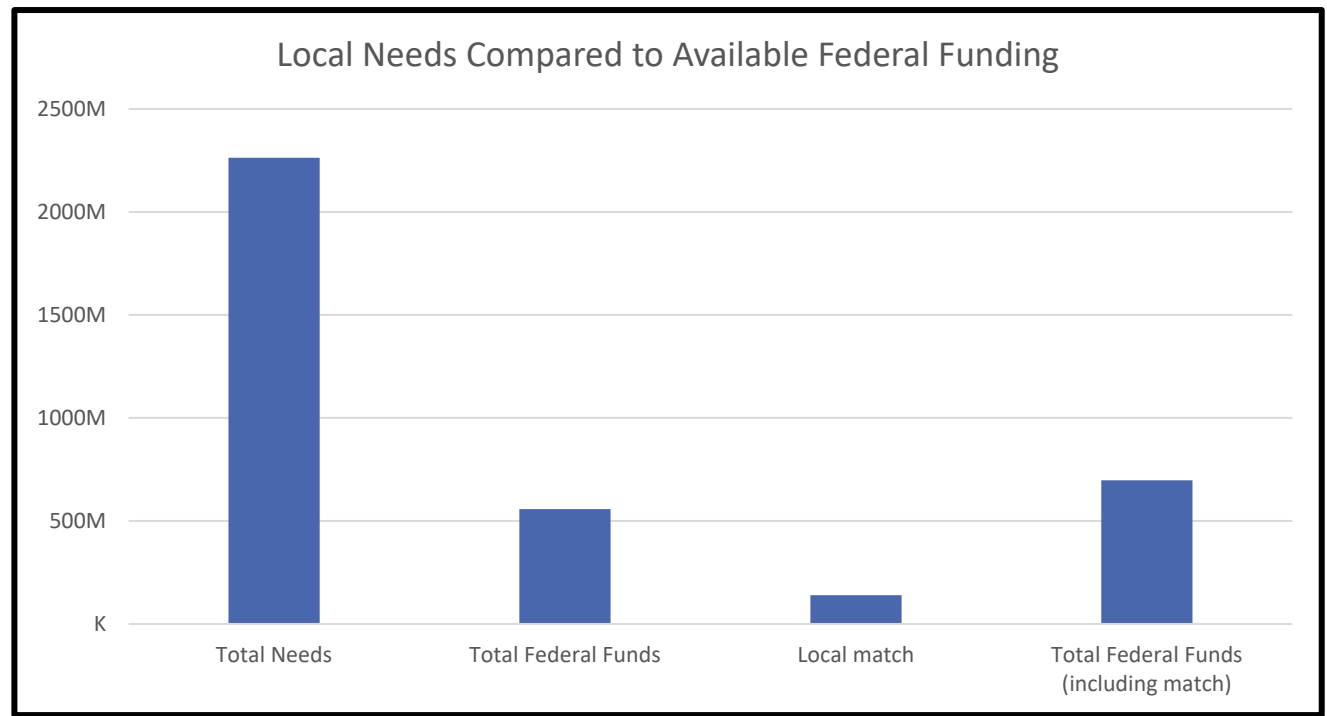


Figure 14: Local Needs Compared to Available Federal Funding

The results of this analysis concluded that in order to achieve a PASER rating of 6 for pavement, which is considered fair condition, we would need a 50% increase in the annual budget, or \$20.5 million, which would bring the total annual investment for pavement from \$41 million to \$61.5 million. In this scenario, the amount of pavement funding needed over the life of the MTP would be over \$1.5 billion. There is also \$13.7 million in identified need to improve identified capacity deficiencies (congestion) in the GVMC region. Currently, there is roughly \$80 million in unfunded need for nonmotorized projects, \$616 million in unfunded need for transit, and \$16 million in unfunded needs for safety projects. All tolled, there is approximately \$2.2 billion in identified local needs over the life of the plan. With only \$557.6 million available in local funds, which will increase to approximately \$697 million after adding 20% for the required local match, **there is a shortfall of approximately \$1.5 billion in meeting these needs.** Because of this shortage, GVMC encourages local units of government to pursue additional sources of funding, such as millages, special assessments, or grants, to improve the transportation system. GVMC and its member communities are dedicated to focusing future planning efforts to develop a strong vision of the future conditions of the transportation system in the region.

Illustrative project lists for local jurisdictions, MDOT, ITP-The Rapid, and nonmotorized projects, are available in Appendix G.

Chapter 9: Evaluating the Project List

Once project lists were developed, GVMC proceeded to analyze them through a variety of processes in order to fulfill federal regulations and ensure that the projects selected support the goals and objectives of the plan. These processes included (1) consultation with stakeholder agencies, (2) an environmental justice (EJ) analysis, (3) environmental mitigation, and (4) an air quality analysis. More information about these steps is described below.

Consultation

The process to develop the MTP includes many collaborative efforts and takes into consideration the feedback from member agencies, MDOT, FHWA, FTA, and other interested parties and stakeholder agencies. One part of this collaborative effort—consultation—is discussed in this section. A full list of collaborative efforts are highlighted in Chapter 2. Consulting with certain stakeholder agencies is a federal regulation and supports GVMC’s vision statement and goal to “engage stakeholders.” The aim of the consultation process is to eliminate or minimize conflicts with other agencies’ plans, programs, or policies as they relate to the Metropolitan Transportation Plan (MTP).

According to federal regulations, there are specific requirements that outline what types of agencies or stakeholders need to be consulted during the transportation planning process and what information needs to be shared with these interested parties. It is suggested that contacts with state, local, tribal governments, and private agencies responsible for the following areas be contacted:

- Economic growth and development
- Environmental protection
- Airport operators
- Freight movement
- Land use management
- Natural resources
- Conservation
- Historical preservation
- Human service transportation providers



Pigeon River in Ottawa County

By consulting with agencies such as Tribal governments or land use management agencies during the development of the MTP, these groups can compare the MTP project lists and maps with other natural or historic resource inventories. GVMC is also able to compare the draft project list to any documents received and make adjustments as necessary to achieve greater compatibility.

GVMC’s consultation list, which is maintained in Mailchimp, includes representatives from a variety of agencies that work in the fields identified above. This list currently includes 273 contacts representing 188 unique agencies. A complete list of the agencies GVMC consults with is included in our Consultation Plan.

The consultation process that GVMC undertook is based on recommendations from the Federal Highway Administration and the Michigan Department of Transportation and follows the protocol established in GVMC's newly developed Consultation Plan.

Consultation Agency Notification

Once project lists were approved by the Technical and Policy Committees, GVMC emailed our list of consultation agencies on Friday, November 22, 2019, asking them to provide insight into the MTP project list based on their areas of expertise. This email included the following information:

- An explanation of the consultation process, the Metropolitan Transportation Plan development process, and the role of the Grand Valley Metropolitan Council
- The draft 2045 MTP Project List
- A map of the draft 2045 MTP projects
- Illustrative project lists, including unfunded projects from local agencies and jurisdictions, MDOT, ITP-the Rapid, and nonmotorized projects
- Directions on how to provide input on the project list and how to contact GVMC staff for assistance

GVMC asked consultation agencies to provide their feedback by Wednesday, January 8, 2020. This feedback could include environmental issues for which mitigation measures could be proposed, impacts to historical sites, or whether or not MTP projects are compatible with the consultation agency's future plans. The length of the comment period was 48 days. Additional time was given for review due to three holidays falling during the consultation period. GVMC followed up this initial outreach effort with a reminder email on Monday, December 9, 2019. The table below shows the engagement rate for the emails.

Consultation Emails	Engagement Rate	
	Email Open Rate	Click Rate
Original Consultation Email sent November 22, 2019	21%	3.2%
Reminder Consultation Email sent December 9, 2019	30.1%	3.2%

Because the consultation process is separate and distinct from the public involvement process, GVMC contacted the consultation agencies prior to the beginning of the public comment period in order to provide additional time for their review and to give GVMC the opportunity to make changes to the MTP project list before the document was opened for public consumption. Per our Consultation Plan, GVMC also met the following special requests from consultation agencies during the document's development: (1) GVMC notified the Michigan State Police by email on December 10, 2019, of the safety projects in the 2045 MTP project list (there were none identified), and (2) GVMC notified MDEGLE, MDNR, Michigan Department of Health and Human Services, and the Michigan Department of Agriculture and Rural Development by email on February 13, 2020, that the draft 2045 MTP was complete and available for public comment. *Please note: all consultation agencies are included on GVMC's list of interested citizens/agencies, so they receive notices of all public involvement, including public comment, opportunities as well, and are therefore invited to participate at those milestones, too.*

Documentation of Consultation

The emails sent to our consultation agencies are included in Appendix I, as well as comments received.

Findings of Consultation

GVMC staff received one response in support of the draft project lists. Please note that the majority of the projects listed in the 2045 MTP have already cleared the Environmental Assessment stage, which likely influenced the low response rate. No significant issues were identified from the consultation process.

Environmental Justice

The projects in the 2045 Metropolitan Transportation Plan must meet the principles of the 1994 Presidential Executive Order 12898 relating to Environmental Justice (EJ): *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Specifically, the MTP must identify and address disproportionately high and adverse human health or environmental effects of its programs and policies on minority and low-income populations. Based on the spirit and intent of Environmental Justice, GVMC strives to identify, inform and engage two major sectors of the population: minority populations and low income residents. The sections that follow describe the methodology and process that was followed for GVMC's Environmental Justice review.

GVMC Environmental Justice Analysis Methodology

American Community Survey (ACS) 2017 5-year estimate data was analyzed utilizing Geographic Information Systems software to determine the makeup and concentration of minority groups at the census block group level for race/ethnicity and at the census tract level for low income.

Environmental Justice (EJ) areas for race/ethnicity were designated based on the population of minorities as compared to the overall population of the entire metropolitan area. Minority groups identified in the EJ executive order include individuals who identify as Alaskan Native, American Indian, Asian, Black or African American, Native Hawaiian and Pacific Islander, and Hispanic or Latino. A block group was flagged for EJ analysis if its combined population of these minority groups exceeded the regional proportion of minority residents, which is 23.4% (See Map 27 on page 188.)

For low-income EJ identification, a similar averaging methodology was used to select census tract geographies from the ACS data to determine the above average percentage areas. The indicator used for low income from ACS estimates was the percent of individuals living at or below 150% of the poverty level. For the MPO, a 21.3% average was used to define the threshold by census tract of percentage of individuals living below 150% of the poverty level. (See Map 28 on page 189.)

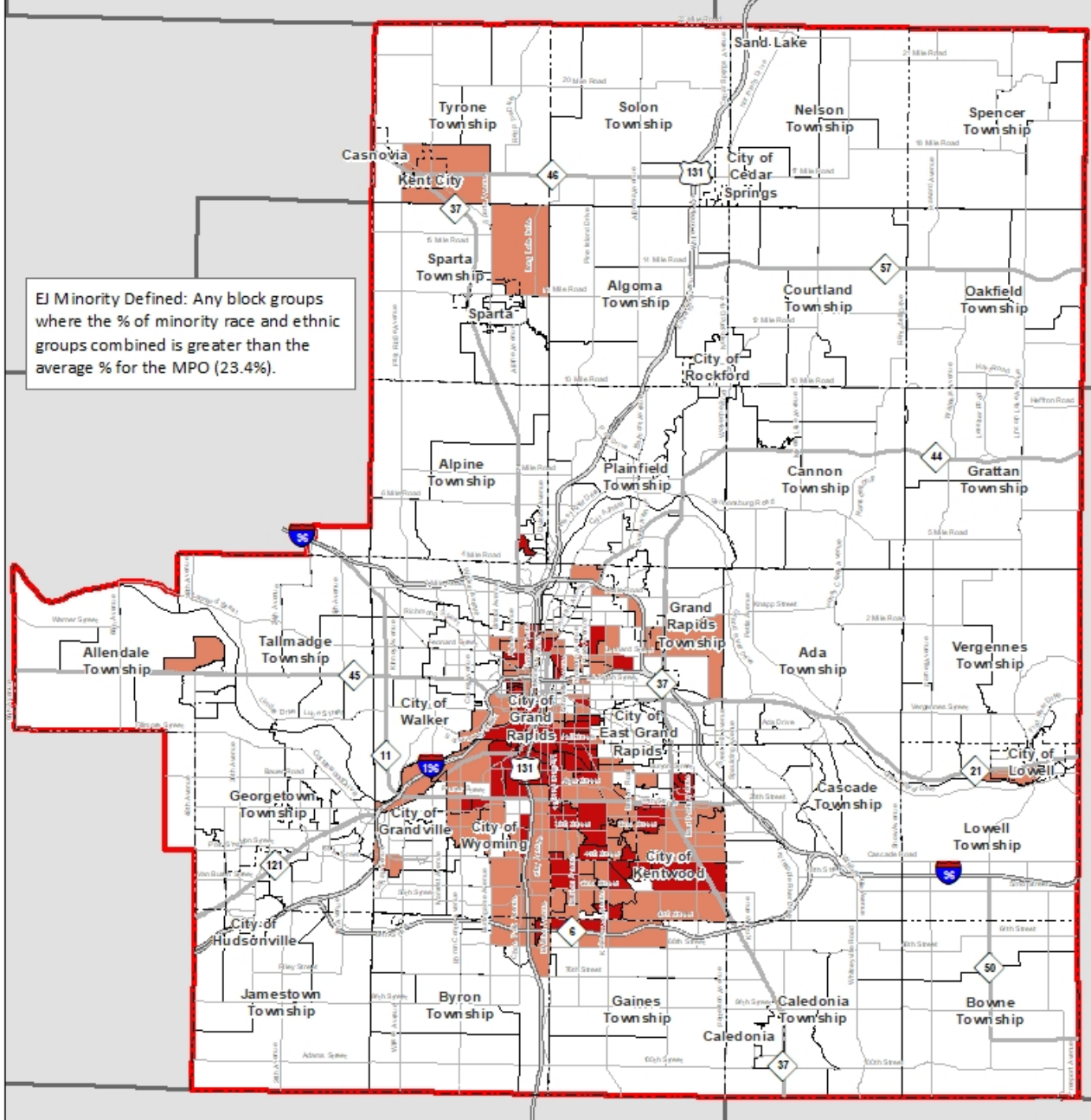
Together these defined areas were aggregated to create a comprehensive geographic coverage constituting the EJ areas within the MPO. Using the delineated EJ areas, GVMC was able to geographically overlay the 2045 MTP projects on the EJ areas. The project was considered and flagged if it geographically intersected an EJ area. (See Map 29 on page 192.)

Any 2045 Metropolitan Transportation Plan (MTP) projects which are an expansion of the transportation system (widening) may have potential adverse impacts to the community through the displacement or relocation of individuals, economic hardship, and/or a lack of sense of community. On average, the percentage of widening projects located in EJ areas is highly comparable to the percentage of widening projects throughout the MPO area. The same conclusion may be made for preservation projects which are anticipated to have minor impacts on the community and will not result in the displacement of residents. In addition, both widening and preservation projects should improve travel time and access for the residents and provide a measure of congestion relief.

For the purposes of this analysis, the assumption was made that the improvement of the condition of the transportation system through preservation projects, transit projects, nonmotorized projects, safety projects, etc., is improving the overall well-being of the community.

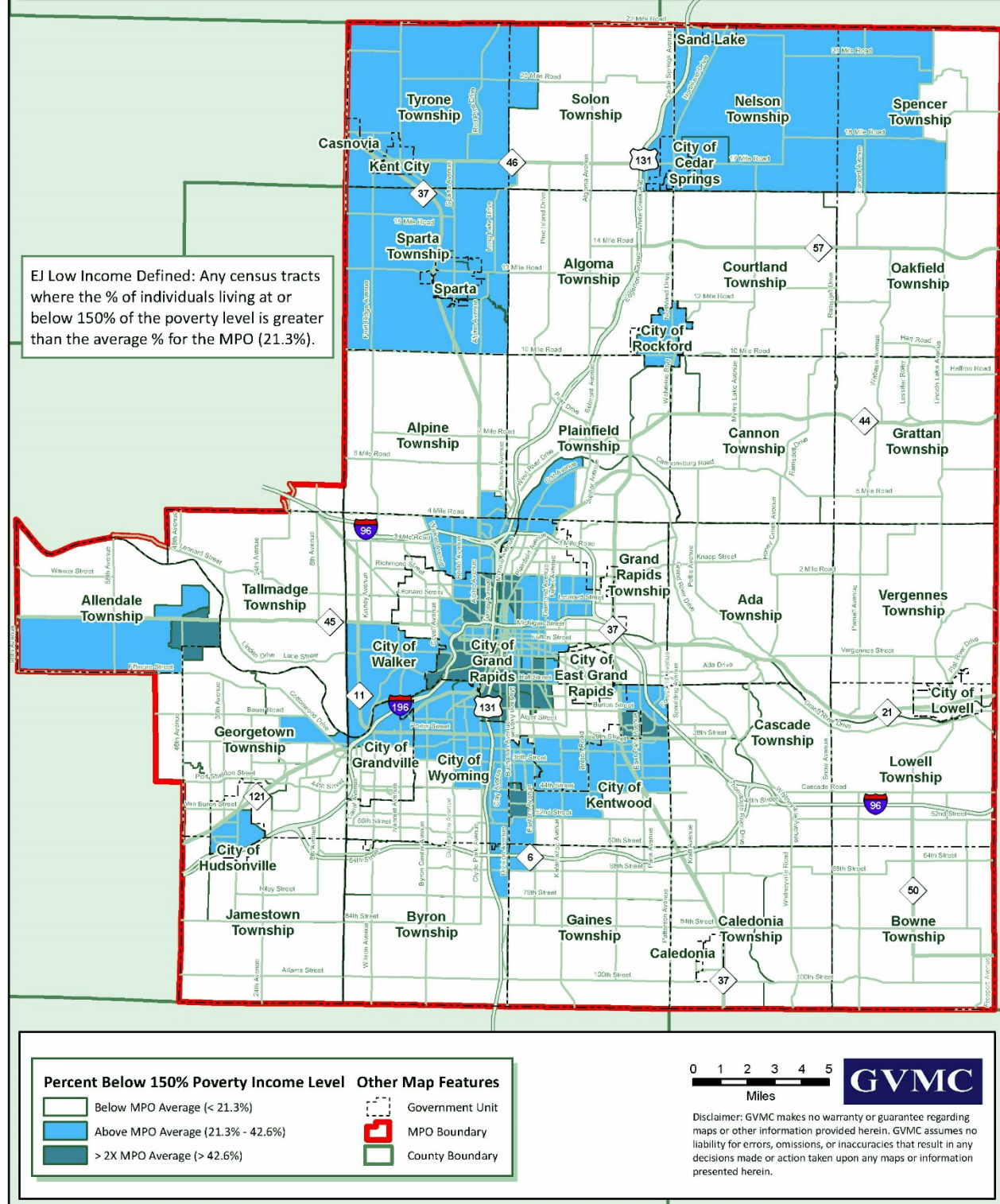
EJ Minority: Minority Percentage by Census Block Group

EJ Minority Defined: Any block groups where the % of minority race and ethnic groups combined is greater than the average % for the MPO (23.4%).



Map 27: EJ Minority Percentage by Census Block Group

EJ Low Income: People Living Below 150% of Poverty Level



Map 28: EJ Low Income Living below 150% of Poverty Level

Analysis of Project Impacts

With the EJ areas delineated, an analysis of impacts could be completed. The analysis of potential impacts centers on three criteria:

- (1) Disproportionately high and adverse human health and environmental impacts to EJ groups
- (2) Minimizing/blocking access of EJ areas to the transportation system
- (3) Neglect of the transportation system in EJ areas

Using the delineated EJ areas, GVMC was able to geographically overlay the 2045 MTP projects on the EJ areas to determine what projects could have potential impacts based on our three defined criteria. The project was considered and flagged if it geographically intersected an EJ area. (See Map 29 on page 193.)

There are 150 projects listed in the MTP document that had spatial reference characteristics and were used for the EJ analysis. Of the 150 projects, 60 projects, or 40% of MTP projects, are in EJ areas. These projects included all project categories. However, most of the projects fall into three categories: roadway resurfacing, roadway reconstruction, and roadway improve/expand (“widening”) projects.

The results of the analysis of project impacts on EJ areas are explained below.

Criterion 1: Disproportionately High and Adverse Human Health and Environmental Impacts to EJ Groups

Some of the improve/expand projects are in residential areas within EJ boundaries. These projects are anticipated to have minimal (if any) impacts in terms of noise, right-of-way takings, or pollution. Therefore, it was determined that there are no disproportionately high or adverse human health impacts.

Criterion 2: Minimizing/Blocking Access of EJ Areas to the Transportation System

Minimizing access can be characterized as the permanent closing of streets or interchanges in order to accomplish the projects contained in the MTP. While temporary closures will be necessary as part of the construction process for many projects, no permanent closures are intended as a result of implementing the proposed projects. Therefore, it has been determined that there is minimal blockage of access to the transportation system or loss of mobility as a result of implementing the MTP projects.

Criterion 3: Neglect of the Transportation System in EJ Areas

The GVMC MPO area is approximately 1,015 square miles. The EJ areas for the five minority groups and low income groups, taken together, account for approximately 258 square miles, or 24%, of the entire GVMC MPO area. The EJ analysis found that 40% of the MTP projects (60 out of the total 150 projects) are located within EJ areas, and 60% of the projects fall outside EJ areas. Of the 60 projects that were located within the EJ areas, 40% were road resurfacing, 20% were road reconstruction projects, and 10% were improve/expand widening projects. The remaining projects included miscellaneous capacity, nonmotorized, intersection, bridge, and yet-to-be-determined projects (from the illustrative list) that varied in scope of work. This analysis indicates that the transportation system will not be neglected in EJ areas based on projects in the MTP.

Accessibility Analysis

Access to public transit by residents in EJ areas was also analyzed. Using 2015 ACS population estimates, it was concluded that transit or paratransit service is geographically accessible to approximately 500,000 people in the MPO. The contractual agreements that the Rapid maintains with five townships help to improve transit accessibility. The public transit (The Rapid) service area, which comprises the Cities of Grand Rapids, Walker, Kentwood, Wyoming, Grandville, and East Grand Rapids as well as contractual agreements for routes to GVSU’s Allendale campus and paratransit service agreements in Ada, Alpine, Byron, Cascade, and Gaines

Townships, covers approximately 32% of the MPO. About 40% of the MPO EJ areas are within The Rapid's service areas. None of the projects contained in the MTP restrict access of residents to public transit services (fixed route or demand response). Thus, it has been determined that there is no neglect, reduction, or delay in the receipt of transportation benefits by those residing in EJ areas.

The Rapid's service area covers 28% of the MPO EJ areas. If we were to include the fixed route area, the Go!Bus demand response areas, and the paratransit service agreements, this coverage would total 45% within the MPO EJ areas. None of the projects contained in the MTP restrict resident access to public transit services (fixed route or demand response). Thus, it has been determined that there is no neglect, reduction, or delay in the receipt of transportation benefits by those residing in EJ areas.

The conclusion of this analysis is that accessibility would not be reduced by the 2045 MTP projects. While temporary closures are necessary as part of the construction process for many projects, no permanent closures are intended as a result of implementing the proposed projects. There is no blockage of access to the transportation system or loss of mobility as a result of implementing the MTP projects beyond what is typical during construction. In addition, both the widening and preservation projects will improve travel time and access for the residents and provide a measure of congestion relief.

Environmental Justice Notification

In addition to the regular public participation process, GVMC also sent a mailing to residents flagged during our EJ analysis. Since most of the MTP projects were included in the 2020-2023 TIP programming document, the majority of mailings had already been submitted to local residents informing them of a possible future project. However, there were 10 projects identified in Environmental Justice areas where mailing notifications were still required. Staff was able to perform an analysis to extract address information for the parcels that physically intersected the EJ areas adjacent to these 10 projects. Geographic Information Software (GIS) was used to do this in coordination with land parcel data sets provided from Kent and Ottawa counties. A postcard was mailed to these flagged parcels on January 28, 2020, explaining that there was a proposed improvement and advertising the February 10, 2020 public meeting. It also provided information about how and where to access more information. In summary, 327 EJ postcards were mailed for the purpose of informing those in historically underserved communities.

Conclusion

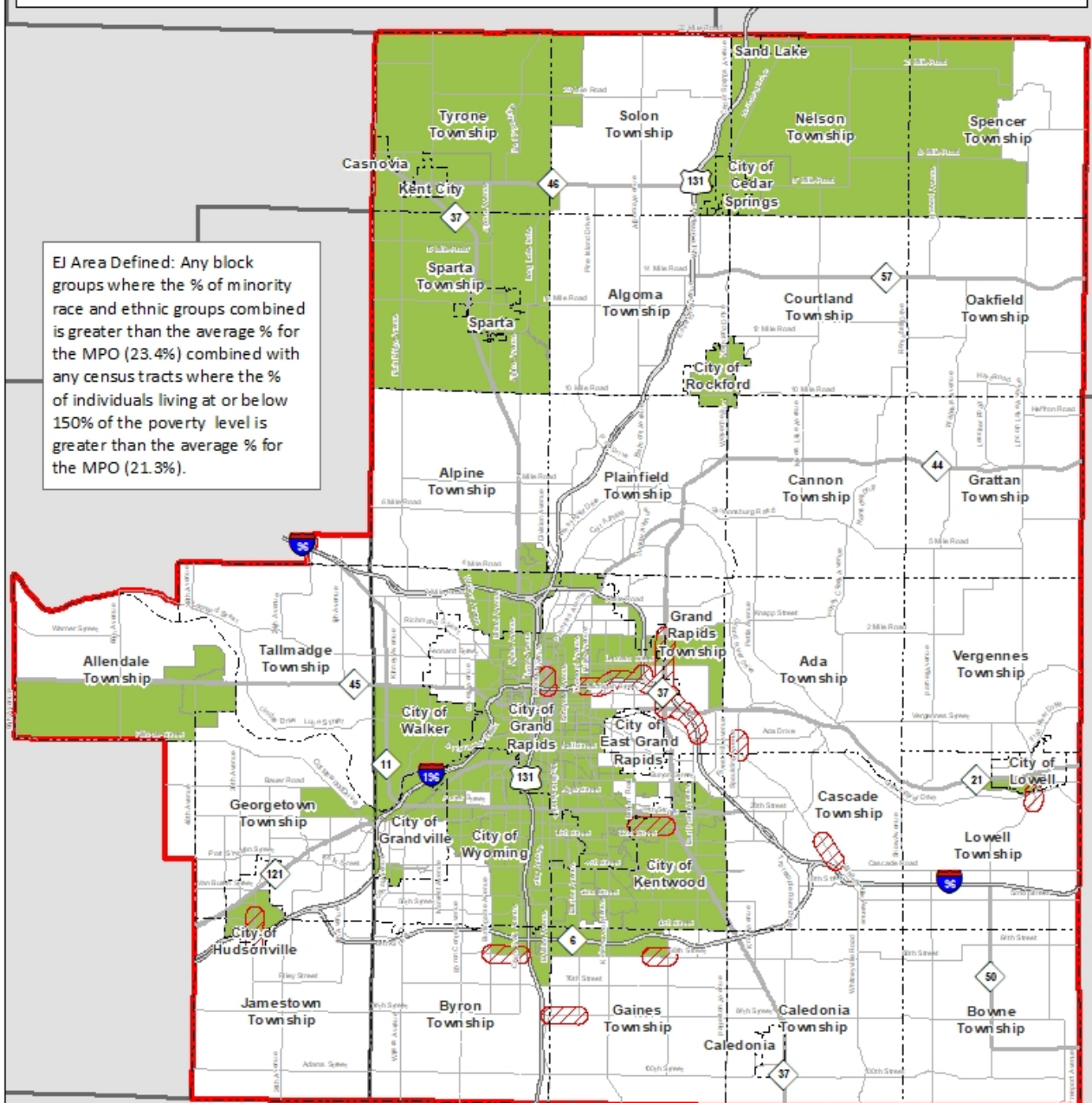
The analysis of impacts on residents in EJ areas, as a result of implementing the projects contained in this MTP, resulted in the following findings:

- (1) No disproportionately high and adverse human health impacts
- (2) No blockage/minimization of access to the transportation system or loss of mobility
- (3) No neglect, reduction, or delay in the receipt of transportation benefits or restriction of public access to public transit services

Within the 2045 MTP, nearly 86% of the projects within EJ areas were road resurfacing/reconstruction, and the MPO is investing the majority (87%) of our federal transportation dollars in projects in areas with higher than average numbers of minorities or people of low income status. This means that the benefits of increased federal investment in the road infrastructure are directed toward residents that are typically underserved, people of minority status, and those with low income levels. GVMC strives to reach out especially to those citizens in EJ areas adjacent to MTP projects through direct mailings to assure a high level of engagement for minority and low-income groups. These findings demonstrate that implementing the projects contained in this MTP do not result in violations of Executive Order 12898 and the principles of Environmental Justice.

Environmental Justice Area & MTP Expand/Widen Projects

EJ Area Defined: Any block groups where the % of minority race and ethnic groups combined is greater than the average % for the MPO (23.4%) combined with any census tracts where the % of individuals living at or below 150% of the poverty level is greater than the average % for the MPO (21.3%).



EJ Analysis Layers

- Expand/Widen Buffer
- EJ Boundary

Other Map Features

- Government Unit
- MPO Boundary
- County Boundary

0 1 2 3 4 5
Miles

GVMC

Disclaimer: GVMC makes no warranty or guarantee regarding maps or other information provided herein. GVMC assumes no liability for errors, omissions, or inaccuracies that result in any decisions made or action taken upon any maps or information presented herein.

Map 29: Environmental Justice and MTP Expand/Widen Projects

Environmentally Sensitive Resource Mitigation Analysis

Transportation infrastructure and its users, by their very nature, impact the physical landscape, including the natural environment. Therefore, it is important to take this impact into consideration when planning, designing, constructing, and maintaining a transportation system. One of the goals of the 2045 MTP is to “protect and enhance the environment.” Therefore, throughout the document and our project selection process, GVMC has strived to balance transportation needs with environmental protection in order to construct a system that minimizes negative impacts when impacts cannot be avoided.

Federal transportation legislation dictates a series of requirements for transportation plans. The current federal legislation, the FAST ACT, lists a requirement for the “discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. This discussion shall be developed in consultation with Federal, State, and tribal wildlife, land management, and regulatory agencies.”

The GVMC has developed a three-step process for addressing the technical aspects of the federal legislation:

- Defining and creating an inventory of environmentally sensitive resources
- Identifying and assessing likely impacts on these areas from transportation projects
- Addressing possible mitigation at the system-wide level

Essentially, the purpose of this process is to identify possible impacts on environmentally sensitive resources, list useful guidelines for mitigating these impacts, and provide all of this information to implementation agencies and officials for use in transportation decision-making. This analysis was performed at a regional level only and is not intended to provide detailed design alternatives or impacts at the project level. However, it is anticipated that the data collected will be useful in those project-level activities.

Environmentally Sensitive Resources

Seven environmentally sensitive resources were defined by the GVMC for the purpose of this study. It is important to note that not all resources have been included in this analysis. Only those resources that had data readily available in digital format for Geographic Information System (GIS) mapping and those resources where the data were reasonably up-to-date were included. Environmentally sensitive resources not included in this analysis may deserve attention at the project level; however, for the purposes of this system-wide report, fewer environmentally sensitive resources were analyzed. The resources analyzed included:

- Water features – lakes, ponds, rivers and streams
- Wetlands
- Flood zones
- Woodlands
- Parks and recreation areas
- Cemeteries
- Historic sites

Methodology

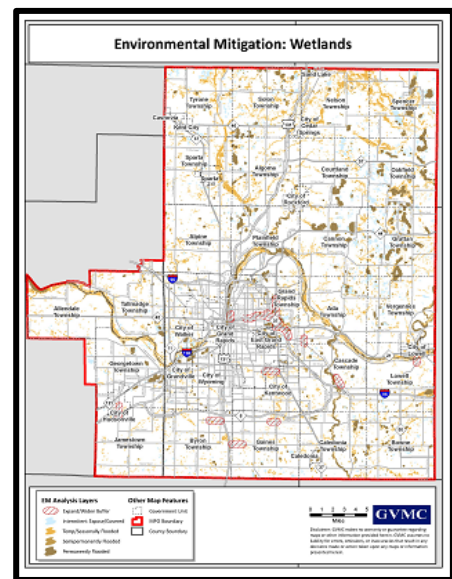
Once the environmentally sensitive resources were defined and identified, the GVMC analyzed the likelihood of possible impacts from planned 2045 projects. The 2045 projects were mapped and buffered to display an

area around each project that could possibly be affected. The size of the buffer used varied by project type and environmental resource, as described in the table below:

Environmental Resource	Size of Buffer
Water features – lakes, ponds, rivers and streams	1/4 mile buffer (1,320 feet)
Wetlands	1/4 mile buffer (1,320 feet)
Flood zones	1/4 mile buffer (1,320 feet)
Woodlands	1/4 mile buffer (1,320 feet)
Parks and recreation areas	250 feet
Cemeteries	250 feet
Historic sites	250 feet

The next step taken was the intersection of the project buffers with each environmentally sensitive resource. Where a project buffer and environmentally sensitive resource were found to intersect, an impact was considered possible. However, it is important to understand that no additional analysis of potential impacts was performed for the purposes of this report. It is possible that although an environmentally sensitive resource intersects with a buffer, no impact could be present; it is also possible that environmentally sensitive resources beyond the mapped buffer could be impacted by a project. This assessment simply draws attention to possible areas of concern that should be further examined at the project level.

Maps for each of the seven environmentally sensitive resources were produced to display at a system-wide level for those projects with potential environmental impacts. All seven maps are located in Appendix J.



Sample Environmental Mitigation Map

Guidelines for Mitigating 2045 Project Impacts

In general, the purpose of this report is to draw attention to those projects that could potentially impact environmentally sensitive resources, as well as to provide guidelines for consideration with respect to transportation projects. Overall guidelines are provided for consideration for all types of projects regardless of the resource impacted. These guidelines are introduced for reference purposes only. The GVMC has no authority to require implementation of the guidelines listed. However, they represent best management practices and should only serve to enhance the quality of the transportation planning process. The implementation of these guidelines may also assist in a jurisdiction's compliance with other regulatory mandates and for this reason should be implemented where appropriate.

Overall Guidelines

Regardless of the type of project or resource that may be impacted, these guidelines deserve consideration during the planning, design, construction, and maintenance of transportation projects. Implementation of these guidelines will help to ensure good planning practice that is in accord with overall environmental protection objectives.

Planning and Design Guidelines

- Utilize Context Sensitive Solution (CSS) principles as early as possible in project development and throughout the planning process. CSS is a process that considers the entire context within which a transportation project takes place, including financial limitations and safety issues. This method involves all stakeholders in a collaborative and interdisciplinary approach to developing transportation projects.
- Identify the area of potential impact related to each transportation project, including the immediate project area as well as other related project development areas.
- Perform an inventory to determine if any environmentally sensitive resources could be impacted by the project per the National Environmental Policy Act (NEPA) of 1969.
- Investigate as to whether a County Hazard Mitigation Plan exists, and if the plan speaks to the impacted resources in question. (A County Hazard Mitigation Plan is required for a county to be eligible to receive federal Hazard Mitigation Grant funds in order to protect communities from a variety of hazards, including those to the natural environment.
- Coordinate design and construction with local plans, such as watershed management plans, community recreation plans, preservation plans, cemetery preservation plans, local community master plans and nonmotorized plans.
- Organize and conduct a meeting with local community officials, contractors/subcontractors, and relevant stakeholders prior to construction to discuss environmental protection issues, form goals, and communicate any special requirements for the project.
- Avoid impacts, as possible, to environmental resources by limiting project magnitude or redesigning the project.
- Where impacts are unavoidable, mitigate them to the extent possible as required through local, state, and federal regulations and laws.
- Incorporate storm water management into the site design.
- Reduce the use of culverts where possible.

Construction and Maintenance Guidelines

- Include all special requirements that address environmentally sensitive resources into plans and estimates used by contractors and subcontractors. Bring attention to the types of activities prohibited in environmentally sensitive areas.
- Minimize construction and staging areas and clearly mark boundaries.
 - Install flagging or fencing around sensitive areas to prevent intrusion
- Utilize the least intrusive construction techniques and materials.
- Whenever possible keep construction activities away from wildlife crossings and corridors.
- Order and organize construction activities to reduce land disturbances.
- Conscientious consideration of the unearthing of archeological remains when using heavy equipment.
- Avoid equipment maintenance, fueling, and leaks, as well as the spraying down of equipment near sensitive areas.
- Incorporate integrated pest management techniques if pesticides are used during maintenance.
- Conduct on-site monitoring during and immediately after construction to ensure environmental resources are protected as planned.
- Avoid disturbing the site as much as possible including:
 - Protecting established vegetation and habitat
 - If vegetation is damaged or removed during construction, replace with native species as soon as possible.
 - Protect the tree and drip zone during construction (where the majority of the tree's root system is located.)
 - Implementing sediment and erosion control techniques
 - Minimize extent and duration of exposed bare ground.
 - Establish vegetation immediately after grading is complete.
 - Prevent tracking of sediment onto paved surfaces.

- Do not stockpile materials in sensitive areas.
- Protecting water quality
 - Prevent direct runoff of water containing sediments.
 - Sweep streets to reduce sediment entering the storm drainage system.
 - Block/control storm drains to prevent construction debris from polluting waterways.
 - Implement salt management techniques.
- Protecting cultural/historic resources
 - Prevent the disturbance of soil/material near cultural resources.
- Minimizing noise and vibrations
- Providing for solid waste disposal
 - Properly handle, store, and dispose of hazardous materials and use the least hazardous materials when possible.
 - Implement spill control and clean up and dry clean up methods as appropriate, never letting a spill enter the storm drainage system or waterways.

Environmental Mitigation Consultation

GVMC contacted environmentally focused organizations during our consultation process. No comments from environmentally focused organizations were received. The Grand Valley Metropolitan Council will continue to use the consultation process to communicate with the appropriate local, state, and federal agencies to minimize the impact that transportation improvements have on the environment. Please refer to the consultation section of this chapter for information on the consultation process.

Air Quality Conformity

As part of its transportation planning process, the Grand Valley Metro Council (GVMC) and the West Michigan Metropolitan Transportation Planning Program (WestPlan) completed the transportation conformity process for GVMC's 2045 Metropolitan Transportation Plan (MTP) and WestPlan's 2045 Long-Range Transportation Plan (LRTP), as well as the Macatawa Area Coordinating Council's (MACC's) 2045 LRTP and all three FY2020-2023 Transportation Improvement Programs (TIPs) and relevant portions of the State Transportation Improvement Plan (STIP). The Transportation Conformity Determination Report for the 1997 Ozone NAAQS (National Ambient Air Quality Standards) demonstrates that GVMC's 2045 MTP, WestPlan's 2045 LRTP, the MACC's 2045 LRTP and all three associated FY2020-2023 TIPs, as well as the State Transportation Improvement Program (STIP) in Ottawa and Kent Counties, meet the federal transportation conformity requirements in 40 CFR Part 93. A brief summary of the report is below.

History of Transportation Conformity

The concept of transportation conformity was introduced in the Clean Air Act (CAA) of 1977, which included a provision to ensure that transportation investments conform to a State Implementation Plan (SIP) for meeting the federal air quality standards. Conformity requirements were made substantially more rigorous in the CAA Amendments of 1990. The transportation conformity regulations that detail implementation of the CAA requirements were first issued in November 1993 and have been amended several times. The regulations establish the criteria and procedures for transportation agencies to demonstrate that air pollutant emissions from LRTPs, TIPs, and projects are consistent with ("conform to") the state's air quality goals in the SIP.

The Clean Air Act (CAA) section 176(c) (42 U.S.C. 7506(c)) requires federally funded or approved highway and transit activities to be consistent with ("conform to") the purpose of the State Implementation Plan (SIP). Conformity to the purpose of the SIP means Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals are given to highway and transit activities that will not cause new

air quality violations, worsen existing air quality violations, or delay timely attainment of the relevant air quality standard, or any interim milestone, 42 U.S.C. 7506(c)(1). United States Environmental Protection Agency's (EPA's) transportation conformity rule establishes the criteria and procedures for determining whether MTPs, TIPs, and federally supported highway and transit projects conform to the SIP, 40 CFR Parts 51.390 and 93.

South Coast Air Quality Mgmt. District v. EPA

On Feb. 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in *South Coast Air Quality Mgmt. District v. EPA* ("South Coast II," 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone NAAQS and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. These conformity determinations were required in these areas after Feb. 16, 2019. The Grand Rapids area (Kent and Ottawa counties) was in maintenance at the time of the 1997 ozone NAAQS revocation on April 6, 2015, and was also designated attainment for the 2008 ozone NAAQS on May 21, 2012. It was also designated attainment for the 2015 ozone NAAQS on Aug. 3, 2018. Therefore, per the *South Coast II* decision, a conformity determination must be made for the 1997 ozone NAAQS on the LRTPs and TIPs.

Criteria and Procedures for Determining Conformity

The Transportation Conformity Determination Report was completed consistent with CAA requirements, existing associated regulations at 40 CFR Parts 51.390 and 93, and the *South Coast II* decision, according to EPA's Transportation Conformity Guidance for the *South Coast II* Court Decision issued on Nov. 29, 2018, and followed the criteria and procedures outlined below.

The transportation conformity regulation at 40 CFR 93.109 sets forth the criteria and procedures for determining conformity. The conformity criteria for MTPs and TIPs includes: latest planning assumptions (93.110), latest emissions model (93.111), consultation (93.112), transportation control measures (93.113(b) and (c)), and emissions budget and/or interim emissions (93.118 and/or 93.119). For the 1997 ozone NAAQS areas, transportation conformity for MTPs and TIPs for the 1997 ozone NAAQS can be demonstrated without a regional emissions analysis, per 40 CFR 93.109(c). This provision states that the regional emissions analysis requirement applies one year after the effective date of EPA's nonattainment designation for a NAAQS and until the effective date of revocation of such NAAQS for an area. The 1997 ozone NAAQS revocation was effective on April 6, 2015, and the *South Coast II* court upheld the revocation. As no regional emission analysis is required for this conformity determination, there is no requirement to use the latest emissions model, budget, or interim emissions tests.

Therefore, transportation conformity for the 1997 ozone NAAQS for the GVMC 2045 MTP, WestPlan 2045 LRTP, MACC 2045 LRTP, all three 2020-2023 TIPs, and the rural STIP in Ottawa and Kent counties can be demonstrated by showing the following requirements have been met:

- Latest planning assumptions (93.110)
- Consultation (93.112)
- Transportation control measures (TCMs) (93.113)
- Fiscal constraint (93.108)

Latest Planning Assumptions

The use of latest planning assumptions in 40 CFR 93.110 of the conformity rule generally applies to regional emissions analyses. In the 1997 ozone NAAQS areas, the use of the latest planning assumptions requirement

applies to assumptions about transportation control measures (TCMs) in an approved SIP. The Michigan SIP does not include any TCMs.

Consultation

The consultation requirements in 40 CFR 93.112 were addressed both for interagency consultation and public consultation. Interagency consultation was conducted with the MACC; WestPlan; GVMC; the Michigan Department of Transportation (MDOT); the Michigan Department of Environment, Great Lakes, and Energy (EGLE); FHWA; FTA; and EPA. A Michigan Transportation Conformity Interagency Workgroup (MITC-IAWG) meeting was held on Dec. 16, 2019. Interagency consultation was conducted consistent with Michigan's conformity SIP.

Public consultation will be conducted consistent with planning rule requirements in 23 CFR 450. The Public Participation Plan adopted by GVMC's Policy Committee establishes the procedures by which GVMC engages the public. The same procedures were followed for this document, ensuring that the public has an opportunity to review and comment before the MPOs make a determination.

A formal public comment period for the draft conformity report was held from January 13 to Feb. 3, 2020. The GVMC Policy Committee made a formal conformity determination through a resolution at their meeting on April 15, 2020. The draft conformity report can be found at: www.gvmc.org/air-quality.

Timely Implementation of Transportation Control Measures (TCMs)

The Michigan SIP does not include any TCMs.

Fiscal Constraint

Transportation conformity requirements in 40 CFR 93.108 state that transportation plans and TIPs must be fiscally constrained consistent with the metropolitan planning regulations at 23 CFR part 450. The LRTPs and 2020-2023 TIPs are fiscally constrained, as demonstrated in:

- GVMC 2045 MTP, Chapter 7 Funding the Vision
- GVMC 2023-2023 TIP, Financial Plan as updated to include the most current amendment
- WestPlan 2045 LRTP, Financial Resources Analysis
- WestPlan 2023-2023 TIP, Financial Analysis as updated to include the most current amendment
- MACC 2045 LRTP, Chapter 11 Financial Resources Analysis
- MACC 2023-2023 TIP, Financial Plan, as updated to include the most current amendment
- 2020-2023 STIP, including latest amendments for Kent and Ottawa counties

Conformity Determination

The transportation conformity process determined and demonstrated that the GVMC 2045 MTP, Westplan 2045 LRTP, MACC 2045 LRTP, all three 2020-2023 TIPs, and the 2020-2023 STIP for Kent and Ottawa counties meet the CAA and Transportation Conformity rule requirements for the 1997 ozone NAAQS.

Chapter 10: Evaluating the Effectiveness of the MTP

It is important to evaluate whether implementation of the 2045 Metropolitan Transportation Plan (MTP) will bring our area closer to the area goals and objectives outlined in Chapter 3. To evaluate the MTP, measures of effectiveness were used, both quantitative and qualitative. Listed below are the MTP goals and a discussion of how well the MTP fulfills each of them.

MTP Goal	Discussion of Effectiveness
Goal 1: Further Develop an Efficient Multimodal System	The five transportation investment priorities of the MTP, which include: (1) maintaining the system in a state of good repair (preservation), (2) congestion management, (3) safety, (4) transit, and (5) nonmotorized, all contribute toward enhancing our efficient multimodal system. This document addresses needs for all five areas, totaling nearly \$3.8 billion. The total amount available over the life of the plan falls short of this total by approximately \$383 million, which is why increasing funding has been identified as an MTP recommendation. However, \$3.7 billion is also expected to be spent improving all of these aspects of the system between local and federal funding.
Goal 2: Preserve the System	Maintaining the system in a state of good repair, or preservation, was selected as one of the top five investment priorities for the 2045 MTP. Preservation projects may be funded with STP funds, including STP Flex, and NHPP.
Goal 3: Enhance Safety and Reduce Congestion	<p>Improving safety and reducing congestion were identified as two of the top transportation investment priorities going forward.</p> <p>A total of 36.45 miles of the local federal aid system were identified as deficient through the GVMC capacity analysis process. Encouraging a mode shift away from single occupant vehicles (SOVs) was identified as a plan recommendation, as widening is not always possible, or the preferred alternative, for some of our member jurisdictions. The implementation of the proposed projects increases continuous service and needed capacity.</p> <p>GVMC has historically supported the State's safety targets and has identified numerous needs to improve the safety of the transportation system. GVMC staff plans to analyze several of these options, specifically developing public education campaigns, going forward.</p>
Goal 4: Strengthen Land Use and Transportation Policies	Projects contained in the MTP will have impacts on land use adjacent to them. Local jurisdictions were consulted when GVMC staff updated our socioeconomic data, which was input into the new transportation demand model to project capacity deficiencies. Capacity deficient segments later became candidate projects for the 2045 MTP. Therefore, local land use plans better informed the data used to develop transportation projects.
Goal 5: Engage Stakeholders and the Public	The MTP was developed in cooperation with all the GVMC local jurisdictions, local road agencies, The Rapid, the Michigan Department of Transportation, the Federal Highway Association, private sector partners, and the general public. GVMC staff worked with a number of modal

	<p>subcommittees in addition to the regular transportation committees to identify transportation needs for the effective expenditure of resources. The MTP development process also followed the updated Public Participation Plan and included new methods to actively engage the general public in the decision-making process.</p> <p>Furthermore, GVMC staff collaborated with our list of consultation agencies through the process established in our newly developed and approved Consultation Plan. This process ensured consistency between planning documents.</p>
Goal 6: Ensure Equity, Access, and Mobility	<p>GVMC conducted an Accessibility Analysis in 2017 that is referenced in numerous sections of this document. Transit, autonomous vehicles, and nonmotorized modes of transportation may be pivotal in providing increased accessibility for all moving forward. Transit and nonmotorized modes of transportation were identified as two of the top five transportation system investment priorities going forward.</p> <p>Furthermore, GVMC staff performed an extensive environmental justice (EJ) analysis to ensure that no population groups were adversely impacted by the projects in this document.</p>
Goal 7: Protect and Enhance the Environment	<p>The projects in this document adhere to current air quality conformity requirements. GVMC staff also conducted an environmental mitigation analysis to suggest system-level mitigation techniques for transportation projects and, for the first time, added a section on the environment to the MTP, which included identified environmental needs and proposed solutions. This section is located in Chapter 6.</p>

Chapter 11: MTP Recommendations

As GVMC worked to develop this document, numerous needs emerged throughout our analyses of the transportation system, and more were voiced by public users of the transportation system and various members of our committees. Several of these needs have risen to the highest level of importance for our area, becoming recommendations to be addressed through the clear action steps outlined below before the development of our next MTP. The recommendations and action steps enhance the goals and objectives of this document, and by following the recommendations, we will work toward creating positive change within our area.

Recommendation 1: Work to increase transportation funding in GVMC's MPO area

Our infrastructure is crumbling, and the longer these repairs are delayed due to lack of funding, the more costly they become. However, we are unable to make a significant improvement in the state of our system based on current funding levels. Furthermore, other priorities, such as nonmotorized transportation and transit, also have lengthy lists of worthy, yet unfunded, projects. And there is over a billion dollars in unfunded needs for projects that are congestion deficient and/or safety deficient. The only way to improve these areas of the system is to secure additional funding.

Action Steps:

- *Continue to identify MPO transportation needs and funding gaps*
- *Continue to work with local transportation agencies, units of government, and partner organizations to encourage providing more federal, state and local funding for transportation in the GVMC MPO area.*

Recommendation 2: Work to improve safety for all users of the transportation system

At their November 6, 2019, Technical Committee meeting, the Committee noted that safety is a goal of the members and in the MTP itself, is considered in the development of all projects, and that lower speeds can improve safety. The legislature and state police currently set speed limits. Member agencies must work collaboratively with the legislature and state police to lower speed limits, where appropriate, to improve safety for all users of the transportation system.

Action Steps:

- Identify high crash locations and corridors
- Continue considering and including safety improvements during the development process for all projects where feasible
- Encourage more education for users of all transportation modes
- Work with transit providers to enhance the safety of transit users
- Work collaboratively with responsible agencies to enhance enforcement measures
- Encourage state and local lawmakers to address speed limit policies and laws where appropriate

Recommendation 3: Work to improve the condition and operation of the existing transportation system.

There has been extensive discussion by the MPO committee members and public comments regarding the need to improve the condition of the existing roads and bridges, reduce congestion and delays, improve reliability, and continue to improve transit service where feasible.

Action steps:

- *Provide adequate funding to preservation activities and projects to maintain the multimodal transportation system (roads, bridges, nonmotorized facilities, transit vehicles and facilities, etc.) in a state of good repair*
- *Continue to leverage funding through multiple agency partnerships to maximize infrastructure investments and multimodal opportunities*
- *Include operational improvements where feasible with preservation projects to improve system reliability and safety, and to reduce congestion and delays*
- *Work with transit operators to improve access to the existing system and enhance service where feasible*
- *Identify freight transportation needs and consider practical improvements during the project development process where feasible*

Recommendation 4: Work to create a mode shift from single occupancy vehicles (SOVs) to more active forms of transportation

The preferred mode of transportation for most within GVMC's MPO area is the single occupancy vehicle (SOV). So many single occupancy vehicles on the road can lead to traffic congestion and poorer air quality due to idling. Furthermore, according to the Michigan Department of Health and Human Services, Michigan consistently ranks in the top 10 to 15 most obese states in the U.S. Participating in more active forms of transportation can lead to healthier residents.

Action Steps:

- *Support policies and initiatives that encourage a mode shift from single occupant vehicles to more active forms of transportation, where feasible*
- *Support projects that can accommodate multiple modes of transportation*
- *Encourage Travel Demand Management with employers where appropriate*