



Chapter 2: Developing the MTP

Development Timeline

The development process for the FY2050 MTP began during the summer of 2022 and followed the process outlined below. Drawing on the success from previous long-range plans that we have developed, GVMC staff again worked closely with Grand Rapids area transit providers, the Michigan Department of Transportation (MDOT), and the Federal Highway Administration (FHWA). Meetings were also held with numerous committees and subcommittees to gather and share data and to inform this plan. Public input was sought continuously throughout the plan's development, with GVMC staff making additional efforts to engage the public at key milestones.

MTP Development Timeline		
MTP Development Steps	Updated Public Participation Plan (PPP) Approved	July 2021
	MTP Development Kickoff*	August 2022
	MTP Public Survey*	August-November 2022
	Student Poster Contest*	August – September 2022
	Vision Statement, Goals and Objectives Revised and Approved	January - March 2023
	2015 and 2050 Base Year Socio-Economic Data Developed	March 2023
	Transportation Needs Subcommittees – Need Identification	March – June 2023
	Travel Demand Model Calibration	May 2023
	Deficiency Analysis	May 2023
	MTP Bingo*	June-July 2023
	Needs/Deficiencies Approved by Technical and Policy Committees*	July 2023
	Financial Analysis	September – October 2023
	Investment Strategy Developed and Approved	October 2023
	Project List Developed and Approved	October-November 2023
	Transportation Alternatives Analyzed	October-November 2023
	Consultation	November 2023-January 2024
	Environmental Justice Analysis	December 2023 – January 2024
	Environmental Mitigation Analysis	December 2023 – January 2024
	Presentation of Draft MTP	March 2024
	Public Comment on Draft Document*	March-April 2024
	Committee Approval of MTP*	May 2024
	GVMC Board Approval of MTP*	June 2024

Table 1: MTP Development Timeline

**Denotes public outreach milestone in the development of the MTP*

The chapters that follow provide additional information about these MTP development steps, including how important decisions were made and the data behind them, how input from the public and stakeholders was sought, and how this feedback influenced the development of the document.

Federal Transportation Legislation

This document was developed in compliance with the current transportation bill, the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL). The IIJA was signed into law by President Biden on November 15, 2021, and continues to provide long-term surface transportation monies through fiscal year 2026 from the federal government. Highlights include:

\$350 Billion in Highway Programs Over 5 Years

\$350 Billion over 5 Years

The Bipartisan Infrastructure Law provides the basis for FHWA programs and activities through September 30, 2026. It makes a once-in-a-generation investment of \$350 billion in highway programs. This includes the largest dedicated bridge investment since the construction of the Interstate Highway System.

More than a Dozen New Highway Programs

New Programs

New programs under the Bipartisan Infrastructure Law focus on key infrastructure priorities including rehabilitating bridges in critical need of repair, reducing carbon emissions, increasing system resilience, removing barriers to connecting communities, and improving mobility and access to economic opportunity.

More Opportunities for Local Governments and Other Entities

New Opportunities

Many of the new programs include eligibility for local governments, Metropolitan Planning Organizations (MPOs), Tribes, and other public authorities, allowing them to compete directly for funding.

Learn more at <https://www.fhwa.dot.gov/bipartisan-infrastructure-law/>.

In the IIJA, the metropolitan transportation planning processes are continued and enhanced to incorporate performance goals, measures, and targets into the process of identifying needed transportation improvements and project selection. Public involvement remains a hallmark of the planning process. Requirements for a long-range Metropolitan Transportation Plan (MTP) continue, with the long-range plan to incorporate performance plans required by the Act for specific programs. The MTP must describe the performance measures and targets used in assessing system performance and progress in achieving the performance targets.

Planning Factors

The metropolitan planning program under the IIJA provides funding for the integration of transportation planning processes in the MPOs into a unified metropolitan transportation planning process, culminating in the preparation of a multimodal metropolitan transportation plan for the MPO. Title 23 of the United States Code, section 134(h), describes Federal Planning Factors issued by Congress to emphasize planning factors from a national perspective. The MPO must consider these factors when developing plans and annual programs. The IIJA continues with the same planning factors that were included in the FAST Act. All planning factors are listed in the chart below. These planning factors helped shape the formation of the vision statement, goals, and objectives for this MTP.

IIJA Planning Factors



Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency



Increase the safety of the transportation system for motorized and nonmotorized users



Increase the security of the transportation system for motorized and nonmotorized users



Increase the accessibility and mobility of people and freight



Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns



Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight



Promote efficient system management and operation



Emphasize the preservation of the existing transportation system



Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation



Enhance travel and tourism

Planning Emphasis Areas

The MTP also takes into consideration the following Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) planning emphasis areas:



Tackling the Climate Crisis



Equity and Justice40 in Transportation

Transportation plans and investments should help achieve the national greenhouse gas reduction goals of 50-52% below 2005 levels by 2030, and net-zero emissions by 2050, and increase resilience to extreme weather events and other disasters resulting from the increasing effects of climate change.

Work to advance racial equity and support for underserved and disadvantaged communities to ensure public involvement in the planning process and that plans and strategies reflect various perspectives, concerns, and priorities from impacted areas.



Complete Streets

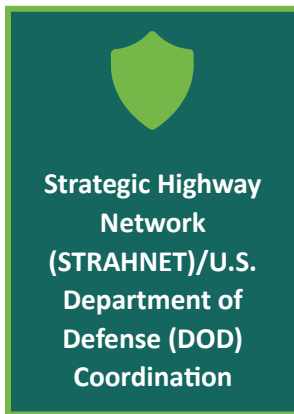


Public Involvement

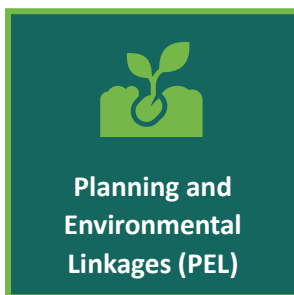
A complete street is safe, and feels safe, for everyone using the street. The goal is to provide an equitable and safe transportation network for travelers of all ages and

Early, effective, and continuous public involvement brings diverse viewpoints into the decision-making

abilities, using all modes, including those from marginalized communities facing historic disinvestment.



MPOs and State DOTs are encouraged to coordinate with representatives from DOD in the transportation planning and project programming process on infrastructure and connectivity needs for STRAHNET routes and other public roads that connect to DOD facilities.



The use of PEL is a collaborative and integrated approach to transportation decision-making that considers environmental, community, and economic goals early in the transportation planning process and uses the information, analysis, and products developed during planning to inform the environmental review process. PEL leads to interagency relationship building in the early stages of planning to inform and improve project delivery timeframes, including minimizing duplication and creating one cohesive flow of information. This results in transportation programs and projects that serve the community's transportation needs more effectively while avoiding and minimizing the impacts on human and natural resources.

process. Public involvement should include virtual public involvement (VPI) options while ensuring continued public participation by individuals without access to computers and mobile devices.



MPOs and State DOTs are to coordinate with FLMA in the transportation planning and project programming process on infrastructure and connectivity needs related to access routes and other public roads and transportation services that connect to Federal lands. MPOs must appropriately involve FLMA in the development of the Metropolitan Transportation Plan.



MPOs are encouraged to incorporate data sharing and consideration into the transportation planning process because data assets have value across multiple programs. Data sharing principles and data management can be used for a variety of issues, such as freight, bike and pedestrian planning, equity analyses, managing curb space, performance management, travel time reliability, connected and autonomous vehicles, mobility services, and safety. Developing and advancing data sharing principles allows for efficient use of resources and improved policy and decision-making at the State, MPO, regional, and local levels for all parties.

Performance Measures and the MTP

The Federal Highway Administration defines Transportation Performance Management as “a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals.” This approach uses performance measures, targets, and data to make better informed decisions about how to invest transportation funding.

A key feature of the IIJA is the establishment of a performance- and outcome-based program, originally introduced through the Moving Ahead for Progress in the 21st Century (MAP-21) Act, which was signed into law on July 6, 2012. The objective of this program is for the investment of resources in projects that collectively make progress toward the achievement of national goals which include: safety, infrastructure condition, congestion reduction, system reliability, freight movement, environmental sustainability, and reduced project delivery delays.

The 2050 MTP has been developed with these goals and performance measures in mind and in the case of safety, system performance, and pavement and bridge condition, are the basis for determining project eligibility in our region. CFR 450.324(f)(2) also requires that the MTP contain a description of the performance measures and performance targets used in assessing the performance of the transportation system. The resulting [System Performance Report](#) is a companion document to the 2050 MTP. The purpose of this report is to outline the state and MPO performance measures and targets and assess the performance of the GVMC in each of the four performance areas. Each section includes an overview of the performance area, the currently adopted state and MPO targets, an examination of GVMC’s performance, a description of the policies and plans that inform GVMC’s approach to target attainment, and GVMC’s efforts to integrate the targets into project development and programming for the MTP and TIP.

Collaborative Efforts

To develop this document, GVMC collaborated with local jurisdictions, regional stakeholders, the MTP Steering Committee and mode-based committees, stakeholder “consultation” agencies, and the public. Key opportunities for collaboration included:

- (1) Working with local jurisdictions to update socio-economic data to determine housing and employment growth
- (2) Working with the MTP Steering Committee and our Transportation Committee members to revise the vision statement, goals and objectives
- (3) Working with mode-based committees to complete our mode-based needs and deficiencies analysis
- (4) Working with local jurisdictions to complete a financial analysis to determine anticipated local, federal, and state revenues that are reasonably expected to be available over the life of the MTP
- (5) Working with the MTP Steering Committee and Transportation Committee members to determine an investment strategy for addressing identified need based on available resources
- (6) Working with our Transportation Committee members to develop a project list based on the identified investment strategy and available resources

These efforts were also informed by public input that was sought continuously during the development of this document, with additional outreach efforts to seek public feedback at pivotal milestones during the plan’s development. Furthermore, GVMC made additional collaborative efforts by reviewing other long-range planning documents from regional planning partners to sync elements of our plan with theirs. Additional information about how GVMC collaborated with these parties is detailed in the remainder of this section. Key decisions made at major Plan development milestones were also brought to the Technical and Policy Committees for approval through the process outlined on page 21.

Collaboration with Local Jurisdictions and Regional Stakeholders

GVMC’s first step in developing the 2050 MTP was updating socio-economic data. To achieve this, GVMC staff scheduled hybrid or in-person individual meetings with every jurisdiction within the MPO area to discuss where they expected population and employment growth to occur through 2050, safety issues, transit needs, nonmotorized deficiencies,

bottlenecks in the freight network, congestion and delay issues, among others. Furthermore, staff also had several meetings and conversations with staff from The Rapid, the Gerald R. Ford International Airport, transit operators, and business organizations to determine transportation needs throughout the region.

GVMC also worked with local jurisdictions and regional stakeholders to help spread the word about our public survey to increase the response rate and to ensure that the responses were representative of the entire area. Because of the strong relationship GVMC has with our member agencies, many of them shared the link for the survey on their own webpages and social media pages on their own. To increase engagement and create friendly competition between communities, GVMC held a competition for a \$1,000 beautification grant, and the five communities with the highest response rates were entered in the contest. For areas that had low survey response rates, GVMC reached out to the city, village, or township directly and requested that they share the link on their website or social media pages. For more information on the survey, please visit the [Public and Stakeholder Engagement Companion Document to the 2050 MTP](#).

Collaboration with the Metropolitan Transportation Plan Steering Committee

The MTP Steering Committee, which was composed of members of the MTP Steering Committee for the 2045 MTP as well as several new additional members, guided the formation of the MTP. This Committee was instrumental throughout the development of the document and was convened three times:

November 1, 2022 – Introductory committee meeting to discuss the Committee’s vision for the plan and determine winners for the student poster contest

January 4, 2023 – Meeting to develop the vision statement, goals and objectives for the plan

October 11, 2023 – Meeting to determine an investment strategy for addressing identified needs in GVMC’s modal needs analysis based on available resources.

The MTP Steering Committee’s recommendations were brought through our Committee structure outlined on page 21 for approval. The MTP Steering Committee was comprised of the chair and vice chair of our Technical Committees, the chair of our Policy Committee, and the chair of our Safety Committee. Represented agencies included:

Area Agency on Aging of Western Michigan	Kent County Health Department
Caledonia Township	Kent County Road Commission
City of Grand Rapids	MDOT
City of Kentwood	Ottawa County Road Commission
City of Walker	Roosevelt Park Neighborhood Association
Disability Advocates	Tallmadge Township
Gerald R Ford International Airport	The Rapid
Grand Rapids Chamber of Commerce	The Right Place
Kent County Emergency Services	West Michigan Trails

Collaboration with Modal Committees

Federal legislation has long required that long-range transportation plans be multi-modal in nature, meaning they address transit, rail, air, nonmotorized, and roads. GVMC staff leaned on the work of its modal committees for assistance in conducting a mode-based needs analysis to determine needs for various aspects of the system. These modal committees include GVMC’s Freight Committee, Nonmotorized Committee, and Safety Committee. These modal subcommittees have representatives from the Technical and Policy Committees and organizations with technical expertise that contribute to our understanding of regional transportation needs. The results of this comprehensive needs-based analysis are included in Chapter 5.

Collaboration with Consultation Organizations

GVMC collaborated with consultation organizations during the development of the MTP per the process described in our Consultation Plan. More information on consultation outreach efforts is included in Chapter 9.

Collaboration with Housing

For the 2050 MTP, GVMC collaborated with housing agencies by researching the housing agencies in our MPO area and adding them to our consultation and public involvement lists. We also held three hour-long listening sessions with separate groups of Mel Trotter guests to discuss issues they've experienced with housing and transportation. Mel Trotter is at the forefront of battling homelessness through community partnerships and innovating solutions. Listening sessions were held on Wednesday, February 14, 2024, at 10:00 am and 4:00 pm and Wednesday, February 21, 2024, at 3:00 pm. While each listening session focused on a unique group of guests that participate in three different programs at Mel Trotter, several themes emerged, including:

- A need to implement 24-hour bus service, especially to/from industrial areas, so that there is public transportation access to second and third shift factory jobs
- A need to improve access to transit information; Information requests included help with learning how the transit system works to having bus schedules available on the bus, at Rapid Central Station, and at the bus stops.
- A need to improve safety at bus stops; Many reported walking several blocks out of their way to avoid bus stops where violence or drug dealing was known to take place
- A need for improvements that benefit pedestrians and those using mobility devices like walkers and wheelchairs, such as fixing unlevel sidewalks and improving street lighting.
- A need for secure bike lockers at Rapid Central Station

GVMC hopes to continue this partnership and build additional ones as initial steps in developing a future housing coordination plan for our area.

Collaboration with DOD

While MPOs are encouraged to coordinate with representatives from DOD in the transportation planning and project programming process on infrastructure and connectivity needs for STRAHNET routes and other public roads that connect to DOD facilities, GVMC was unable to locate any local DOD facilities within our MPO boundary. However, GVMC continually updates our consultation list and will add DOD contacts if, and when, they become available.

Collaboration with FLMA

For the 2050 MTP, GVMC collaborated with FLMA agencies by adding FLMA contacts provided by the Michigan Department of Transportation (MDOT) and the Federal Highway Association (FHWA) to our consultation list.

Collaboration with the Public

GVMC followed the procedures explained in our Public Participation Plan, approved in 2021, to encourage public involvement throughout the development of the MTP. GVMC also solicited feedback from the public through a survey at the beginning of the MTP development process, which received 1,109 responses, and made additional efforts to engage the public at four milestones: (1) Kickoff to MTP Development, (2) Pre-Programming Collaboration (invitation for the public to review and comment on the results of the modal needs analysis), (3) Draft MTP, environmental justice, and air quality results (if applicable) completed and available for public comment, and (4) Adoption of draft document. GVMC's Transportation Committee meetings are also open to the public, and meeting notices are posted online.

For more information, please refer to the following:

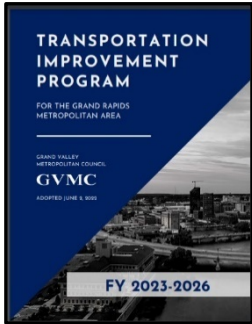
- (1) GVMC's Public Participation Plan at www.gvmc.org/public-involvement, which details how the public is engaged during the development of all of GVMC's major documents
- (2) The [Public and Stakeholder Engagement Companion Document](#) includes the full results of GVMC's public survey and our student poster contest, describes how GVMC [collaborated](#) with the public, including methods used, comments received, and how feedback was incorporated in the document.

Collaboration with Other Agency's Planning Documents

A list of corresponding planning documents from other agencies in our MPO area is listed in Appendix C.

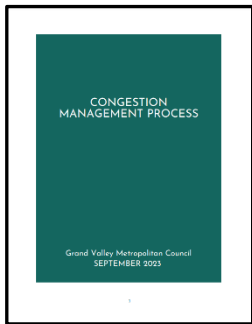
Documents that Informed this MTP

Several documents informed the development of the 2050 MTP, including:



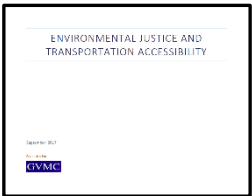
[GVMC – FY2023-2026 Transportation Improvement Program \(2022\)](#)

The Transportation Improvement Program (TIP) identifies proposed projects developed by local agencies in accordance with the joint regulations of the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). These regulations establish the TIP as the programming phase of the overall continuing, comprehensive, and cooperative (3C) planning process. This planning process includes local jurisdictions, transit agencies, and state and federal transportation officials. All federal monies returned to the Grand Rapids metro area from the federal fuel tax are distributed through this process.



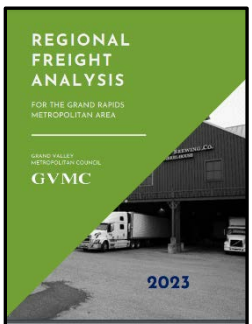
[GVMC – Congestion Management Process \(CMP\) Document \(2023\)](#)

A Congestion Management Process (CMP) is intended to be a systematic way of monitoring, measuring, and diagnosing the causes of current and future congestion on a region's multi-modal transportation systems; evaluating and recommending alternative strategies to manage or mitigate current and future regional congestion; and monitoring and evaluating the performance of strategies implemented to manage or mitigate congestion.



[GVMC – Environmental Justice Transportation Accessibility Analysis \(2017\)](#)

GVMC's Environmental Justice and Transportation Accessibility Analysis was performed to assess regional access to roadway, transit, and nonmotorized transportation networks, as well as accessibility to key destinations via transportation systems.



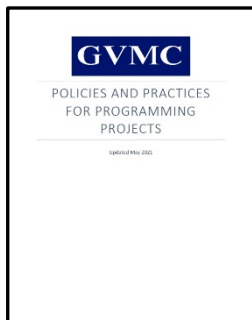
[GVMC – Freight Analysis \(2023\)](#)

This document outlines the current state of the transportation system and freight operations throughout the Grand Region. This assessment highlights both quantitative data providing tonnage, volumes, and values flowing throughout the region, as well as qualitative data providing insight to how users experience freight throughout our transportation network. All the data collected in this analysis is intended to be digested as Phase 1 in creating a regional Freight Plan.



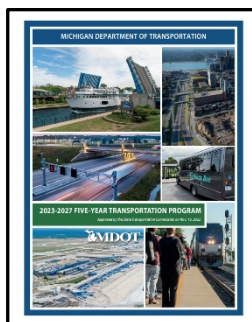
[GVMC Active Transportation Plan \(2024\)](#)

The active transportation element of the MTP contains additional information about active transportation in the GVMC region. Previously titled Nonmotorized Plan, the updated Active Transportation Plan encompasses both human-powered modes of transportation such as walking and cycling in addition to micromobility devices. The primary focus of this plan is threefold: to evaluate existing conditions and identify the region's active transportation needs, determine actionable strategies and solutions that can be used to address the needs, and to identify potential projects and project priorities.



[GVMC – Policies and Practices for Programming Projects \(2021\)](#)

As the title implies, this document describes GVMC's policies and practices for determining which projects are eligible for federal funding and what type of fixes they qualify to receive.



[MDOT – 2020-24 Five-Year Transportation Plan \(FYTP\) \(2022\)](#)

This document provides information on planned investments for all components of the transportation network for which MDOT is responsible, including highways, bridges, bus, rail, aviation, marine, and nonmotorized transportation. This document is created in alignment with the established State Long-Range Transportation Plan (SLRTP) and State Transportation Commission (STC) goals established to ensure the preservation of the transportation network to provide a safe and connected system for Michigan's citizens, as required.



[MDOT – Michigan Mobility 2045 Plan](#)

The Michigan Mobility 2045 Plan, also known as the State Long-Range Transportation Plan, is a 25-year plan for transforming Michigan's transportation system. The plan is the first of its kind to incorporate not only an overall vision of the state's transportation system, but to include two additional federally required documents: the State Rail Plan and State Freight Plan. These three documents combined into one will provide a streamlined vision of the transportation future in Michigan across all modes. Additionally, MM2045 includes a Statewide Transit Strategy Report and an Active Transportation Plan.

Collaboration and Transportation System Security and Emergency Preparedness

Increasing the security of the transportation system for motorized and nonmotorized users is an IJIA planning factor. To achieve system security, GVMC collaborates with MDOT, which has a central statewide Emergency Management Plan in place to address Homeland Security Issues. Any threats or potential threats identified by the federal Department of Homeland Security (DHS) or Michigan State Police (MSP) are communicated to MDOT field staff to monitor specific, or categories of, facilities, structures, etc. Monitoring can be accomplished visually by MDOT/Local Agency staff, local law enforcement, or using the ITS cameras, which are now covering a greater proportion of the state transportation system. Any unusual activities observed are reported to the MSP and/or the federal DHS. State of Michigan efforts are also coordinated with the Federal Highway Administration and DHS activities. In addition, any potential threats identified to local facilities are communicated to local officials and/or law enforcement agencies. Generally, transportation emergency and disaster situations are initially identified by local agencies and then communicated and coordinated with local MDOT

and MSP offices; if needed, the Governor may request federal disaster or emergency declarations, which then can make federal resources available. This can be a dynamic process, with emergency actions and procedures initiated by either the state or local agencies affected. Communication is a critical component of the process.

GVMC supports MDOT’s efforts to maintain an Emergency Response Plan which “provides for MDOT actions during all-hazards incidents that indirectly or directly affect the traveling public, local and/or MDOT resources, particularly as these incidents escalate.” These hazards may include flooding, severe weather, power outages, fires, civil disturbances, MDOT or local facility damage, mass transportation service interruption and more which “trigger actions to prevent or minimize loss of life, injuries, damage to property and/or the environment as well as preserve public health or safety, and to minimize disruptions of government, social or economic activities.” This plan can expand and contract as appropriate in direct proportion to the level of the incident and outlines MDOT’s responsibility to expedite core functions as incidents escalate. This plan is in compliance with all applicable provisions under the authority of Michigan Emergency Management, Act 390 of 1976, as amended, as well as components of the Michigan Emergency Management Plan and MDOT Emergency Management Manual. MDOT’s Business Continuity Plan (BCP) supports this plan by providing guidance during all-hazards incidents that disrupt operations and/or prevent occupancy of normal workplaces.

These focused efforts will ensure that security issues are integrated into the GVMC transportation planning process.

2050 MTP Approval Process

GVMC Transportation Committee Structure

The Grand Valley Metropolitan Council’s transportation committees include members that represent all modes of transportation throughout the local transportation community, as well as eligible cities, townships, villages, and others. The Grand Rapids Chamber of Commerce, the Michigan Department of Transportation, Hope Network, and The Right Place also participate.

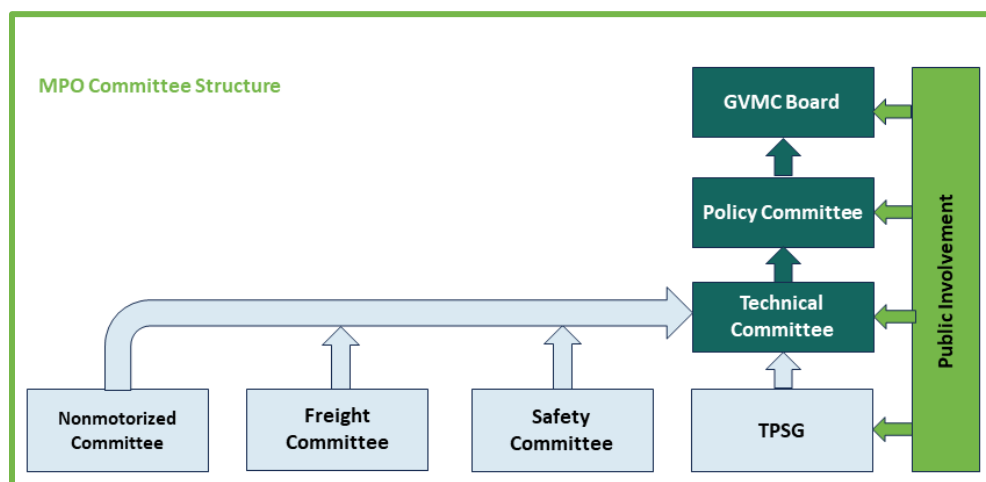


Figure 2: MPO Committee Structure

There are four primary committees that impact the transportation planning and decision-making process in the Grand Rapids Metropolitan Area. The **Transportation Programming Study Group (TPSG)** is an ad-hoc committee of the Technical Committee that is charged with one task: making programming recommendations about specific transportation projects through the short-range Transportation Improvement Program. All other issues that need to be considered are brought first to the Technical Committee and subsequently make their way up the committee structure explained in the chart above. The **Technical Committee** includes representatives from each of the member agencies and communities that has expertise in the technical areas of the transportation process. The **Policy Committee** is made up of representatives of each member agency who have a policy development responsibility in their respective agencies/communities. Most members are elected officials or appointed by the elected officials of their agency/community. The **GVMC Board** is composed of the chief elected officials (and/or their designee) for the member agencies. Some of the GVMC Board members participate on the Policy Committee, so there is often familiarity with transportation issues and discussions at this level.

A list of member agencies and jurisdictions is on the following page, while a complete list that includes designated representatives is included in Appendix D.

Committee Meeting Schedule

Technical Committee meets at 9:30 a.m. the first Wednesday of the month in January, March, May, July, September, and November at Rapid Central Station, 250 Cesar E. Chavez Ave SW, Grand Rapids, MI 49503, unless otherwise noted.

Policy Committee meets at 9:30 a.m. the third Wednesday of the month in January, March, May, July, September, and November at Rapid Central Station, 250 Cesar E. Chavez Ave SW, Grand Rapids, MI 49503, unless otherwise noted.

GVMC Board typically meets at 8:30 a.m. the first Thursday of the month four times a year at the Kent County Administration Building, 300 Monroe Ave. NW, Grand Rapids, Michigan, unless otherwise noted.

All meetings are open to the public, and meeting notices and agendas are posted on our website to encourage public participation and attendance.

Committee Representation

Technical and Policy Committee

Ada Township	
Algoma Township	Federal Transit Administration*
Allendale Township	Gaines Charter Township
Alpine Township	Georgetown Charter Township
Byron Township	Gerald R. Ford International Airport
Caledonia Township	Grand Rapids Chamber of Commerce*
Cannon Township	Grand Rapids Charter Township
Cascade Charter Township	Hope Network* (Technical Committee only)
City of Cedar Springs	ITP/The Rapid
City of East Grand Rapids	Jamestown Township
City of Grand Rapids	Kent County Board of Commissioners
City of Grandville	Kent County Road Commission
City of Hudsonville	Michigan Department of Transportation
City of Kentwood	Ottawa County Board of Commissioners
City of Lowell	Ottawa County Road Commission
City of Rockford	Plainfield Charter Township
City of Walker	Tallmadge Township
City of Wyoming	West Michigan Environmental Action Council*
Courtland Township	
Federal Highway Administration*	

**Non-Voting Member*

Transportation Programming Study Group

City of Cedar Springs

City of East Grand Rapids

City of Grand Rapids

City of Grandville

City of Hudsonville

City of Kentwood

City of Lowell

City of Rockford

City of Walker

City of Wyoming

Gerald R. Ford International Airport

Grand Rapids Chamber of Commerce*

Hope Network*

ITP/The Rapid

Kent County Road Commission

Kent County townships

Michigan Department of Transportation

Ottawa County Road Commission

Ottawa County townships



Bridge culvert rehabilitation project; photo courtesy of the KCRC

2050 MTP Committee Action Items

GVMC brought various elements of the MTP document through the Technical and Policy Committee structure outlined on page 21. These elements included (1) the vision statement, goals and objectives, (2) the modal needs analysis, and (3) the project list, which included the results of the financial analysis. After the consultation process and an environmental justice and environmental mitigation analysis were completed for the project list, the draft document was brought to the Technical and Policy Committees for approval. Upon approval, the public was asked to review and comment on the draft MTP. After the conclusion of this public comment period, all comments were considered, and the final document was presented to the Technical and Policy Committees, and lastly, the GVMC Board, for approval. The public was given one last opportunity to comment before final approval by the Board, the final approving body for this document.

Because GVMC is considered a limited orphan maintenance area for the 1997 ozone standard, GVMC must also send the document on to MDOT, FHWA, and the EPA after receiving Board approval to ensure that all air quality requirements have been completed according to federal regulation. The graphic below depicts the approval process for the 2050 MTP.

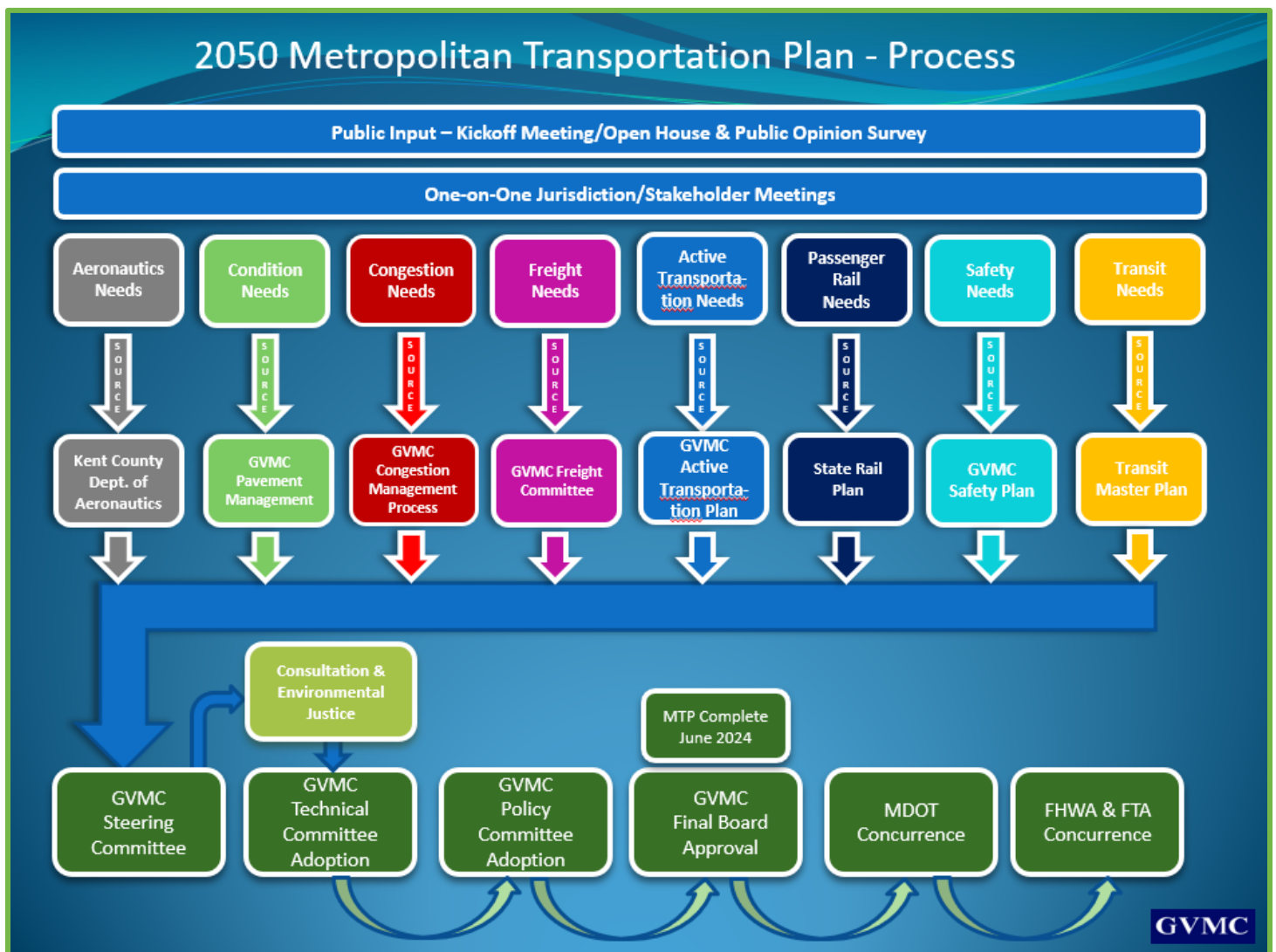


Figure 3: MTP Approval Process



Chapter 3: Determining a Vision for the Future

The vision statement, goals, and objectives of the Metropolitan Transportation Plan (MTP) are meant to guide the transportation planning process for the entire region. They embody a desired vision to be achieved through future planning efforts and provide direction for making transportation decisions by contributing strongly to the selection and evaluation of projects and influencing the development of the short-range [Transportation Improvement Program \(TIP\)](#).

GVMC started the process of developing the vision statement, goals and objectives for the 2050 MTP by convening the Metropolitan Transportation Plan Steering Committee on Wednesday, January 4, 2023, to review these elements from the 2045 MTP and determine areas for revision. GVMC presented the Committee with the following for discussion:

- Data from the public survey (see [Public and Stakeholder Engagement Companion Document](#)) as a [story map](#)
- A word cloud that included key words from the ice breaker prompt: “Something you’d like to see included in our long-range transportation vision for the area” from the first MTP Steering Committee meeting held on November 1, 2022
- The finalized goals and objectives from the GVMC Nonmotorized and Micromobility Plan

Staff also referenced federal planning factors during the meeting. At the 1st MTP Steering Committee meeting, the members were asked to select winners of the MTP student poster contest and to keep the students’ ideas in mind as they developed the transportation vision for our area.

Multiple changes were made to the vision statement and the goals and objectives from the previous MTP, and these elements were updated accordingly for the 2050 MTP. Staff presented the vision statement, goals, and objectives for the 2050 MTP to the Technical and Policy Committees in March of 2023, where they were unanimously approved.

Vision Statement

The 2050 MTP establishes a vision of how the future multimodal transportation system will serve the people and businesses of Kent and eastern Ottawa Counties. The vision statement is:



Through cooperation and collaboration with our members, regional stakeholders, and the public, GVMC will continue to enhance a sustainable and resilient multimodal transportation system that is accessible, safe, reliable, environmentally sound, socially equitable, economically viable and adaptable for future growth, maximizing the use of available resources.

Goals and Objectives

To achieve the vision statement, the region’s agencies and jurisdictions must work cooperatively to develop strategies to effectively distribute transportation funding. The following goals reflect the vision statement and are supported by several measurable objectives. The goals and objectives are not ranked or listed in order of importance. They all support the federal planning factors and emphasis areas.

Goal 1: Further Develop an Efficient Multimodal System



Objective 1a: Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight

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

Objective 1c: Target investments to keep the region's supply chains moving smoothly and address urban truck bottlenecks

Objective 1d: Implement strategies to promote efficient system management and operations that result in the safe and reliable movement of people and freight

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

Objective 1f: Advance data sharing practices that allow for efficient use of resources and improved policy and decision making at the state, regional, and local levels

Goal 2: Preserve Infrastructure and Manage System Operations



Objective 2a: Apply transportation asset management principles and techniques to identify, assess, and maintain existing transportation infrastructure in support of federal performance measures

Objective 2b: Support the State of Good Repair federal performance measures and the priorities established in the ITP Transit Master Plan

Objective 2c: Identify strategies and recommend investments that preserve and enhance regional transit systems

Objective 2d: Reduce the reliance on Single Occupancy Vehicles (SOVs) by developing policies that encourage the use or development of active and low-impact modes of transportation and promoting services, such as Rideshare, that increase vehicle occupancy rates

Objective 2e: Employ the Congestion Management Process to systematically monitor, measure, diagnose, and recommend travel management alternatives and system improvements for current and future congestion on our region's multi-modal transportation system

Objective 2f: Promote and advance travel demand management (TDM) practices and strategies to manage future traffic growth, improve system efficiency, mitigate congestion, and spread the travel demand evenly throughout the day, where feasible, in line with the GVMC Regional TDM Plan

Objective 2g: Support the use of Intelligent Transportation Systems (ITS) and incident management to reduce the potential for secondary traffic incidents and non-recurring congestion, and promote sharing ITS data between agencies to streamline and improve incident management response

Objective 2h: Improve the travel time reliability of the system in support of federal performance measures to create a consistent experience for all road users

Goal 3: Enhance Transportation Safety and Security



Objective 3a: Improve safety of the transportation system for motorized, nonmotorized and vulnerable road users in support of federal performance measures by identifying and prioritizing projects that will reduce the likelihood or severity of crashes, promoting complete streets, and incorporating safety improvements with all transportation projects where feasible and practical

Objective 3b: Continue to promote GVMC's safety education and outreach program to inform our members, stakeholders, and the public about safe walking, riding, and driving practices and expand the program to include additional safety messaging about driver impairment, distracted driving, and other behaviors that can lead to crashes

Objective 3c: Support initiatives and policies that increase safety and security for traveling passengers

Objective 3d: Increase security of the transportation system by incorporating applicable emergency relief and disaster preparedness plans, strategies and policies that support homeland security, as appropriate, to safeguard the security of all motorized and nonmotorized users

Goal 4: Strengthen Land Use and Transportation Policies



Objective 4a: Encourage the coordination and linkage of transportation and land uses to improve equitable access to the entire system for all users and reduce number and length of trips when possible

Objective 4b: Develop transportation plan data and projections using up-to-date local land use data and regional population and employment forecasts

Goal 5: Educate and Engage Members, Stakeholders, and the Public



Objective 5a: Provide continual and transparent opportunities for our members, stakeholders, and the public to actively participate in the transportation decision making process and learn about transportation issues through comprehensive education and outreach, including in-person events, meetings, and open houses; lunch and learns; social media and other virtual public involvement tools in line with our Public Participation Plan

Objective 5b: Continue to build partnerships with organizations that can help us expand our educational and engagement reach

Objective 5c: Ensure that the public involvement process is equitable by using a variety of outreach strategies that reach and engage stakeholders and the public, with special consideration given to ensuring the inclusion of people traditionally underserved by the transportation planning process and those without internet access

Goal 6: Ensure Equity, Access, and Mobility



Objective 6a: Implement improvements for all transportation system users that foster increased accessibility (to employment, education, day care, medical facilities, housing, services, neighborhoods, recreation and fresh food),

economic development and vitality, and improved quality of life for all people, regardless of race, age, ability, or economic status

Objective 6b: Foster environmental justice through the maintenance of a planning process that does not unfairly affect any one segment of our community and supports economic opportunity in disadvantaged communities that have been historically marginalized and overburdened by pollution and underinvestment in housing, transportation, water and wastewater infrastructure, recreation, and healthcare

Objective 6c: Support the Federal Justice 40 initiative by ensuring MPO plans and programs advance Federal investments to disadvantaged communities

Goal 7: Protect and Enhance the Environment and Public Health



Objective 7a: Promote clean energy, electric and alternative fueled vehicles, and energy conservation to help achieve national greenhouse gas reduction goals and improve public health

Objective 7b: Increase access to and encourage the use of active modes of transportation that reduce emissions and improve quality of life and public health

Objective 7c: Evaluate opportunities to reduce personal and freight vehicle travel and associated air pollution in communities near high-volume corridors to protect public health

Objective 7d: Encourage the reduction and mitigation of stormwater and other environmental impacts of surface transportation projects

Objective 7e: Increase transportation system resilience to extreme weather events and other disasters by determining vulnerabilities to climate change impacts and evaluating potential solutions for implementation

Goals and Objectives and Support of IIJA Planning Factors

To see how these goals and objectives support IIJA planning factors, please see Appendix E.



84th Street Kalamazoo Roundabout Safety Project; photo courtesy of the KCRC



Chapter 4: Identifying Household & Employment Growth

GVMC used our model to determine population growth for our planning area, which includes our MPO area (Kent and eastern Ottawa Counties) as well as Blendon, Polkton, Wright, and Chester Townships and the City of Coopersville. These additional townships and the City of Coopersville are also known as the “donut area.” While MPO funds cannot be spent outside of our MPO area, GVMC is responsible for including Blendon, Polkton, Wright, and Chester Townships and the City of Coopersville in our modeling efforts. According to our analysis, population is expected to increase by 91,995 between 2020 and 2050 in GVMC’s planning area. That’s almost equivalent to adding the entire population of the City of Walker and the City of Wyoming to our planning area over the next 30 years. Currently, the population of our planning area is 784,468. For additional information on population growth by jurisdiction, *please view the table in Appendix F.*

One of the most important elements in the development of a long-range transportation plan is an assessment of household and employment data for the region. Socioeconomic (SE) data forecasts are essentially an inventory of what currently exists in terms of households and employment and what is projected for the year 2050. For the 2050 Metropolitan Transportation Plan (MTP), GVMC, in collaboration with the Transportation Committees and local jurisdictions, collected household and employment projections through 2050 for use in the travel demand model.

Household and employment projections developed for the 2050 MTP used nationally recognized data sources such as U.S. Census Data, American Community Survey (ACS) data, MDOT’s 2017 and 2021 master employment files, Bureau of Economic Analysis (BEA) data, and Regional Economic Model Inc. (REMI) data as the basis for projections. Local information, such as building permits, and examining the accuracy of employer data can help to refine the national data sets and better reflect regional trends. Together the household and employment projections are referred to as the socioeconomic projections, and they serve as the basis for projecting future travel patterns and for identifying current and future deficiencies in the transportation system.

The SE data collected is recorded by Traffic Analysis Zone (TAZ), as this is the unit used in the travel demand model. The boundary of a TAZ is usually a major street or highway, body of water, a census defined boundary, or another major physical feature, and there are approximately 860 of them in the area. Please refer to Map 2 on the following page for additional information. The TAZs allow for the transportation network to be divided into smaller pieces that have similar transportation characteristics to allow for more effective analysis of travel patterns and a better simulation of future transportation activities. A general map of GVMC’s TAZ’s can be found in Appendix F.

Household and employment information is populated into the travel demand model by TAZ to help understand the number of trips produced and attracted to each zone. With information about the number of trips by zone, the model can calculate those road segments anticipated to be near or over capacity (capacity deficient) in the future. Road segments that are near or over capacity can result in unreliable travel times, congestion, inefficient movement of people and goods, and unsafe travel conditions. This process is discussed in the “Congestion” section in Chapter 5. It is important to keep in mind that GVMC is responsible for modeling for some areas beyond the MPO boundaries for the Michigan Department of Transportation (MDOT). These areas including Blendon, Polkton, Wright, and Chester Townships, and the City of Coopersville, are not part of any MPO, but they were included in the SE data collection process. Please see Map 2 on the following page for additional information.

2019 Base Year Data

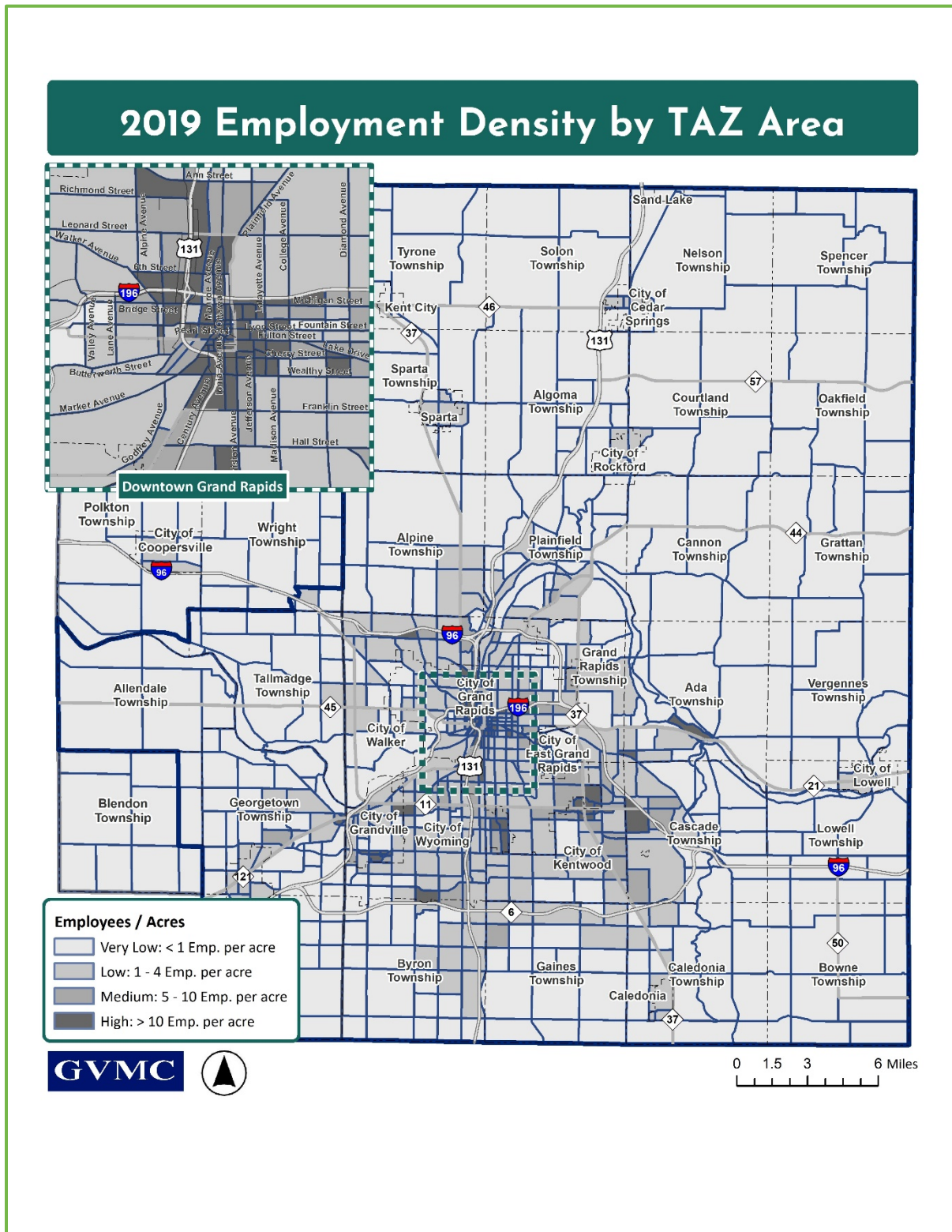
To initiate the SE data process, staff first established a 2019 base data statistics for households and employment, from which projections into the outer years of the MTP could be made. Much of this work was conducted with assistance from GIS software, as this data is geographical in nature.

Household totals were developed by applying a household growth adjustment and factored down from 2020 U.S. Census Block totals using prior ACS and Census summary data. They were then aggregated to TAZ's to interpolate the 2019 base year. See the map below for 2019 occupied housing unit density by TAZ.



Employment - 2019

The base year 2019 TAZ totals were based on MDOT's 2017 and 2021 employer database estimates that were adjusted to REMI 2015 and 2020 county forecast sector totals. These were aggregated to the TAZ level and verified by staff making sure that the data points for the larger employers were placed in the correct location to ensure they were incorporated into the correct TAZ. See the map below for 2019 employment density by TAZ.



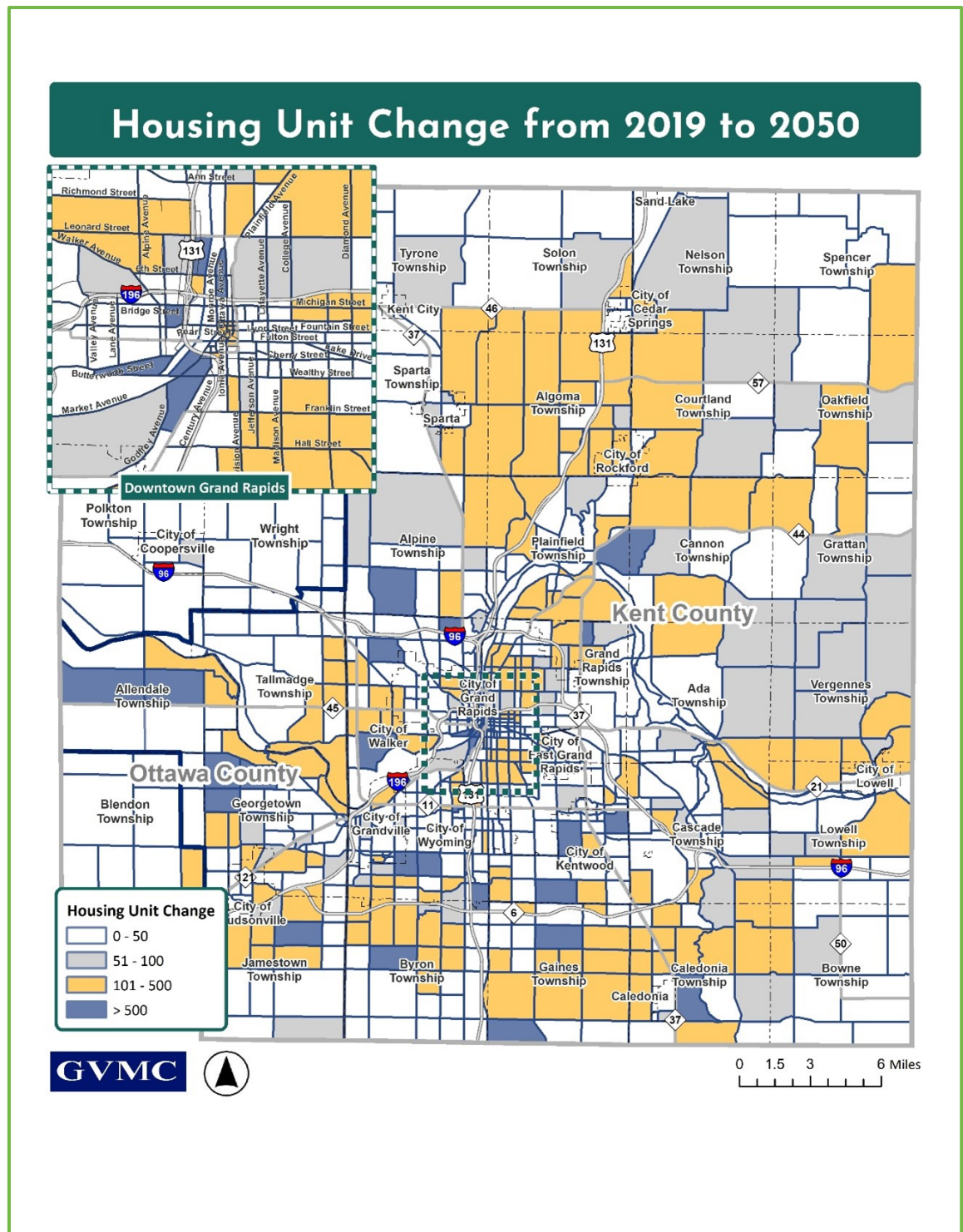
Map 3: 2019 Employment Density by TAZ Area

2050 Projected Data

GVMC received initial household and employment TAZ-level estimates out to 2050 (as well as interim years 2025, 2030, 2040, and 2050) from the State Demographer. Staff then aggregated these totals up to the jurisdiction level and met with local planners throughout the region to place growth back at the TAZ-level based on their local knowledge of development expectations. This local input was incorporated using GIS, while maintaining county control totals as close as possible throughout this process. To view a GIS map application depicting the results from this process, click [here](#).

Households - 2050

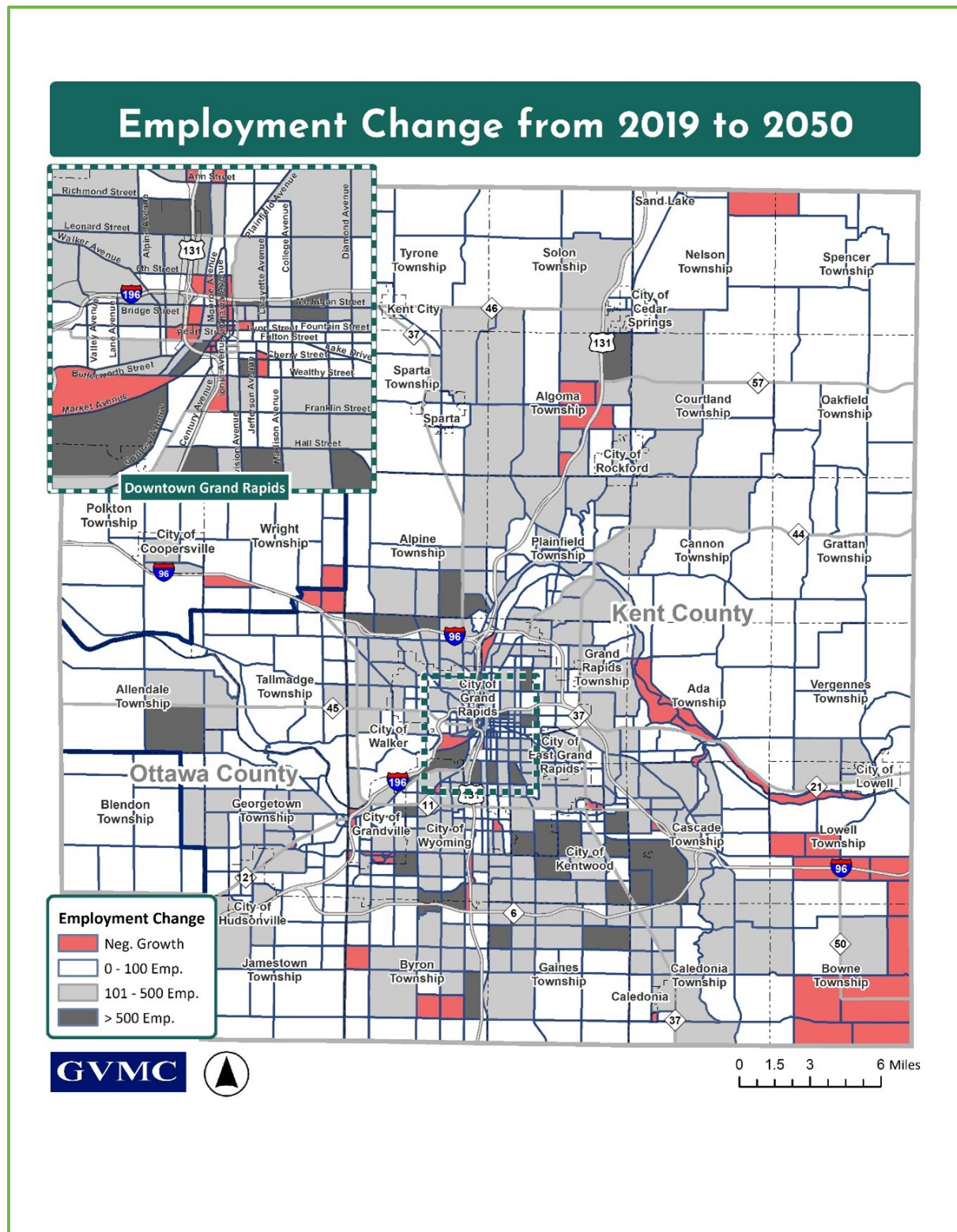
It is expected that the region will grow by about 80,000 households by 2050. Of this number, about 21% are expected to be added within the City of Grand Rapids, and over 45% are expected to be added in townships in the region. While many areas are anticipated to see growth in households, about 40% of the TAZs are projected to have zero household growth – exactly 50% of which are located within the six-city area around Grand Rapids. In fact, 42% of Grand Rapids' TAZs are projected to add zero households, indicating more concentrated pockets of growth within that city. Please refer to the map at right for additional details by TAZ for the projected change in housing units from 2019 to 2050.



Map 4: Change in Housing Units 2019-2050

Employment - 2050

About 106,000 additional jobs are projected to be in the region by 2050. Approximately 32% of these additional jobs are anticipated to be located within the City of Grand Rapids, but other large pockets of job growth are also expected in the City of Walker, City of Kentwood, City of Wyoming, Alpine Township, Allendale Township, Byron Township, Cascade Township, Gaines Township and Caledonia Township. The map that follows shows this projected employment change from 2019 to 2050 by TAZ.



Map 5: Change in Employment 2019-2050



Chapter 5: Evaluating the State of the Transportation System



Following the socio-economic data approval by the Technical and Policy Committees, GVMC staff began the next phase of the MTP development process: evaluating the state of the transportation system by mode to determine how the system was functioning. This comprehensive needs analysis looked critically at the following modes of transportation in light of the approved goals and objectives, public survey data, and planning factors, and determined current initiatives and challenges:

- (1) Active Transportation
- (2) Air Travel
- (3) Freight Movement
- (4) Passenger Rail
- (5) Transit

As part of this needs analysis, staff also conducted a region-wide deficiency analysis for the following areas to determine where the system is falling below acceptable levels:

- (1) Capacity Deficiency (congestion and reliability)
- (2) Bridge and Pavement Condition
- (3) Safety

Only capacity-deficient expansion projects are required to be listed on the project list in this document. GVMC staff used our travel demand model to determine capacity deficiencies on our system, and the congestion section of this chapter discusses the process for how some capacity deficient road segments have become projects. Not all identified capacity deficiencies have a project associated to alleviate the identified issues. However, when prioritizing operational or capacity projects long-term, these deficiencies provide a context of what road segments should be considered by the appropriate road agencies. This also allows for opportunities to coordinate development or enhance other modal facilities where feasible. Identified deficiencies without committed funding are included in the illustrative list of projects in Appendix J.

The remainder of this chapter details the results of GVMC's mode-based needs analysis and carries through the discussion from Chapter 3 as we show how each mode of transportation and the identified needs align with the approved vision statement, goals and objectives for the 2050 MTP. Integrating goals and objectives into the needs and deficiencies discussion provides structure and guidelines for transportation planning in every area and will help guide the implementation of the 2050 Metropolitan Transportation Plan.





Active Transportation



Highlights:

- There are over 3,200 miles of active transportation infrastructure in the GVMC region, including over 2,700 miles of sidewalks, over 130 miles of on-street bike facilities, and over 380 miles of off-street shared use paths.
- The illustrative nonmotorized needs list contains 331 projects that would add over 313 miles of new active transportation infrastructure to the region.

Overview

Active transportation continues to grow throughout the region. To create an efficient multimodal network, active transportation is an essential element of transportation plans. While balancing available funds is always a challenge, there is broad acknowledgement that active transportation increases transportation and accessibility options, supports transit, provides economic benefits, and helps improve air quality, health, and quality of life outcomes.

For the purposes of this document, **active transportation** encompasses human-powered modes of transportation such as walking and cycling in addition to the use of micromobility devices like personal or shared e-bikes and scooters.

[The GVMC Active Transportation Plan](https://gvmc.org/nonmotorized) was developed as an element of the MTP. The Plan can be found at gvmc.org/nonmotorized and includes additional information on active transportation in the region.

Process for Determining and Addressing Needs

Project specific active transportation needs are identified in the GVMC illustrative nonmotorized needs list. This list is updated on a regular basis and continues to be a priority for GVMC and its members. The GVMC Nonmotorized Committee met three times from late 2022 to early 2023 to discuss Plan related topics, goals, and regional needs. The Committee met on:

October 27th, 2022
December 5th, 2022
May 23rd, 2023

In addition to the needs identified in the 2045 MTP, reaffirmed by a comprehensive staff analysis using updated data, additional needs emerged through discussion at these committee meetings. On the May 23rd, 2023, meeting, the committee met specifically to discuss these needs.

Identified Needs and Proposed Solutions

Need 1: Additional Funding to Address Regional Priorities and Goals

Project level active transportation needs are identified in GVMC's illustrative nonmotorized needs list. The list contains infrastructure projects developed by the MPO's member jurisdictions, highlighting projects important to each community. The document is updated at the time of Transportation Improvement Program (TIP) or MTP development, and changes as the desires of the communities and listed projects evolve. This list was updated in early 2023 and includes 331 projects that would cost over \$315 million to construct. The list can be found in Appendix J.

The projects included in this list address regional priorities and needs such as mode shift, connectivity and continuity, safety, ADA and accessibility, regional facilities, environmental justice and sensitive environmental resources, and project support, readiness, and maintenance.

The list primarily contains proposed infrastructure construction projects and does not account for the maintenance of existing facilities. As the list continues to grow, so does the need for additional funding for maintaining the systems. Among the many sources of funding available for active transportation, there is a marked lack of money for ongoing maintenance of facilities.

Due to limited funding, a continually growing list of projects, and the need to maintain existing facilities, additional funding is needed.

Public Involvement Spotlight



What Does the Public Say About Active Transportation?

Survey participants were asked to evaluate the following elements of the active transportation networks when taking the 2050 MTP survey.

Availability of Bike Paths

42% - Good or Very Good
21% - Neither Good Nor Poor
37% - Poor or Very Poor

Condition of Bike Paths

52% - Good or Very Good
28% - Neither Good Nor Poor
20% - Poor or Very Poor

Availability of Sidewalks

49% - Good or Very Good
24% - Neither Good Nor Poor
26% - Poor or Very Poor

Condition of Sidewalks

44% - Good or Very Good
34% - Neither Good Nor Poor
23% - Poor or Very Poor

Safety of Nonmotorized Routes

35% - Good or Very Good
30% - Neither Good Nor Poor
35% - Poor or Very Poor

In addition to the question asked, the survey received 165 additional comments related to active transportation infrastructure and travel. A summary can be found on the following page.

Need 2: Regionwide Needs Identified in the Grand Region Nonmotorized Plan

MDOT completed the Grand Region Nonmotorized Plan in 2017, and GVMC participated on the Core Plan Team. This plan identified active transportation needs for multiple agencies in the Grand Region as a whole, which includes 13 counties in West Michigan, as well as needs and priorities by county. This plan is scheduled to be updated sometime in the coming years.

Additional MDOT Grand Region Priorities

A priority of the MDOT Grand-Region is identifying and addressing gaps in the network which involve changes to state highways, specifically bridge related gaps, and safety for all users of the transportation system. Most of these potential projects will involve partnerships with local communities. In addition to projects included in the needs list, MDOT has identified potential active transportation priority locations for future consideration. These potential priority locations and a full list of Grand Region Needs can be found in the Active Transportation Plan.

Need 3: Improved Safety for Pedestrians, Bicyclists, and Vulnerable Road Users

On average, 201 pedestrian and 164 bicycle crashes occur in the MPO region each year. Of this, an average of 45 pedestrian and 16 bicycle crashes resulted in a fatality or serious injury.

While pedestrian and bicycle crashes account for a small portion of all crashes in the region at just 2%, vulnerable road users like pedestrians and cyclists are significantly more likely to suffer injuries or death as a result of a crash with a vehicle. From 2012-2021, a total of 206,392 crashes occurred throughout the MPO region. 2,010 crashes, approximately 1% of total crashes, involved a pedestrian and 1,639 crashes, approximately 1% of the crashes, involved a cyclist. Of the total crashes, 4,002 crashes, or 2%, resulted in fatality or serious injury. However, looking at pedestrian crashes alone, 446, or 22%, resulted in a fatality or serious injury. Of the bicycle-involved crashes, 160, or 10%, resulted in fatality or serious injury.

While total number of bicycle and pedestrian crashes in the MPO area has trended downwards from 2012 to 2021, the rate of fatalities and serious injuries has trended upwards.

Need 4: Education Regarding Active Transportation

Education regarding active transportation, specifically regarding safety, was identified as a need by the Nonmotorized Committee. The networks within the region continue to grow, and alternative modes of travel such as micromobility devices like e-bikes and e-scooters are gaining popularity. It is ever important to remain informed and, in turn, inform the public on the rights and responsibilities assigned to each mode, appropriate use of facilities, and emerging technology.

Of the 165 additional comments received related to active transportation infrastructure and travel, three main themes emerged:

Improving Safety for Bicyclists and Pedestrians

65 Comments

“Create more walkable communities. Create safer biking conditions and more bike paths.”

Improving and Expanding the System

57 Comments

“Most of the northwest portion of the county has no connection to Grand Rapids or the rest of the county outside of basic, narrow roads (which are not safe unless in motorized vehicles). There are no public connected trails, few sidewalks, no buses, taxis or public transportation of any kind and the roads are not designed for anything other than motorized travel.”

Prioritizing Active Transportation and Mode Shift from Single Occupancy Vehicles

28 Comments

“Please prioritize walking, biking, and transit over cars.”

Need 5: Regional Coordination

Just like road networks, active transportation networks are often constructed, maintained, and funded by several different entities. A need that emerged from committee discussion was the need for increased regional collaboration amongst MPO members to facilitate a more consistent user experience across jurisdictions. A unified and normalized approach to issues such as design, facility and treatment implementation, and rules and regulations would contribute to more functional, consistent, and safer systems throughout the region.

In addition to consistency, improved coordination would allow for early identification of cross-jurisdictional projects, resulting in the ability to add active transportation infrastructure to projects where not previously planned and the maximization of limited resources.

Proposed Solutions

More information regarding the determined needs, as well as the solutions and strategies that will be used to address these needs, can be found in the [Active Transportation Plan](#).

Challenges

Cross Jurisdictional Coordination

Just as road networks are often constructed, maintained, and funded by several different entities, facilities serving active transportation modes cross jurisdictional boundaries while simultaneously varying in form and type of user served. To ensure compatible facilities across jurisdictional borders, a great deal of cooperation must take place between adjoining jurisdictions and among all the municipalities in a region.

Funding

Funding is likely the largest deterrent to the development of active transportation infrastructure. The illustrative nonmotorized needs list contains 331 projects that would cost over \$315 million to construct. Although levels of funding shift over time, active transportation needs have historically outweighed the funding available for project implementation. At the current projected federal funding levels, it would take approximately 78 years to complete the list of projects as-is. With that, projects are often paid for entirely with local funds.

Land Use Patterns

The density and pattern of land use greatly influences the amount of active transportation trips. Multi-use or mixed-use developments encourage more walking trips as more destinations are located within a reasonable walking distance; however, this land use type is minimal within the MPO area.

Maintenance

Among the many sources of funding available for active transportation there is a marked lack of money for ongoing maintenance of facilities. As the network continues to grow, so will the need for maintenance.

Network Gaps and Connectivity

A principal deterrent to the public choosing active transportation is lack of adequate facilities or gaps in the network. Bridge crossings in key gap areas, especially over and beneath freeways and other limited-access thoroughfares, are a significant impediment as many do not offer the width, shoulder, or railings necessary for active transportation users to traverse safely.

Time and Distance

Trips take additional time, and distance is a larger deterrent than travel by motor vehicle.

Safety

While pedestrian and bicycle crashes account for a small portion of all crashes in the region at just 2%, vulnerable road users like pedestrians and cyclists are significantly more likely to suffer injuries or death as a result of a crash with a vehicle. While total number of bicycle and pedestrian crashes in the MPO area has trended downwards from 2012 to 2021, the rate of fatalities and serious injuries has trended upwards.

Weather

Seasonal weather, in addition to extreme heat and precipitation events, may hamper active transportation commutes. Snow plowing and other weather-related maintenance initiatives may make these types of commutes more feasible.

Emerging Issues

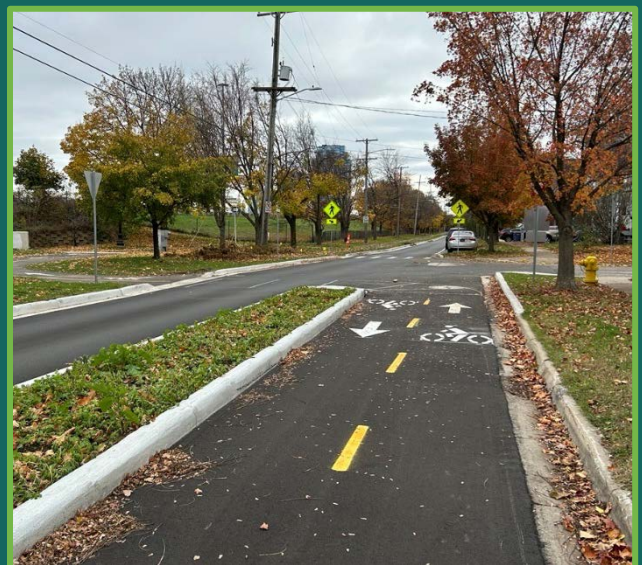
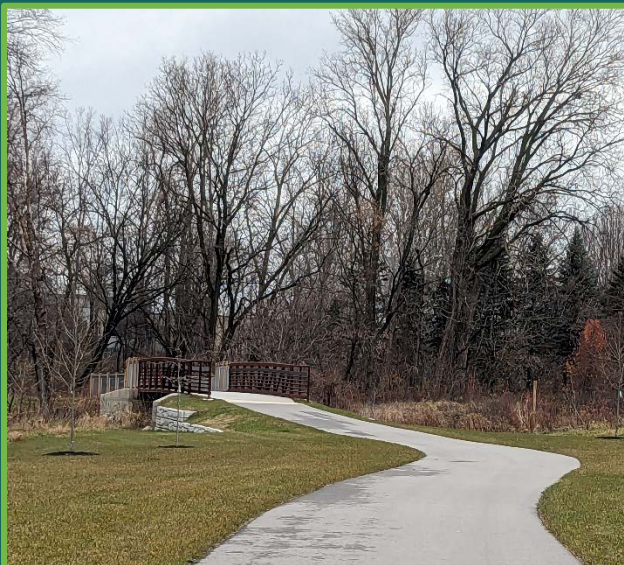
Micromobility and Cooperation Among User Types

Micromobility devices such as e-bikes, scooters, and one wheelers have grown in popularity in recent years. Identifying and determining regulations regarding these technologies has been a challenge. Presently, there is little guidance on where these devices are allowed, and how to best design facilities that are safe and comfortable for all user types as they coexist.

Accomplishments

Network Improvements and Expansion

Cross jurisdictional coordination continues to improve, with entities working together to improve the network. The MPO continues to make investments in the expansion, maintenance, and safety of the network. Since 2014, the region has constructed approximately 65 miles of on-street bicycle facilities and 154 miles of off-street shared use paths. Photos of two of these projects, the City of Hudsonville's Buttermilk Creek pathway project (photo provided by the City of Hudsonville) and the City of Grand Rapids Turner Avenue separated two-way bikeway can be found below.



Shared Micromobility

In the 2045 MTP, bike and scooter share was listed as an emerging issue. At that point, the City of Grand Rapids had investigated a bike and scooter share program, but nothing had been implemented. In the summer of 2022, the City of Grand Rapids Board of Commissioners approved Lime to operate within a designated service area. This new service provides shared standing e-scooters and seated e-assist bikes within a 12-mile operating area, helping to fill gaps in the transportation network and providing a low-cost, on-demand travel option.

Wayfinding

Similar to shared micromobility, a coordinated approach to wayfinding was listed as an emerging issue in the 2045 MTP. Since, West Michigan Trails, in collaboration with Toole Design and other regional stakeholders, has completed their Wayfinding Sign Concepts and Implementation Guide for West Michigan Trails and Bikeways. This guide is to be used by regional organizations to provide consistent wayfinding throughout the region with the goal of helping residents and visitors better navigate the system.

Supporting Documents

[GVMC Active Transportation Plan](#)

GVMC Illustrative Nonmotorized Needs List (See Appendix J)

[MDOT Grand Region: Regional Nonmotorized Plan](#)

[Wayfinding Sign Concepts and Implementation Guide for West Michigan Trails and Bikeways](#)

Supporting MTP Goals and Objectives

Please see the matrix included in Appendix E.

Highlights:



An aircraft at the Gerald R. Ford International Airport (GFIA)

- The GFIA serves over 3.5 million passengers a year
- Over 9,500 travelers pass through the GFIA every day
- The GFIA generates over \$3.1 billion in annual economic output throughout West Michigan
- GFIA includes 100 businesses supporting over 2,000 direct jobs
- GFIA has its own police, fire, and maintenance departments
- The airport has 1,580,000 square yards of pavement, which equates to enough concrete to construct a two-lane road (10 inches thick) from Grand Rapids to the Mackinac Bridge

Overview

With six passenger airlines offering more than 100 daily nonstop flights to over 30 major market destinations and Sun Country Airlines to begin service in June 2024, the Gerald R. Ford International Airport (GFIA) is the second busiest airport in Michigan. The airport is in Cascade Township and covers nearly 3,200 acres (over five square miles), an area almost as large as the City of Grandville and a bit larger than East Grand Rapids.

The GFIA is managed and operated by the Gerald R. Ford International Airport Authority. The airport is financially self-supporting and requires no funding from property taxes, general funds, or special taxes. Airport operations and improvements generate local net airport revenue, rather than spend valuable tax dollars. GFIA's capital requirements are met through various sources, including operating margin, revenue bonds, passenger facility charges, and grants under the Federal Airport Improvement Program and the Michigan State Aviation Grant Program. Operational requirements are met through rates and charges assessed to airport tenants and airport patrons for the use of airport services and facilities.

Process for Determining and Addressing Needs

To determine air transportation needs, GVMC relied on the Airport Access Study, the GFIA's master plan, and the 2050 MTP public survey results. More information about these items, including how they were used to determine needs, is described in the pages that follow.

Airport Access Study

Prior to the development of the FY2022 Unified Planning Work Program, GVMC staff asked our members for recommendations on future planning projects. After conducting an evaluation process, two studies were selected as regionally beneficial and necessary for our growing region. One of these studies was an Airport Access Study, which investigated ways to improve access to the Airport as well as the surrounding local road and freeway systems. After going through a Request for Proposals (RFP) process, GVMC contracted with AECOM to conduct the Airport Access Study. The study area was approximately one-mile around the Airport and was used to evaluate potential access paths and surrounding land use and development.

To assist in management of the project and consideration of enhancement options, GVMC assembled a Technical Advisory Committee (TAC) that included representatives from adjacent municipalities, transportation agencies, and business and tourism industries (see list at right). As key stakeholders, the team participated in the project process and advised on key decisions. Each TAC meeting provided a project status update and information on public engagement. The TAC met four times through the process.

The Study involved three phases of public engagement to educate the public and gather input during and after the development of potential long- and short-term project options. Engagement activities included two in-person public open houses, a virtual public meeting, and an online story map with a survey for each phase. A detailed summary of engagement results was compiled for each phase and can be found on GVMC's [website](#).

The study process determined six preferred projects, which are listed in the table on page 44.

For further details about this study and the process of arriving at these preferred projects, please refer to the [Airport Access Study Final Report](#).

Airport Master Plan

The GFIA's Master Plan provides the Gerald R. Ford International Airport Authority (GFIAA) with a strategy to develop the Airport. A comprehensive Airport Master Plan was prepared in 2004 with an update initiated in June 2016 and concluded in 2019 with Federal Aviation Authority approval. The GFIAA contracted with the firm RS&H to lead this effort.

The intent of the update was to provide guidance to enable the Authority to strategically position the Airport for the future by maximizing operational efficiency and business effectiveness, as well as maximizing property availability for aeronautical and non-aeronautical development through efficient planning. The document itself establishes an everyday working tool for users to identify proposed Airport projects, costs, and implementation. During public workshops held while preparing the update, there was only support for the projects identified and no objections. While long-term development is considered in master planning efforts, the typical planning horizon for master plan updates is 20 years.

The Federal Aviation Administration provides guidance for Airport Master Plan development in FAA Advisory Circular 150 / 5070-6B, Airport Master Plans. Although not required, the Advisory Circular strongly recommends airports prepare a Master Plan. Funding for the update is provided primarily by the Federal Aviation Administration through an Airport Improvement Program (AIP) grant. In addition, funding is also provided by the Michigan Department of Transportation,

Airport Access Study Technical Advisory Committee Representation:

Cascade Charter Township

City of Kentwood

Experience Grand Rapids

Gerald R. Ford International
Airport

Grand Rapids Chamber of
Commerce

Kent County

Kent County Road Commission

Michigan Department of
Transportation (Grand Region)

The Rapid

The Right Place

Office of Aeronautics, and the Gerald R. Ford International Airport Authority. In accordance with FAA requirements, the Update process included a public and stakeholder involvement program.

Public facing transportation projects identified as part of this update process are included under “Identified Needs” on the following page.

Transportation Issues Public Survey

During the late summer and early fall of 2022, GVMC staff conducted a public survey that received 1,109 responses. This survey asked the public for feedback on the transportation system, including what was working well and what could be improved. Out of all the areas of the transportation system, ***satisfaction with travel through the Grand Rapids Airport ranked highest***, receiving a weighted score of 3.83 out of 5.

Several survey respondents also submitted comments about airport and air travel improvements they’d like to see. Many of these comments supported the Airport Access Study proposed improvements and the work of the Airport Master Plan.



A happy traveler at the Grand Rapids Airport

Identified Needs

The table that follows shows identified needs as well as the source. Needs can be divided into three main categories, including (1) airport roadway access, (2) multi-modal enhancements, and (3) airport improvements and investments.

Public Involvement Spotlight



What Does the Public Say about

Traveling Through the Grand Rapids Airport?

The MTP survey asked the public about their level of satisfaction with travel through the Grand Rapids Airport. This option ranked higher than any other mode of travel, receiving a weighted score of 3.83/5.

Additionally, the survey received 15 comments related to air travel. Most of these comments included requests for airport improvements, including more direct flights and additional options to access the airport via rail and transit. Featured comments are below.

“The GRR airport is a nice option but hopefully a few more direct flights can be added.”

“Rail from the airport to the city center of Grand Rapids would be a game changer. As an Uber driver, the amount of people from out of town on business that I drive that route for is astronomical. Use existing rail, electrify it, and the people will use it. “

Project Description	Source		
	Airport Access Study	GFIA Master Plan	GVMC Public Survey
Airport Roadway Access			
1-96/36 th Street Access Direct Access – long-term project	✓		
Thornapple River Drive Secondary Freight Access – near-term project	✓	✓	
Patterson Avenue/44 th Street Safety Enhancements – near-term project	✓		
M-37 Patterson Avenue/60 th Street Intersection Enhancements – near-term project	✓		
An additional access route to the Airport located along Patterson Avenue north of Oostema Boulevard		✓	✓
Multi-Modal Enhancements			
Downtown Express Bus/Shuttle – near-term project	✓	✓	✓
Pedestrian/Bike Connectivity Enhancements – near-term/long-term project	✓		✓
More and better frequent public transportation options to and from the Airport and throughout the surrounding areas, including street cars, light rail or a Bus Rapid Transit (BRT) line (or connecting to a BRT line already in existence)—especially from downtown to the Airport, and improving access to shared ride services or taxis	✓	✓	✓
Airport Improvements and Investments			
Additional parking positions in other adjacent locations at the FedEx facility		✓	
Additional airport terminal parking, specifically close-in covered parking		✓	
Airport ground transportation and terminal curb improvements		✓	
Air cargo facility expansion		✓	
Expansion into a 3 rd concourse with associated access and infrastructure		✓	
Construction of a Federal Inspection Station for the screening of arriving international passengers		✓	
Upgraded utilities to allow for a compressed natural gas filling station and electrical charging stations should the industry shift toward alternative fuels			✓
More direct flights, including daily air service between GRR and LAX, and more reliable connections			✓
Continual improvements and investments in the Airport, including a new air traffic tower			✓

Total cost to complete the projects in the Airport Access Study is expected to range from approximately \$163 - \$166 million dollars, not including the pedestrian/bike connectivity enhancements. Currently, none of these projects are funded. The current Airport capital improvement plan (federal, state, and local funds) includes \$765 M of capital investments for 2024 – 2029. The cost of addressing the needs identified by the public is unknown at this time.

Proposed Solutions

Secure Additional Funding to Improve Airport Roadway Access and Increase Multi-Modal Options to Access the Airport

Options to improve the connectivity of the surrounding local road and freeway network to facilitate future airport expansion and accommodate regional growth and development (increasing population and jobs) in southeastern Kent County should be considered, and investments should be made in roadway infrastructure that support the findings of the Airport Access Study, the Airport Master Plan, and public input if, and when, funding becomes available. Transportation or economic development grants should be sought out to fund these projects when, or if, possible.

In alignment with the Airport Access Study, the Airport Master Plan, and public input, new ways to increase access to the Airport via transit, active transportation, or micro mobility should be considered. These improvements would have the benefit of reducing congestion and improving air quality in West Michigan. These projects may be eligible for grants and should be considered for funding through public or private partnerships as well.

Encourage Future Airport Improvements and Investments

GVMC supports the Airport in continuing to make improvements and investments in ways that align with their Master Plan, public input, and available resources.

Challenges

Need for Additional Funding

The main challenges in improving air transportation are the lack of available funding and the high cost for improvements. FAA funding levels for facilities were nearly eliminated about 14 years ago. Funding levels must be restored to previous levels to fund needed projects.

In the future, the infrastructure owners (including the Airport, MDOT, Kent County, The Rapid, and the local cities/townships) will need to conduct more detailed design studies, environmental reviews, and potentially funding applications prior to the construction of projects. Other than the development of local infrastructure that supports pedestrian and bicycle enhancements, the roadway access improvements the Airport Access Study recommended are likely to require state and federal funding contributions to advance. As the programming entity for regional transportation funds, GVMC can play a unique role in considering and potentially prioritizing these enhancements to regional airport access.

Emerging Issues

Consideration of New Technology and Its Impact on Air Travel

According to the American Association of Airport Executives (AAAE), Advanced Air Mobility (AAM), considered a ride-share service like Uber or Lyft by air taxi, is a new concept of air transportation using electric vertical takeoff and landing (eVTOL) aircraft to transport cargo and passengers between rural, suburban, and urban markets. AAM has the potential to not only change the way in which people commute, but to also open new markets for communities and their workforce that would create jobs and stimulate economic activity. In the United States alone, the AAM market is estimated to reach \$115 billion annually by 2035, employing more than 280,000 people.

AAM may advance environmental sustainability goals because the aircraft servicing these markets are expected to predominantly be all electric with zero operating emissions. In addition, eVTOLs should feature low noise profiles giving them the ability to land in urban centers and residential areas. Because of the transformative nature of this concept, AAE is significantly engaged in this important emerging industry to ensure that AAM operations are safely integrated into the National Airspace System (NAS) and airports have the appropriate resources and tools to make informed decisions in this area. GFIA staff actively participates in conversations and meetings on AAM. According to their website¹, “NASA is researching how these aircraft can be safely integrated into the existing airspace and exploring the technology that this new highly digital future airspace will need to be successful.” Improvements to the electrical grid will likely need to be made to support this endeavor in our region as well.



Joby recently delivered its first electric vertical take-off and landing (eVTOL) aircraft to Edwards Air Force Base as part of the company's contract with the U.S. Air Force. Joby Aviation Image.

[Joby Delivers First eVTOL Aircraft to Edwards Air Force Base | Joby \(jobyaviation.com\)](https://www.jobyaviation.com)

Accomplishments

Completing the Airport Access Study is a major accomplishment for our area and gives us a clear path forward for making investments.

Supporting Documents

- [Gerald R. Ford International Airport Master Plan Update](#)
- [Airport Access Study](#)

Supporting MTP Goals and Objectives

Please see the matrix included in Appendix E.

¹ <https://www.nasa.gov/centers-and-facilities/armstrong/advanced-air-mobility-makes-travel-more-accessible-2/>



Freight



FedEx plane at airport ramp. Photo courtesy of GFIA

Highlights:

- More than 91,513,777 pounds of freight were shipped through the airport in 2021, which computes to more than 250,772 pounds, or approximately 251 tons, of freight each day on average.
- Over 50,000 trucks carrying freight travel across our regional roads every day.
- There are 120 miles of operational freight railroad track in the GVMC area.

Overview

MDOT defines freight as “any good, product, or raw material carried by a commercial means of transportation including air, highway, rail, water, and pipeline.” The GVMC area is a rapidly growing metropolitan area with several freight centric industries and facilities which support the local economy.

Freight: any good, product, or raw material carried by a commercial means of transportation including air, highway, rail, water, and pipeline.

The Infrastructure Investment and Jobs Act (also known as the Bipartisan Infrastructure Law) enacted on November 15th, 2021, continues the National Highway Freight Program to improve the efficient movement of freight on the National Highway Freight Network (NHFN) and supports several goals including:

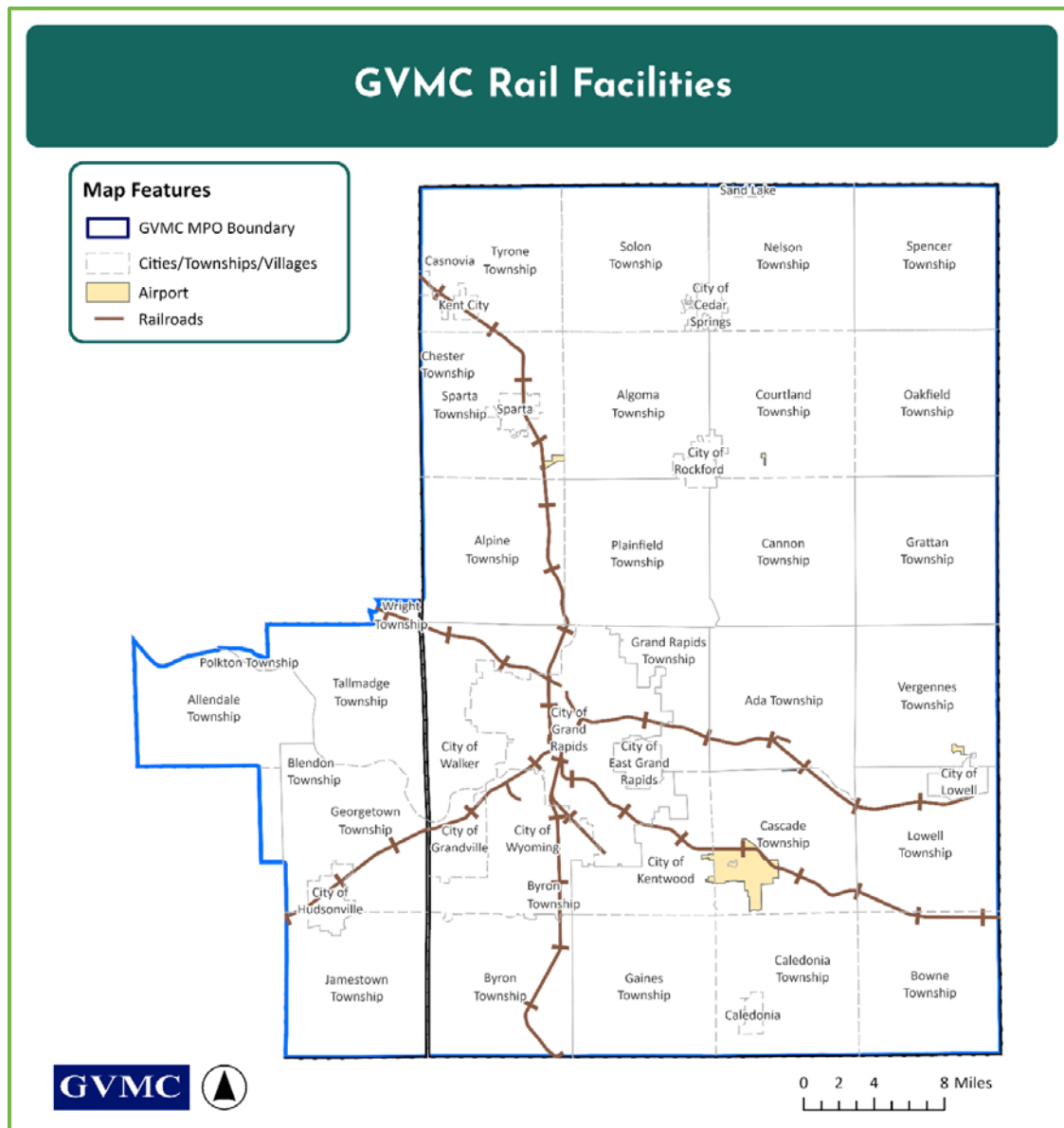
- Investing in infrastructure and operational improvements that strengthen economic competitiveness, reduce congestion, reduce the cost of freight transportation, improve reliability, and increase productivity
- Improving the safety, security, efficiency, and resiliency of freight transportation in rural and urban areas
- Improving the state of good repair in the NHFN
- Using innovation and advanced technology to improve NHFN safety, efficiency, and reliability.

- Improving the efficiency and productivity of the NHFN
- Improving State flexibility to support multi-State corridor planning and address highway freight connectivity
- Reducing the environmental impacts of freight movement on the NHFN

For a complete list of provisions, please visit https://www.fhwa.dot.gov/bipartisan-infrastructure-law/fact_sheets.cfm.

Rail

There are approximately 3,600 miles of active railroad lines in the state of Michigan. Freight service is provided by four Class I railroads—Canadian National (CN), Canadian Pacific (CP), CSX Transportation (CSX), and Norfolk Southern (NS)—and 24 regional or short line railroads. The Grand Rapids metropolitan area is fortunate to have five freight rail companies—Grand Rapids Eastern Railroad (GRE), Marquette Rail (MQT), CSX Transportation, Grand Elk Railroad (GDLK), and the Coopersville and Marne Railroad—and one passenger rail option, the Amtrak *Pere Marquette* service to Chicago on the CSX line through Holland. There are approximately 120 miles of operational track in the metropolitan area. However, several major corridors have been abandoned within the past decade and have been converted for use by active transportation (rail-trails). Two short line railroads are now owned by the Genesee & Wyoming Railroad, which is a national short line operator.



Map 6: GVMC Rail Facilities

Truck

An extensive transportation system connects Greater Grand Rapids to major cities and transportation hubs throughout the Midwest, which makes transporting freight by highway an attractive option. In Michigan, the trucking industry accounts for more than 65% of the total freight tonnage moved and more than 73% of the tonnage moved by value. The trucking industry is a vital element of all industrial/commercial sectors, especially in manufacturing, agriculture, wholesale, retail, and construction.



Grand Rapids area FedEx truck at parking facility

Air

The Gerald R. Ford International Airport (GFIA) is currently served by two cargo airlines that moved 91,513,777 pounds of freight in 2021, or approximately 251 tons a day. A total of 17 airports offer scheduled services that handle air cargo throughout the state. Local airports continue to serve as strong economic engines for local communities by providing service to airport-dependent businesses to connect to the global marketplace in the quickest way possible.

The GFIA, Michigan's second largest airport, serves as a vital freight connection to Grand Rapids. Highway access to the airport is a critical issue to ensure freight is moved efficiently between modes and local shippers/receivers in the MPO area.

Process for Determining and Addressing Need

GVMC leans on the Freight Committee to understand freight transportation needs within the GVMC planning area and to suggest freight-related projects. The Freight Committee is comprised of representatives from the Grand Rapids Chamber of Commerce, MDOT, Watco (Grand Elk Railroad), the Kent County Road Commission, Spartan Nash, Founders Brewing, and The Right Place Inc. GVMC is actively working to connect with more local representatives in the logistics industry. Organizations representing rail, truck, and air freight/shipping interests are also included on GVMC's public participation and consultation email lists.

Additionally, GVMC works to receive input from the public on their needs or concerns with the transportation system in our region. GVMC received four comments concerning freight in the 2050 Metropolitan Transportation Plan public survey. These comments address the concern for wear and tear of trucks on the road and the number of commercial trucks traveling down rural roads.

Determining Freight Projects

GVMC relies on our members to suggest freight-related projects and often considers that projects that improve roadway capacity also serve to enhance freight access. Projects that improve pavement condition can also enhance freight movement. To address freight issues, GVMC uses our Congestion Management Program, which incorporates performance measures for the total number of capacity deficient miles on the freight network. GVMC also maintains an area freight network map which lists the state and county truck routes, all season routes, rail lines, intermodal facilities (such as the Gerald R. Ford International Airport and railroad freight yards), and major employers/shippers. See Map 7 on page 51.

In an exercise to highlight some areas of concern, staff overlaid some of the major employers/shippers in the MPO area with GVMC's congestion deficient segments as determined by the Transportation Demand Model. Staff then put in a buffer of one mile, and Map 8 on page 52 is a preliminary result of road segments that may inhibit these employers/shippers from moving freight in an efficient manner.

GVMC has also been working with ten cities and two road commissions to refine the traffic count program to better record commercial traffic. Over the past few years, GVMC has phased out the old counting equipment and purchased new software to initiate more comprehensive commercial traffic counting.

Freight Project Requirements and Federal Performance Measures

Freight projects are required to have adequate funding sources identified, demonstrate improvements to the efficient movement of freight, and meet national performance targets, such as the measurement of truck travel time reliability (TTTR) on the Interstate System. In the project selection process, the assessment of whether a project helps to achieve a performance measure is considered. MPOs must establish targets or support statewide targets for applicable measures and document the strategies and investments used to achieve the targets in their transportation plans. TTTR targets provide direction for the identification and prioritization of freight projects in the GVMC MPO area.

More information on the TTTR performance target is included in the Congestion section of this chapter, starting on page 75, as part of the discussion on System Reliability. Progress toward meeting all targets is included in the [System Performance Report](#). Freight may become a larger focus for project selection for GVMC's Transportation Improvement Program (TIP) with IJA performance-based planning and future federal transportation legislation.

The MPO freight network map below includes the National Highway System (NHS) – the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility; the critical urban and rural freight network- public roads that provide access and connection to the Primary Highway Freight System and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities; and network candidates as noted in the Michigan Freight Plan criteria. Please note that there are currently no formally designated critical urban/rural freight corridors in GVMC's region at this time. Critical rural and urban freight corridors are formally designated on a rolling basis due to statewide mileage limitations.

Public Involvement Spotlight



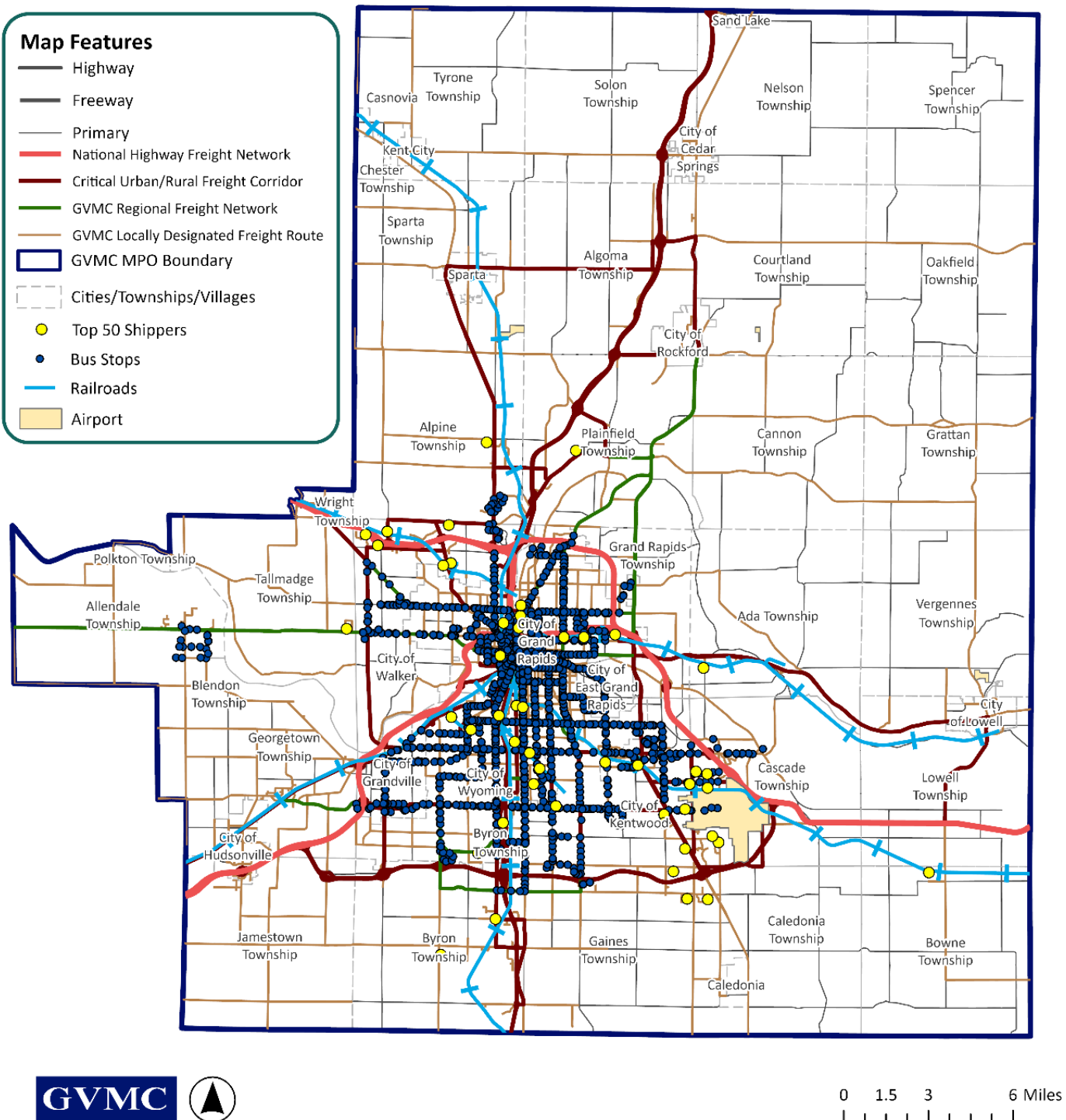
What Does the Public Say About Freight?

In GVMC's recent public survey, 4 respondents submitted comments about freight. All the comments pertained to the impact of commercial trucks on roadways.

"Please do something about commercial trucks on our rural roads!!"

"Less long distance trucks damaging roads and more rail transit of products."

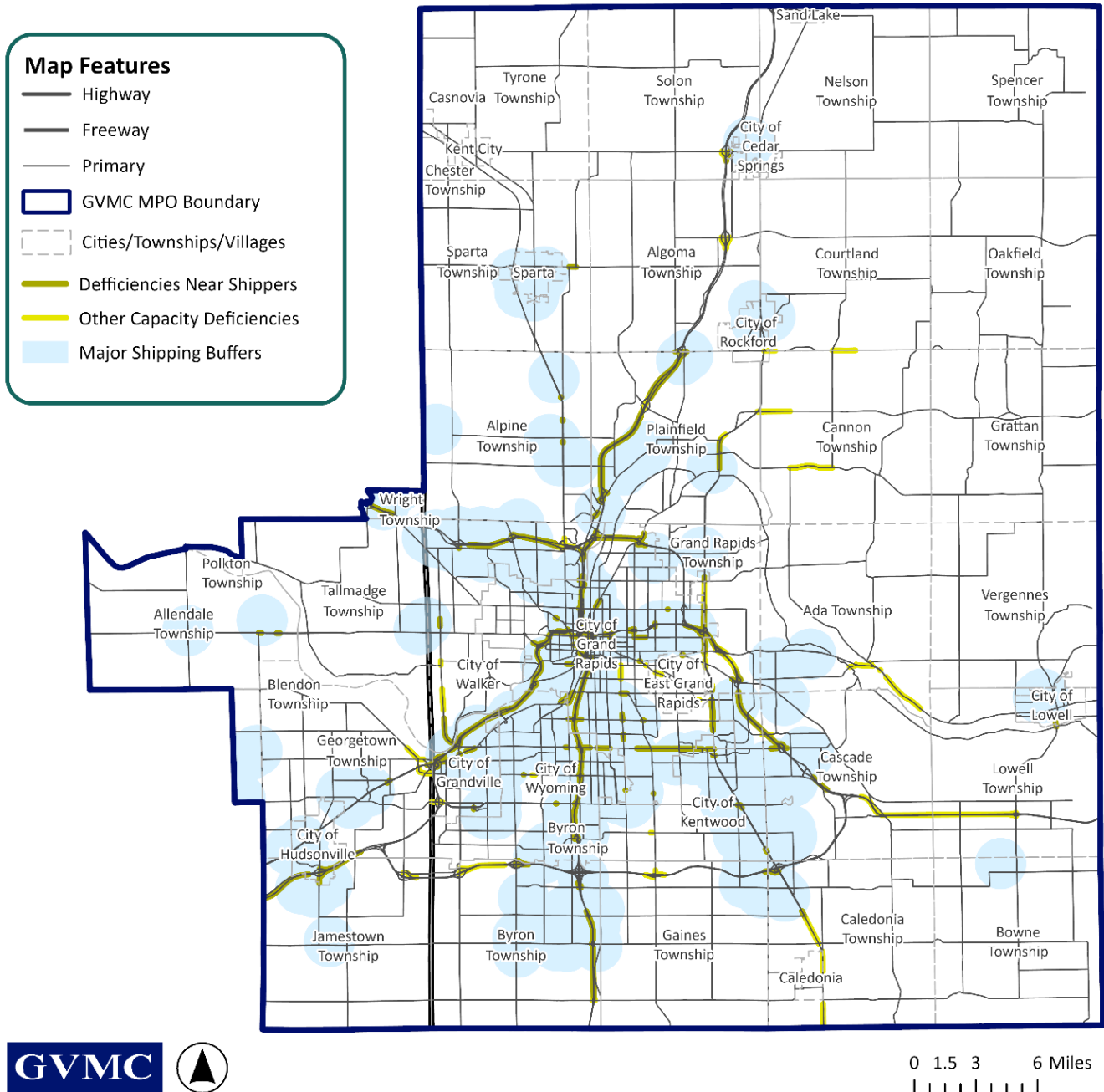
Regional Freight Network with Major Shippers



Map 7: MPO's Regional Freight Network with Major Shippers

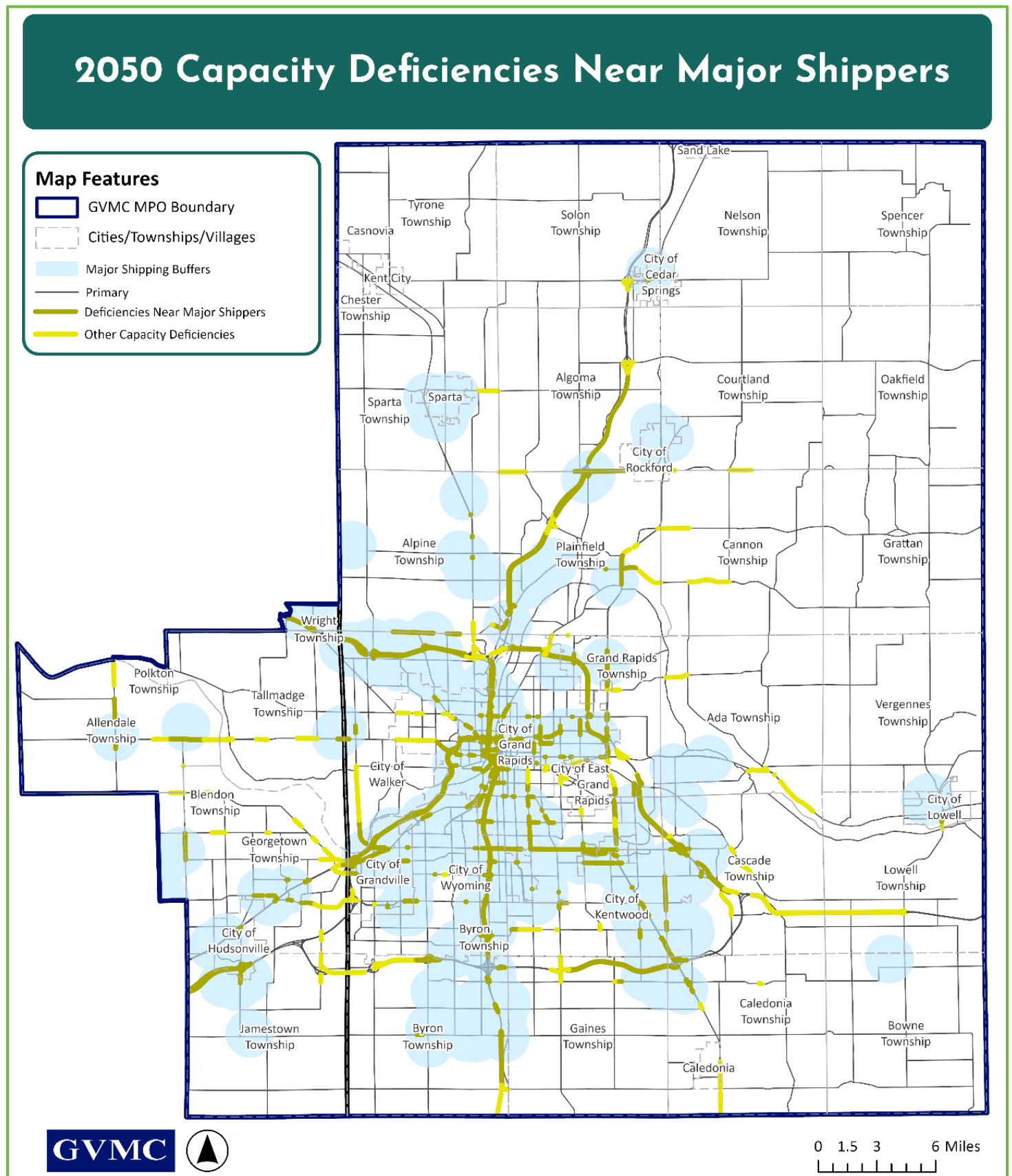
The following map identifies network segments that currently experience moderate or severe congestion at peak periods.

Capacity Deficiencies Near Major Shippers



Map 8: Capacity Deficiencies Near Major Shippers

The following map identifies network segments that are projected to experience moderate or severe congestion at peak periods in the year 2050.



Map 9: 2050 Capacity Deficiencies near Major Shippers

Freight Needs and Proposed Solutions

The Freight Committee first met on Monday, April 17, 2023, to discuss the Metropolitan Transportation Plan, previous freight planning efforts, and the needs and deficiencies list from the 2045 MTP. The committee reconvened on Tuesday, May 16th to review the needs list developed for the 2045 MTP to determine if the list of items were still needed, should be modified, or could be removed because they had been addressed. Members of the Committee then suggested new freight needs to be added. The Freight Committee determined the following needs, proposed solutions, and challenges during the meeting.

GVMC used these meetings as an opportunity to reconnect with local and regional freight stakeholders to understand how the COVID-19 pandemic has affected or shifted the needs and process of the freight industry as well.

Need 1: Address Bottlenecks

The Freight Committee determined the following bottleneck issues:

- US-131 between 28th St. and the S-Curve (has the oldest pavement in Grand Rapids and the highest traffic volumes per day outside of Detroit); the Hall St./Martin Luther King Jr. St. /Wealthy St./Cherry St. area needs to be reconfigured due to closely placed interchanges and congestion issues
- US-131 between Cedar Springs and I-196
- The need for a new bridge on Freeman Ave. over the CSX line/yard between Hall St. and Market Ave. (Primarily for truck traffic)
- Congestion from truck traffic generated from industry located between Market Ave, Cesar Chavez Ave, and Chicago Dr.
- M-6/ M-37 Interchange

Need 2: Safety and Operational Concerns

The Freight Committee determined the following safety and operational concerns:

- Trucks traveling from US-131 to Hall to Godfrey alongside an elementary school. The City of Grand Rapids is trying to redirect truck traffic away from Cesar Chavez Ave.
 - Additional local truck routing concerns throughout the region
- Clearing incidents on US-131 which can cause delays
- Limitation on when refuse/waste trucks can access residential areas
- Truck traffic entering I-96 on the Fruit Ridge and Walker Ave interchanges (Commercial area between 4 Mile Rd./3 Mile Rd./Fruit Ridge Ave./Bristol Ave.)

Need 3: Freight and Rail Issues

The Freight Committee determined the following freight and rail issues:

- The Watco railyard will continue to generate 24/7 truck traffic from the transload facility entering US-131
- There is a desire for more intermodal rail service from Grand Rapids, but not currently enough volume to make it a priority for the Class 1 railroad(s) to build a new intermodal facility between Indiana and Grand Rapids
- Regional Rail Freight Study – this is an unfunded study on MDOT’s illustrative list of projects

Need 4: Future/ Other Concerns

Additional concerns include:

- Connecting freight employers/employees to transit
- Monitor how potential tolling will fit in the future of transportation. (I-196 from I-94 to M-6 is currently listed in MDOT Tolling Study as tier 1 corridor)
- Freight traveling from US-131 south from Big Rapids

- EV Corridor (*Electric Vehicle Corridor is a national highway corridor purposed for alternative fueling and electric vehicle charging*) and Truck Parking
- Hydrogen fuel cell technology

Proposed Solutions

Proposed solutions to identified needs include:

- Improving US-131 operation between Hall Street and the S-Curve area. There is currently an active Planning and Environmental Linkages (PEL) study targeting this segment.
- Building peak use lanes/applying Active Traffic Management (ATM), which includes shoulders that are built to the standard of a lane and are opened during peak periods along some freeway corridors. The benefit is that less space is needed (instead of a lane and a shoulder, which is how lanes are traditionally built, only a lane-width shoulder is needed), but ITS infrastructure cost is also involved.
- Reconnecting Freeman Ave. at the West End of the industrial area to reroute truck traffic to improve traffic safety and residential/ elementary school traffic safety.
- Shifting toward a more intermodal system to ship and receive freight. There was significant interest from industry in taking trailers off the road and using rail to move goods. This would enhance safety, reduce congestion, and improve air quality. An intermodal facility could potentially be built on vacant land along existing rail lines.
- Developing a container rail service in the Grand Rapids area.
- Increasing connectivity and reducing congestion through GVMC Regional Transportation Demand Management Plan implementation.
- Reacting more quickly to clear incidents and crashes to reduce traffic congestion.
- Increasing the use of weave/merge lanes on area freeways.
- Adding an interchange at M-6/48th St. east of the GFIA airport.

Challenges

The Freight Committee identified the following challenges in meeting the identified needs:

- The US-131 freeway between 28th St. and the S-curve improvement project is cost prohibitive at current funding levels.
- Grand Rapids does not have enough volume to be a priority for Class 1 railroads to build a new intermodal facility.
- Safely balancing accessibility within complete streets infrastructure for all users along with commercial vehicles making local deliveries.
- Reducing travel time delays and congestion on highways from truck traffic.

Emerging Issues

Ongoing and emerging issues in the GVMC MPO area include the following:

I-196/I-96 EA projects

Adequate funding is needed to complete the I-196/I-96 EA projects to improve freeway operations and access.

The US-131/I-96 Planning and Environmental Linkages Study

This study is assessing the movement of freight along these critical freeway corridors and connecting surface routes; any future improvements should consider freight transportation needs.

More Consideration of Surface Road Access and Operations

As railroads focus more on intermodal and bulk distribution transload facilities at their major yards, surface road access and operations need to be considered as part of the MPO project prioritization process.

Evaluation of Proposed Intermodal and Logistics Facilities

Any new intermodal (COFC/TOFC) facilities proposed will need to be evaluated to determine if the highway and local road access is adequate to accommodate truck traffic in and out of that facility. Additionally, GVMC should work with incoming logistics facilities to understand future transportation network demands.

EV Corridors and Truck Parking

As EV Corridor infrastructure is established, the location of freight generators and energy capacity to supply EV stations must be considered along the network as well as the need for future truck parking.

I-96 @ Fruit Ridge Avenue to 4 Mile Road

The I-96 @ Fruit Ridge Avenue interchange project is in the TIP, but further changes will need to be monitored to address continuing industrial growth in the Walker area and freight flow to 4 Mile Road.

GVMC Freight Study

GVMC completed the [GVMC Regional Freight Analysis](#) in 2023. GVMC staff completed an initial analysis that provides a data heavy comprehensive understanding of the freight moving throughout the planning area. This analysis can be used as a primer to complete a regional freight plan to help further identify future freight related transportation projects.

GVMC staff will continue to work with area rail, truck, and air freight interests, incorporating their concerns and priorities into the transportation planning process and encouraging consideration of freight needs during the project development process. GVMC also intends to continue to work with state and federal partners to improve freight movement data analysis within our region.

Accomplishments

Identified freight projects from previous MTPs that have been completed or are underway:

- MDOT established a roadside assistance program- Safety Service Patrol to help clear incidents and vehicles causing delay along US-131 and I-96 in Kent County
- Queue Management Systems for ramps along US-131 from 44th to Post Drive
- Active management systems along US-131 from I-96 to Post Drive
- Reconstruction with added weave/ merge lanes along US-131 ramps between Allegan/Kent County Line to 76th Street
- Bridge Capital Preventative Maintenance on Burton Street and Hall Street over the CSX
 - These bridges provide direct access to US-131 from the TRANSFLO facility (a CSX subsidiary that moves bulk commodities from rail to truck) located between Burton and Hall along US 131
- Bridge replacement at Fruit Ridge Avenue and I-96



MDOT Safety Service Patrol Vehicle. Photo courtesy of MDOT.

Improved maintenance of existing traffic during construction times and completing more construction activities during off-peak hours, which was also included in the two previous MTPs, continues to be part of the freight discussion.

The 2023 Michigan Railroad Enhancement Program Grant was awarded in Kent County for \$2,500,000 to Mid-Michigan Railroad, Inc. dba Grand Rapids and Eastern Railroad for tie and ballast replacement, track surfacing, and bridge improvements. The project enhancements are intended to improve rail safety, operational efficiency, accessibility, capacity, and condition.

Supporting Documents

- [Airport Master Plan](#)
- [MDOT Freight Plan](#)
- [MDOT Rail Strategic Plan](#)
- [Michigan Mobility 2045](#)

Supporting Goals and Objectives

Please see the matrix included in Appendix E.



Passenger Rail

Overview

There are currently three passenger rail routes in Michigan: the *Wolverine* (Chicago-Detroit/Pontiac), the *Blue Water* (Chicago-Port Huron), and the *Pere Marquette* (Chicago-Grand Rapids). Please refer to Map 10 on page 59 to view the Michigan Intercity Passenger Rail System. Michigan passenger rail service is provided by the National Railroad Passenger Corporation (Amtrak), which was created by the passage of the National Railway Passenger Service Act by Congress in 1970. Amtrak began service on May 1, 1971, and the *Pere Marquette*, which runs roundtrip between Grand Rapids and Chicago seven days a week, began service in Michigan on August 5, 1984. The *Pere Marquette* is operated by Amtrak at the request of the state of Michigan, which provides an operating subsidy for service. Today, Amtrak provides passenger rail service on 521 of the total miles of railroad in Michigan, and approximately 135 miles are owned by the state of Michigan and 80 miles by Amtrak, generally between New Buffalo and Dearborn in Michigan.

Seventeen states, including Michigan, contract with Amtrak for the operation of trains to supplement the national Amtrak network, extending passenger rail service and/or increasing frequencies on national routes. This operating assistance helps to provide some of Michigan's heaviest travel corridors and population centers with intercity passenger rail service.

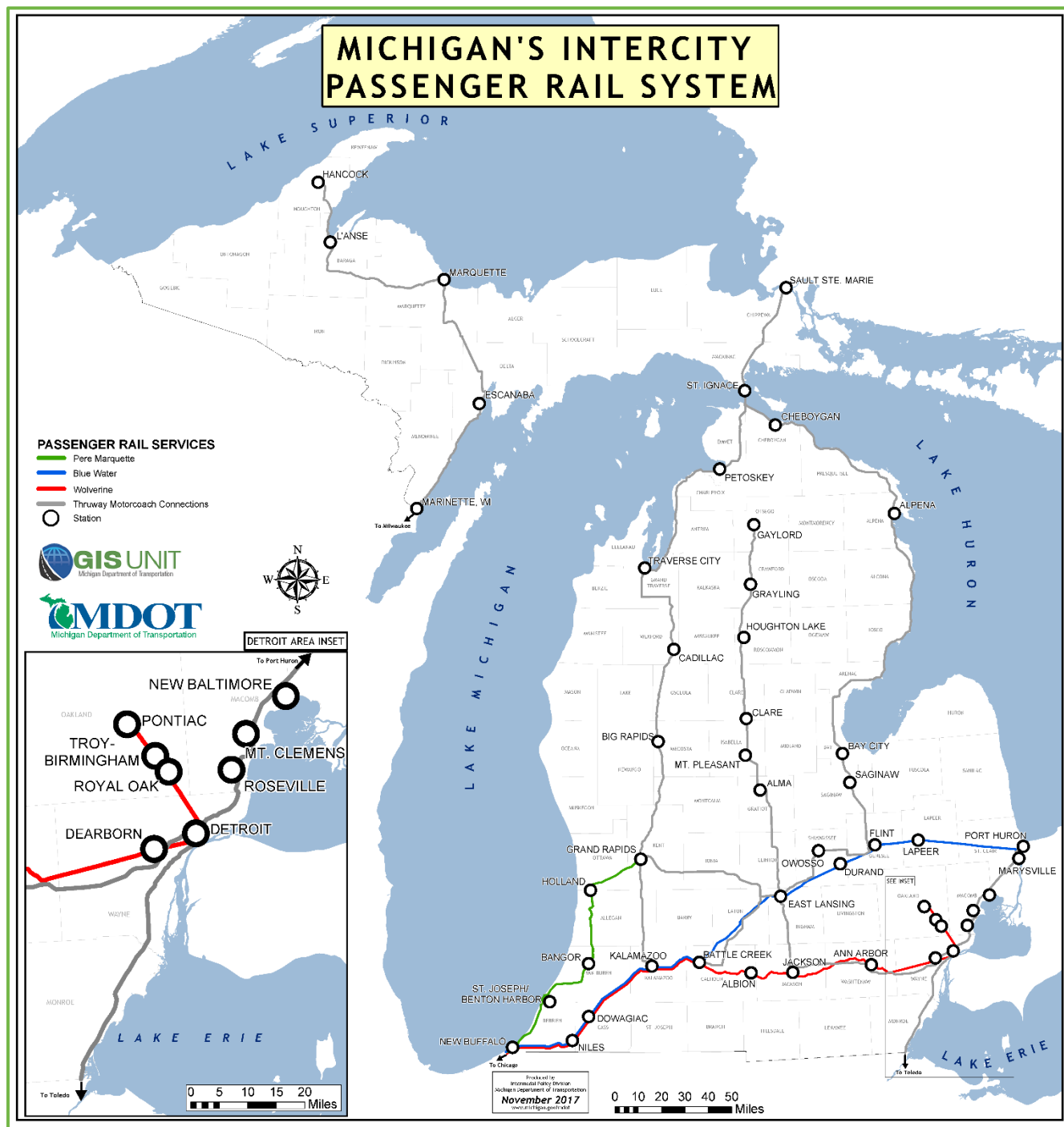
Traveling to Chicago by passenger rail is often an attractive choice for passengers, as taking the train eliminates the hassle of finding and paying for parking and driving on congested streets. It is also beneficial for the environment, as train travel helps to reduce congestion and consequently air pollution.



The Pere Marquette; Photo courtesy of MDOT and MODOT

Highlights

- 86,148 passengers rode the *Pere Marquette* in fiscal year 2022
- Amtrak provides passenger rail service on 521 miles of railroad in Michigan



Map 10: Michigan Statewide Intercity Passenger Rail Routes and Stations; map courtesy of MDOT Office of Rail

Process for Determining and Addressing Needs

Local passenger rail issues are monitored by the Westrain Collaborative, a group of agencies working to identify passenger rail service issues in West Michigan (see member list on the following page). However, other groups also work to improve passenger rail in Michigan and throughout the country. The Midwest Regional Rail Initiative (MWRRI) is a cooperative effort between Amtrak, the Federal Railroad Administration (FRA), and nine states, including Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin, to develop an improved and expanded passenger rail system in the Midwest. They completed a [study](#) in 2004. Since, the FRA has led an updated Midwest Regional Rail Plan. Additionally, MDOT participates in a regional group called the Midwest Interstate Passenger Rail Commission (MIPRC).

GVMC has also used public feedback about passenger rail issues from our public survey to determine need. The survey received 1,109 responses, and over 100 participants contributed comments about passenger rail improvements they'd like to see. Identified needs listed below are the culmination of work from Westrain, the MWRRI, the Coast-to-Coast Study team, Amtrak, the Federal Railroad Administration (FRA) and MDOT, with an additional section showing public support for these initiatives as well as the public's additional recommendations for future improvements.

Represented on the Passenger Rail (WESTRAIN) Committee:

Amtrak
City of Bangor
Grand Valley Metro Council
Historic Pullman Foundation
The Macatawa Area
Coordinating Council
Michigan Association of
Railroad
Passengers (MARP)
Michigan Department of
Transportation
Office of Rail
Quandel Consultants
The Rapid
Southwest Michigan Planning
Commission
Strategic Leadership Council

Identified Needs and Proposed Solutions

Need 1: Currently, the primary established passenger rail need is linking to the high-speed rail network and creating greater rail access to other parts of the state and the Midwest.

WESTRAIN is working to generate grassroots local government support for Amtrak's strategic vision for expansion. To that end, they are producing a video to explain some aspects of the vision and how local government can get engaged. The state has weighed in with its support, and Westrain seeks to show the state that there is also considerable local support for Amtrak's vision as well.

Proposed Solution: Establishment of a Rail Connection in New Buffalo

The Westrain Collaborative supports building a rail connection in New Buffalo that would connect CSX tracks to Amtrak tracks that would allow *Pere Marquette* trains to operate on Amtrak-owned tracks, which allow maximum speeds up to 110 mph between New Buffalo and Porter, Indiana, where the service would continue to Chicago. This new connection will allow the *Pere Marquette* passengers to switch to the *Wolverine/Blue Water* services to reach points east in Michigan and west to Chicago and for the *Wolverine/Blue Water* passengers to access destinations along Michigan's west coast to Grand Rapids.

Current plans include two short-term objectives:

1. Work with MDOT and Amtrak to establish a second train on current routing between Grand Rapids/Holland and Chicago (*Note: the New Buffalo connection would not immediately result in a second roundtrip on the Wolverine.*)
2. Investigate options (funding and administrative) to begin West Michigan Express (WMX) service between Holland and Grand Rapids

Proposed Solution: Re-Establish Passenger Rail Service Between Detroit and Holland (Coast to-Coast)

In late 2016, a feasibility study known as the Coast-to-Coast initiative concluded that the re-establishment of rail passenger service between Detroit, Lansing, Grand Rapids, and Holland is a concept worth pursuing. The study examined three different routes from Detroit to Holland via Lansing and Grand Rapids that could be established by upgrading existing rail. The first route passes through Ann Arbor and Jackson; the second passes through Ann Arbor and Howell; and the third bypasses Ann Arbor, heading from Wayne to Howell. The study concluded that the routes that pass through Ann Arbor are viable options that merit further study. The route through Jackson showed the greatest potential ridership and revenue, while the route through Ann Arbor and Howell promised the greatest return on investment. The study also

looked at the cost of establishing basic, 79-mph service on the route through Ann Arbor and Howell and 110-mph service. While the 110-mph service would require greater capital investment, it would yield higher ridership. GVMC will participate in any updates undertaken for this study.

Proposed Solution: Work Toward Achieving Vision of Midwest Regional Rail Initiative (MWRI)

The Midwest Regional Rail Initiative (MWRI) is a cooperative effort between Amtrak, the FRA, and nine states—Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin—to develop an improved and expanded passenger rail system in the Midwest. In September 2004, MWRI released a report conducted by their consultant, Transportation Economics & Management Systems, Inc., which outlines a new vision for passenger rail travel in the Midwest. US FRA published its Midwest Regional Rail Plan in late 2021. Additionally, MDOT continues to be engaged in region-wide planning through the Midwest Interstate Passenger Rail Commission.

This vision is a transportation plan known as the Midwest Regional Rail System (MWRRS), a 3,000-mile rail network serving nearly 60 million people. MWRRS would operate as a hub-and-spoke system providing through-service in Chicago to locations throughout the Midwest. Trains operating at speeds up to 110 mph would link Chicago with Milwaukee, Kansas City; Indianapolis and Cincinnati; Grand Rapids and Detroit; Toledo and Cleveland; as well as many smaller cities and towns. Increased speeds and service efficiencies would reduce travel times dramatically. The Chicago-Detroit trip, for example, would drop from the current five hours, thirty-six minutes to less than four, Chicago-Twin Cities from the current eight plus to less than six, and St. Louis-Kansas City from five hours and 40 minutes to just over four hours. The nearly eight-plus-hour Chicago-Cincinnati trip would be cut in half.



Map 11: Midwest Regional Rail Initiative

Rail passenger service from between Grand Rapids and Chicago could be routed through Kalamazoo. This service could begin in Holland, operate to Grand Rapids and then to Kalamazoo. This would provide improved access to the Accelerated Rail Service both east and west out of Kalamazoo, providing additional higher speed connections from Grand Rapids and Holland. This routing could also support local efforts to establish commuter rail service between Holland and Grand Rapids and is being evaluated by the West Michigan Express (WMX) Task Force. The route to Kalamazoo could replace or supplement the current *Pere Marquette* service from GR/Holland to Chicago. It should also be noted that if this is the only route between Chicago and Grand Rapids, it may impact whether the New Buffalo Connection project is necessary, as it would use Amtrak ownership between Porter and Kalamazoo, having no need to connect in New Buffalo. There may be opportunities to partner with the Gun Lake Tribe developments south of Wayland.

Proposed Solution: Encourage MDOT and the Federal Railroad Administration to conduct a more detailed study, alternative analysis, economic and environmental impact analysis for rail passenger service options in West Michigan.

This study should include routes between Holland/Grand Rapids and Chicago and Holland/Grand Rapids and Detroit/Toledo. This could result in more than one rail passenger route to/from West Michigan and could support future WMX Holland to Grand Rapids plans. This recommendation is consistent with MM2045, which references the Coast-to-Coast service.

Need 2: Address significant public interest in more, and better, passenger rail options that are accessible, convenient, efficient, fast, frequent, and reliable and that will have the benefits of reduced congestion and improved air quality, especially at the local level.

This need is derived from our recent public survey. The survey demonstrated wide public interest in increasing options to travel by rail, thereby showing either direct or indirect support for many of the initiatives previously identified in this chapter, including developing the Coast-to-Coast rail network, working to achieve the MWRRRI vision, connecting to high-speed rail, expanding Amtrak passenger rail service to support travel to additional destinations, and making targeted investments in our rail system. Public comments also demonstrated significant interest in making rail improvements locally, with many comments pertaining to developing light commuter rail from downtown Grand Rapids to surrounding communities and beyond.

Public Involvement Spotlight



What Does the Public Say about Passenger Rail?

In GVMC's recent public survey, 107 respondents submitted comments about passenger rail. Featured comments are below.

"Amtrak service is very limited - only one early morning departure to Chicago and one late-night arrival from Chicago. A few years ago, there was talk of building a 'coast-to-coast' rail network that went from the Lakeshore through Grand Rapids and Lansing into Metro Detroit - whatever happened to that?"

"Streetcars/rail lines on major roads such as 28th street would increase safety, equitable access, and reduce congestion."

"I would love a rail system to Traverse City, Detroit, or literally anywhere other than just Chicago. I would also love more departure and arrival times added to the Chicago Amtrak route."

"A light rail line connecting Grand Haven/Holland through Allendale and into GR would be a dream. GV students could commute by rail avoiding much of the congestion that can arise on that route."

Additionally, when the public was asked to rank the convenience of the Amtrak schedule on a scale of one to five through our Transportation Issues survey, with one being very poor and five being very good, the public gave it a “poor” rating, with a 2.47 weighted average. This score was the lowest of all evaluated modes. Based on this, as well as public comments received through the survey, there is significant support for improvements to, or expansion of, the Amtrak schedule.

Public survey comments trended toward the following improvements:

- (A) Investigating, planning for, developing, and then prioritizing light rail infrastructure (trains, trolleys/streetcars, etc.) and networks, especially through downtown and to surrounding areas for commuters, to the GFA Airport, to the Lake Michigan Lakeshore, or to Traverse City
- (B) Electrifying the passenger rail system and incorporating new rail transportation technology
- (C) Expanding Amtrak service to reach other areas across the state and increasing schedule frequency
- (D) Improving Amtrak connections to public transit (the train arrives early and departs late so bus service is minimal)
- (E) Improving lighting at the Amtrak station as well as Amtrak tracks and signals
- (F) Investing in/connecting to high-speed rail for long-distance travel
- (G) Supporting the West Michigan Express
- (H) Replacing highways (such as US-131 and I-96) with rail lines supported by bus service, dedicated bike lanes, and pedestrian walkways and spaces

Proposed Solution: Investigate New Sources of Funding

Significant additional funding would be necessary to implement any of the ideas above.

Potential Solution: Encourage Expanding the Amtrak Pere Marquette Schedule

The *Pere Marquette* departs early—6:00 am—and returns late—11:30 pm. Because this schedule can be seen as inconvenient, adding more departure and return times on the *Pere Marquette* route has been discussed locally to increase ridership, but funding is not available for this at this time. Learn more about the [Amtrak schedule or book your trip here](#).

Challenges

Funding

There is no exact dollar amount to address any of the proposed solutions. They are currently all unfunded, and if work were to resume, funding would likely come from a variety of sources.

The first step in establishing a New Buffalo connection is a feasibility and engineering study, and the next step toward developing Coast-to-Coast passenger rail service is a full feasibility study to include environmental impact analyses, an implementation plan, and a review of public-private partnership options. Both studies are currently unfunded.

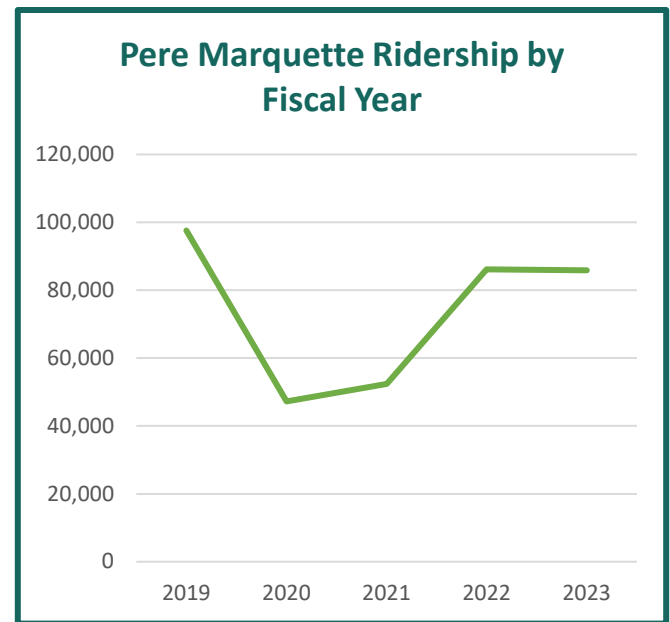
The funding plan for the MWRRI consists of a mix of funding sources, including federal loans and grants, state funding, general funds, and capital and revenue generated from system-related activities, such as joint development proceeds. Federal funding will be the primary source of capital funds. MWRRS funding is based on the establishment of an 80/20 federal/state funding program like those that already exist for highways.

Additionally, in FY2014, the operating subsidy the state of Michigan provided to Amtrak increased significantly because of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), which required the state to also fund the *Wolverine* in addition to the *Blue Water* and the *Pere Marquette*. Continued Michigan Department of Transportation funding, through the state legislature, may provide for a better and more viable passenger rail system in Michigan.

Maintaining Ridership and Revenue

Ridership on the *Pere Marquette* has waxed and waned over time, reaching a record-setting 111,575 riders in 2008. While several years, such as 2009 and 2013-2016 saw drops in ridership, ridership continued to increase thereafter, reaching 97,593 riders in fiscal year FY2019. The Covid pandemic plummeted ridership to 47,236 in FY2020, but ridership is gradually rebounding, reaching 85,845 riders in FY2023.

Other reasons for the decrease in ridership over the last two decades include ending service to and from New Buffalo along the line, which occurred in 2009, and the competition from intercity bus service, which also travels to Chicago from West Michigan. Revenue suffers when ridership is low.



On-Time Performance

The *Pere Marquette* operates over rail lines owned by CSX and Norfolk Southern. It is typical for Amtrak operations to run over freight-owned railroads. Significant coordination must occur between Amtrak operations and the freight-owned railroads in dispatching passenger trains, which may create on-time performance issues. Scheduled maintenance on the rail lines as well as unforeseen challenges, such as inclement weather, may impact on-time performance as well. Michigan's peninsular geography also poses challenges for railroad economics (both passenger and freight), since most of the rail lines must be supported by traffic originating or terminating in Michigan, with limited overhead traffic to support rail operations.

Right-of-Way Impact and Project Complexity

While passenger rail service to and from the Airport was considered as an alternative for GVMC's recent Airport Access Study, it was not carried forward from the initial evaluation due to its potential large scale railway upgrades, which results in high right-of-way impact and high project complexity.

Emerging Issues

Potential future issues and plans include:

- Working with MDOT on a potential New Buffalo to Traverse City Study, as noted in the FY23 boilerplate language and how it could incorporate other rail passenger needs in the GVMC area.
- Evaluating findings and recommendations from MDOT's long range plan ([MM2045](#)) and State Rail Plan Supplement ([SRP supplement](#)), as they may apply to GVMC on this subject.
- Evaluating future options to retain and enhance rail passenger service to and from the GVMC MPO area, in coordination with MDOT and local stakeholders.

Accomplishments

Some states are making progress toward service improvements identified in the MWRRI, including Michigan. MDOT purchased and upgraded the 135-mile Kalamazoo-Dearborn corridor through FRA's High Speed Intercity Passenger Rail Grant Program. MDOT has since been working through a variety of FRA's discretionary grant programs to further upgrade the line and keep it in a state of good repair. Additionally, MDOT applied to [FRA's Corridor Identification and Development Program](#) for each of the three existing passenger rail routes in Michigan. While MDOT has not heard if the *Pere Marquette* has been accepted, some primary outcomes of this program would be a Service Development Plan, which would help identify projects for increased reliability and frequencies, and insertion of these projects into FRA's pipeline for future capital funding. Additionally, Amtrak has been working diligently to increase ridership, including on

the *Pere Marquette*, to pre-pandemic levels.

Supporting Documents

[MM2045 State Rail Plan Supplement](#)

[Michigan Regional Rail System Executive Report](#)

Supporting MTP Goals and Objectives

Please see the matrix included in Appendix E.



Highlights



Buses parked at Rapid Central Station, photo courtesy of The Rapid.

- The Rapid operates 27 fixed-route bus lines throughout their 155-mile service area.
- The Rapid launched Michigan's first bus rapid transit (BRT) line in 2014 with the Silver Line and the second with the Laker Line in August 2020.
- In 2023, The Rapid provided 6 million rides.
- In April 2023, The Rapid began receiving renewable natural gas (RNG) from the City of Grand Rapids' biodigester.
- In addition to the fixed-route system, multiple transit agencies provide specialized transportation to help ensure older adults and people with disabilities can access necessary destinations throughout the region.

Overview

The Grand Rapids area has a long history of public transportation dating back over 135 years from horse-drawn carriages, to streetcars, to buses. Transit is an integral part of a multi-modal transportation system providing an alternative to personal vehicles and increasing access to jobs, healthcare, and other services and destinations for residents and visitors. As the region grows and faces escalating road congestion and its associated effects, such as worsened air quality, the significance of transit will continue to grow. Transit also plays a vital role in promoting affordable housing developments, facilitating efficient land use, and enhancing accessibility for both ADA compliance and the aging population.

Fixed-Route and Bus Rapid Transit Services

The Rapid operates 27 fixed route bus lines throughout their 155-mile service area, which covers Grand Rapids, Kentwood, Wyoming, East Grand Rapids, Grandville, and Walker. The Rapid also partners with two townships (Alpine and Gaines) just outside the regular service area to extend certain routes to key destinations in those townships. The Rapid is home to Michigan's first bus rapid transit (BRT) line along the South Division corridor, the Silver Line, and launched a second BRT line, the Laker Line, in August 2020. This line travels between Grand Valley State University's Allendale and Grand Rapids campuses.

Specialized Services

The Rapid

In addition to the fixed route system, The Rapid operates paratransit services through the Go!Bus program providing door-to-door service for seniors aged 65 and over and persons with disabilities. They also participate in RideLink – a network of area transportation providers that offer transportation to persons aged 60 or older to any necessary destination – as well as car, bike, and vanpooling services.

Rapid Connect is an on-demand microtransit service provided by The Rapid that helps connect riders to destinations in the Kentwood and Walker service areas that are not along a fixed service route. The Walker Connect area serves the area bound by Four Mile Road, the Grand River, Remembrance Road, and Richmond Street. This geography covers the quickly growing Northridge Drive corridor. The Kentwood service area serves the industrial areas around Broadmoor Ave. and the Gerald R. Ford International Airport. Rides can be scheduled through the Rapid Connect app and cost \$1.75 per ride.



Go!Bus in front of building, photo courtesy of The Rapid.

Hope Network

Hope Network provides door-to-door transportation services for seniors aged 60 and over, individuals with disabilities, those who need transportation to medical appointments, and those who need affordable and reliable transportation to work. Hope Network offers these services through several specialized transportation programs including Network 180, senior transportation, Wheels to Work, and North Kent Transit. Hope Network also provides specialized transportation services in Ada, Alpine, Byron, Cascade, and Gaines Townships.

Senior Neighbors

Senior Neighbors distributes fixed route and Go!Bus tickets to seniors and seniors with disabilities so they can access essential services. With their own buses they provide transportation to adults aged 60 and older through RideLink.

Georgetown Seniors

Georgetown Seniors provides transportation for Georgetown Township residents aged 55 and older, persons with disabilities, and others with hardships or special needs.

Kent County Community Action

Kent County Community Action offers transportation for senior citizens who live in Kent County for medical appointments, grocery shopping, socialization, and other services through Kent County Senior Millage RideLink and The Rapid. Transportation services are offered at a suggested donation of \$2.00 per trip.

United Methodist Community House

United Methodist Community House provides affordable transportation solutions to Kent County adults aged 60 and over. Qualifying older persons can schedule a ride to a medical appointment, the grocery store, and other essential destinations. Transportation services are offered at a suggested donation of \$2.00 per trip. United Methodist Community House is also a RideLink provider.

Process for Determining and Addressing Needs

To determine regional transit needs GVMC staff met with The Rapid to discuss their capital improvement plans, planning studies, emerging issues, and challenges they see to meeting transit needs. Staff also reviewed The Rapid's studies and plans as well as the Coordinated Public Transit-Human Services Transportation Plans that cover the rural transit providers in the region to inform the needs discussion, and reviewed feedback from the MTP public survey. GVMC is represented on the Transit Master Plan's Technical Advisory Committee.

Identified Needs and Proposed Solutions

In 2021, The Rapid implemented recommendations from a Comprehensive Operations Analysis, which had the goal of optimizing resources within the current Rapid service area. The focus was on providing frequent service on key corridors and filling gaps in the existing transportation network, including through the implementation of on-demand service focused on lower density industrial job regions. Looking toward the future of their transit service in identifying needs and priorities, The Rapid is in the process of completing multiple studies and plans. These include the Transit Master Plan (TMP) (ongoing), the Transit Technology Strategic Plan (ongoing), and the Zero Emissions Bus Transition Study (future).

Need 1: Transit Master Plan (TMP)

Proposed Solution: Implementation of Transit Master Plan (TMP) Recommendations

"Thriving: A framework for the future of connectivity" is The Rapid's long-range plan, which is a 20-year horizon visionary study for public transportation that will guide future development of The Rapid's current service area of East Grand Rapids, Grand Rapids, Grandville, Kentwood, Walker, and Wyoming, as well as into other locations outside the six-cities in Kent and the adjacent Counties. The plan will illustrate how The Rapid stacks up against comparable systems and help identify ways The Rapid can enhance their services, attract and retain riders, increase efficiency, and develop a sustainable financial strategy to fund the services recommended in the TMP. The TMP development began in January 2023 and will conclude in 2024.

The guiding principles of the Transit Master Plan are:

Community: We reflect you and your needs.

Resilience: We plan for action.

Convenience: We serve for user experience.

Internal Workforce: We value employee personal growth.

Adaptability: We're future-flexible.

While solutions for these core areas need to be identified, they may include some of the following:

- Implement regional transportation service, including West Michigan Express, providing commuter service between Grand Rapids and Holland.
- Provide enhanced first mile/last mile service, including overnight service.
- Strengthen land use and transit connections and promote Transit Oriented Design projects.

More information about the TMP can be found [here](#) or by visiting www.transitthriving.org.

Need 2: Transit Technology Plan

Proposed Solution: Implementation of Transit Technology Plan Recommendations

The Rapid is currently developing a Transit Technology Plan. This is a strategic plan which will look at customer-based transit technology that The Rapid currently utilizes and what improvements could be made. The study is currently ongoing and is expected to conclude in December of 2024.

Need 3: Zero Emission Bus Study

Proposed Solution: Implementation of Zero Emission Bus Study Recommendations

The Zero Emission Bus Transition Study is a future study that will look deeper into the [Zero Emission Bus Plan](#) that The Rapid currently has. Because of the ever-changing technology behind zero emission strategies, The Rapid plans to continue to look further into how they can incorporate renewable natural gas (RNG) into their bus fleet. A large part of The Rapid's capital needs is to transition 100% of the vehicle fleet into compressed natural gas (CNG), fueled by renewable natural gas (RNG) from the City of

Grand Rapids' biodigester. In the Zero Emission Bus Transition (ZEB) Plan, hydrogen fuel cell technology was identified to begin this transition, with the goal to be fully transitioned to CNG by 2050. The Rapid will continue to revisit its ZEB plan as bus technology and regional transit needs change. Funds to update this study have already been identified, and The Rapid anticipates that this plan will commence sometime within the next year.



Silver Line bus in front of Rapid Central Station, photo courtesy of The Rapid.

Need 4: Rural Transit Needs

Proposed Solution 1: Implementation of Coordinated Public Transit Human Services Plan Strategies

The Rapid has developed a Coordinated Public Transit Plan for Kent County. The most recent version of this plan was adopted by The Rapid Board in September 2022. Identified in the Coordinated Public Transit-Human Services Transportation Plan that covers the GVMC region, the following needs relate especially to rural transit services and users:

- Regional connectivity
- Expanded transportation services related to trip purposes, times, and destinations
- Improved and expanded outreach, marketing, and education
- Improved coordination among transit providers and with land use/development
- Improved supporting infrastructure (sidewalks, curb ramps, paved stop pads, etc.)
- Additional funding

Strategies identified in the Coordinated Public Transit-Human Services Plan to address these needs include expanding the availability of fixed route and countywide transportation services to unserved areas, increasing funding for transportation services providers/agencies, continue coordinated efforts with the Essential Needs Task Force and The Rapid Consumer Advisory Committee, and promoting an accessible community that works for all modes of transportation. These solutions as well as others in the plan will be implemented as funding becomes available.

More information about the Coordinated Public Transit-Human Services Plan can be found [here](#).

Proposed Solution 2: Implementation of Coordinated Transportation Plan Strategies

Coordinated transportation plans are required for funding through the Federal Transit Administration (FTA) Enhanced Mobility of Seniors and Individuals with Disabilities (Section 5310) Program administered by MDOT OPT. The coordinated transportation plans identify mobility needs and potential improvements in each region — particularly for older adults, people with disabilities, and people with lower incomes.

The strategies identified in the Michigan Coordinated Transportation Plan for Region 8, which covers the GVMC region, are separated into three categories: Organizational and Coordination Strategies, Operating Strategies, and Sustainability and Financial Strategies. The following strategies relate especially to addressing the rural transit needs in the GVMC region:

- Form a regional coordinating committee to serve as an ongoing forum for discussions on coordination opportunities and to identify and prioritize regional connectivity needs.
- Expand regional mobility management efforts.
- Support recommendations to improve public transportation identified through transit plans conducted in the region.
- Identify opportunities to expand scheduled services where feasible that can be marketed to local communities.
- Consider greater use of vanpool and long distance rideshare services.
- Assess opportunities to implement on-demand microtransit services.
- Develop additional partnerships to identify new funding opportunities.

More information about the Coordinated Transportation Plan for Region 8, including the draft document, can be found [here](#) or by visiting michigancoordinationplans.com/region-8.

Proposed Solution 3: Implementation of Kent County Area Mobility Study Strategies

The Kent County Area Mobility Study will aim to evaluate mobility options, needs, and solutions for those in the GVMC region. The study will be informed by other regional mobility planning efforts that are currently in progress, such as The Rapid's Transit Master Plan, so that work is not duplicated. This study will be funded through a Service Development New Technology grant awarded through MDOT's Office of Passenger Transport, which is funded with FTA Section 5304 funds and state match. The study is expected to be completed in September 2024 and has the potential to identify additional ways to meet rural transit needs in the GVMC region.

Need 5: MDOT Studies

Proposed Solution 1: East Beltline Transit Feasibility Study

The East Beltline Transit Feasibility Study is a future unfunded study that would assess the feasibility of a transit route along the East Beltline. This study would be coordinated between The Rapid and MDOT.

Proposed Solution 2: Implementation of WMX - Holland to Grand Rapids transit service

The West Michigan Express (WMX) is an initiative to provide transportation between Holland and Grand Rapids along the Chicago Drive corridor. After a feasibility study was conducted in 2018, the pilot bus route was set to start in the fall of 2020 with operation by The Rapid. The project was put on hold due to the COVID-19 pandemic, but in 2023 as part of the Transit Master Plan, The Rapid has resumed planning for the implementation of WMX in coordination with the WMX Task Force.



Bus in front of biodigester, photo courtesy of The Rapid.

Challenges

Financial Sustainability

GVMC met with The Rapid during the needs analysis to collaborate with them to ensure that targets and priorities remained aligned. Transit projects programmed in the FY2023-2026 TIP total \$71,055,795. The Rapid's illustrative list contains \$737 million in unfunded illustrative projects, which demonstrates how the need for transportation funding significantly outweighs available resources. The list of The Rapid's illustrative projects can be found in Appendix J. Additionally, limitations on operational funding sources are a challenge for funding labor and other operational costs.

Employment

A new challenge to meeting regional transit needs identified by The Rapid is workforce development, especially hiring and retaining bus operators.

Balancing Areas Served

Other challenges include balancing serving new employment sites that don't currently have transit service and serving the densifying urban area and environmental justice/opportunity areas where the core ridership is. Hope Network's Wheels to Work program works to help meet these needs, and the West Michigan Express effort is also aiming to help employees reach employment sites outside The Rapid's service area between Holland and Grand Rapids. GVMC's [Regional Transportation Demand Management Plan](#) also lists strategies that can help address this challenge, but additional solutions to this jobs/transit spatial mismatch will need to be explored as the region continues to develop an efficient multimodal system that stimulates and supports long-term economic vitality, travel and tourism, global competitiveness, productivity, and efficiency. Furthermore, it will be necessary to examine missing regional connections that are needed and determine how to obtain the necessary resources to bridge these connection gaps, considering that The Rapid is a six-city transit authority.

Limitation on Facilities

Additional challenges to a fully integrated transit system include limitations based on facilities in service jurisdictions that The Rapid doesn't have authority over, like crosswalks, curbs, and pedestrian facilities. Increasing coordination and partnerships among services, jurisdictions, and The Rapid will be key to overcoming these challenges.

Public Involvement Spotlight



What Does the Public Say about Transit?

GVMC received 233 comments about transit in our 2050 MTP public survey. Here are three of the comments received:

"Increasing the number of bus stops and decreasing the distance between them would increase the accessibility of the bus transit system. Many disabled and elderly people rely on the bus transit system and cannot walk a mile or more to their nearest bus stop."

"We should be adding train/bus routes between GR and the surrounding communities like Lowell or Rockford. Doing so would help bring these residents into GR bolstering the county economy."

"Currently Grand Rapids is a car-centric city, because of this it creates quite limited public transportation access and walkability. Public transportation and pedestrian traffic are treated as second classes compared to cars and is on a lower priority overall. This creates issues primarily with access, reliability and most importantly safety."

Emerging Issues

Automated/Autonomous Vehicles

The introduction of automated/autonomous vehicles in the transit world is something regional transit providers are monitoring. This can be seen as both an emerging issue and an opportunity for The Rapid. While supportive of these new technologies, 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. There is also interest in establishing a mode shift goal for the region, potentially as part of a future planning effort.

Mobility as a Service

The Rapid launched Rapid Connect, a mobility on-demand service in Kentwood and Walker. This is also both an emerging issue and an opportunity as The Rapid determines how to fully integrate and incorporate mobility as a service in the region.

Accomplishments

Examples of large transit capital projects that have gone through the MPO process within the last five years include:

- Started receiving renewable natural gas (RNG) from the City of Grand Rapids' biodigester in April 2023
- Purchased a new paratransit service operations center on Busch Drive in Grandville that is fully operational
- Introduced the first contactless payment system in Michigan in April 2023
- Opened a new Park-and-Ride lot in Standale along the Laker Line next to the Cummings Ave. Station

Supporting Documents

- [The Rapid's Capital Improvement Plan](#)
- [The Rapid's Transit Master Plan](#)
- [The Rapid's Zero Emission Bus Study](#)
- The Rapid's Transit Technology Plan
- [Kent County Coordinated Public Transit-Human Services Transportation Plan](#)
- [Coordinated Transportation Plan for Region 8](#)

Supporting MTP Goals and Objectives

Please see the matrix included in Appendix E.

Survey participants were asked to evaluate the following elements of the public transportation system when taking the 2050 MTP survey.

Number of Bus Stops Available

30% - Good or Very Good
33% - Neither Good Nor Poor
37% - Poor or Very Poor

Convenience of Bus Schedule

23% - Good or Very Good
36% - Neither Good Nor Poor
41% - Poor or Very Poor

Participants were also asked to rank transportation services from most important to fund (1) to least important to fund (7).

Enhance transit (bus) service was ranked 3rd most important to fund.



Laker Line bus, photo courtesy of The Rapid.



Congestion and Reliability



Traffic on 28th Street SE @ Hotel Avenue in Cascade Township

Highlights:

- Percentage of person-miles traveled on the interstate that are reliable increased to 99% in 2022 from 90.6% in 2019
- Percentage of person-miles traveled on the non-interstate national highway system that are reliable increased to 94.1% in 2022 from 84.7% in 2019
- Truck travel time reliability index increased from 1.78 in 2019 to 1.79 in 2022, while it was 1.29 in 2020 and 1.42 in 2021

Overview

Highway congestion occurs when traffic demand approaches or exceeds the available capacity of the highway system. Though this concept is easy to understand, congestion can vary significantly from day to day because traffic demand and available capacity are constantly changing. Traffic demand varies significantly by time of day, day of the week, and season of the year, and is also subject to significant fluctuations due to recreational travel, special events, and emergencies (i.e., crashes and evacuations). Available highway capacity, which is often viewed as being fixed, also varies constantly, being frequently reduced by incidents (i.e., crashes and disabled vehicles), work zones, adverse weather, and other causes.

To add even more complexity, the definition of congestion also varies significantly from time to time and place to place based on user expectations. An intersection that may seem very congested in a rural community may not even register as an annoyance in a large metropolitan area. Congestion that users expect during peak commute periods may be unacceptable if experienced on a Sunday morning. Because of this, congestion is difficult to define precisely in a mathematical sense—it represents the difference between the highway system performance that users expect and how the system actually performs.

Commonly used measures to assess congestion are level of service, speed, travel time, and delay. However, travelers have indicated that more important than the severity, magnitude, or quantity of congestion is the reliability of the highway system. People in a large metropolitan area may accept a 20-mile freeway trip taking 40 minutes during the peak period, so long as this predicted travel time is reliable and is not 25 minutes one day and two hours the next. This focus on reliability is particularly prevalent in the freight community, where the value of time under certain just-in-time delivery circumstances may exceed \$5 per minute.

GVMC determines a roadway to be congested when the total number of vehicles exceeds the number of vehicles that roadway was designed to safely carry. For instance, a two-lane road in a suburban area may be designed to carry 13,200 vehicles per day. When the count reaches an average volume of 13,201 vehicles per day, that facility is deemed “severely congested.” This does not mean that adding capacity will occur; merely, the facility will be flagged as deficient and studied further to determine a means to alleviate that congested situation.

Recurring Congestion: The relatively predictable congestion caused by routine traffic volumes operating in a typical environment.

Non-recurring congestion is usually caused by non-recurring causes, such as crashes, disabled vehicles, work zones, adverse weather events, and planned special events. Approximately half of all congestion is caused by temporary disruptions that take away part of the roadway from use—or “non-recurring” congestion.

Non-Recurring Congestion: Unexpected or unusual congestion caused by unpredictable or transient events, such as accidents, inclement weather, or construction.

The three main causes of non-recurring congestion are: incidents ranging from a flat tire to an overturned hazardous material truck (25% of congestion), work zones (10% of congestion), and weather (15% of congestion). Non-recurring events dramatically reduce the available capacity and reliability of the entire transportation system. This is the type of congestion that surprises the traveling public. We plan for a trip of 20 minutes, and we experience a trip of 40 minutes. Travelers and shippers are especially sensitive to the unanticipated disruptions to tightly scheduled personnel activities and manufacturing distribution procedures. Aggressive management of temporary disruptions, such as crashes, work zones, weather, and special events, can reduce the impacts of these disruptions and return the system to full capacity. In addition, improvements to temporary or unplanned disruptions promote safety.

Process for Determining and Addressing Needs

LOTTR evaluates the consistency and dependability of travel times on both interstate and non-interstate NHS systems. This assessment encompasses variations in travel times from day to day and across different times of the day. The reliability measures were categorized into four distinct time periods: three for weekdays (6-10 a.m., 10 a.m. - 4 p.m., and 4-8 p.m.) and one for weekends (6 a.m. - 8 p.m.). Any roadway segment or corridor that has a reliability index of 1.5 or higher during any given time period is classified as unreliable.

Level of Travel Time Reliability (LOTTR), which is a federally designated performance measure, was taken into consideration in the congestion deficiency analysis to identify travel reliability on the highway network. LOTTR is defined as the ratio of the longer travel times (80th percentile) to a “normal” travel time (50th percentile) and can be obtained from the Regional Integrated Transportation Information System (RITIS) database.

TTTR is calculated for each segment of Interstate freeways for five time periods including 6 a.m. to 10 a.m., 10 a.m. to 4 p.m., 4 p.m. to 8 p.m. for weekdays and 6 a.m. to 8 p.m. for weekends, and 8 p.m. to 6 a.m. for all days. Any interstate segments with a TTTR of 1.5 or higher during any given time period are classified as unreliable.

Truck Travel Time Reliability (TTTR), which is also a federally designated performance measure to evaluate truck travel on interstate freeways, was used in the congestion deficiency analysis to identify truck travel time reliability. TTTR is defined as the ratio of the 95th percentile truck travel time to the 50th percentile truck travel time.

In addition, GVMC staff utilized the travel demand model to conduct the deficiency analysis for the 2050 Metropolitan Transportation Plan (MTP). This analysis aimed to project and identify potential congestion deficiencies that are anticipated to occur by the year 2050.

To determine the future travel demand for each federal aid facility in the region, an analysis of the volume to capacity ratio (V/C) was conducted. The GVMC travel demand model provides estimates for volume, speed, and travel time on each road. GVMC staff utilized the AM and PM peak hour volume-capacity (V/C) ratio from the travel demand model to identify congested corridors on the existing and future highway network. The greater of the AM and PM peak period V/C ratio was selected for the congestion deficiency analysis. The identified corridors are categorized as "low/no congestion," "moderate congestion," or "severe congestion," as summarized below.

V/C Ratio	Congestion Level
$V/C < 0.8$	Low/No Congestion
$0.8 \leq V/C < 1.0$	Moderate Congestion
$V/C \geq 1.0$	Severe Congestion

The volume capacity ratio (V/C) is an indicator of road congestion. It is calculated by dividing the total volume of vehicles by the capacity of the road. The V/C ratio analysis results in a comprehensive list of federal aid facilities that are either currently operating above their designed capacity or are expected to become deficient by the year 2050. The congestion deficiency list includes details on V/C ratio and identifies segments that are congested. It is important to note that designating a facility as deficient does not automatically imply future widening; rather, it signifies the need for focused attention on these "deficient" facilities. The maps in Appendix G display the a.m. and p.m. peak period V/C ratio in the GVMC region for both model base year 2019 and MTP horizon year 2050.

Public Involvement Spotlight



What Does the Public Say about Congestion and Reliability?

Our recent survey showed concerns from the public on traffic congestion and delays in the Grand Rapids region. (Please see Appendix I for complete survey results.) Here are several comments from the public:

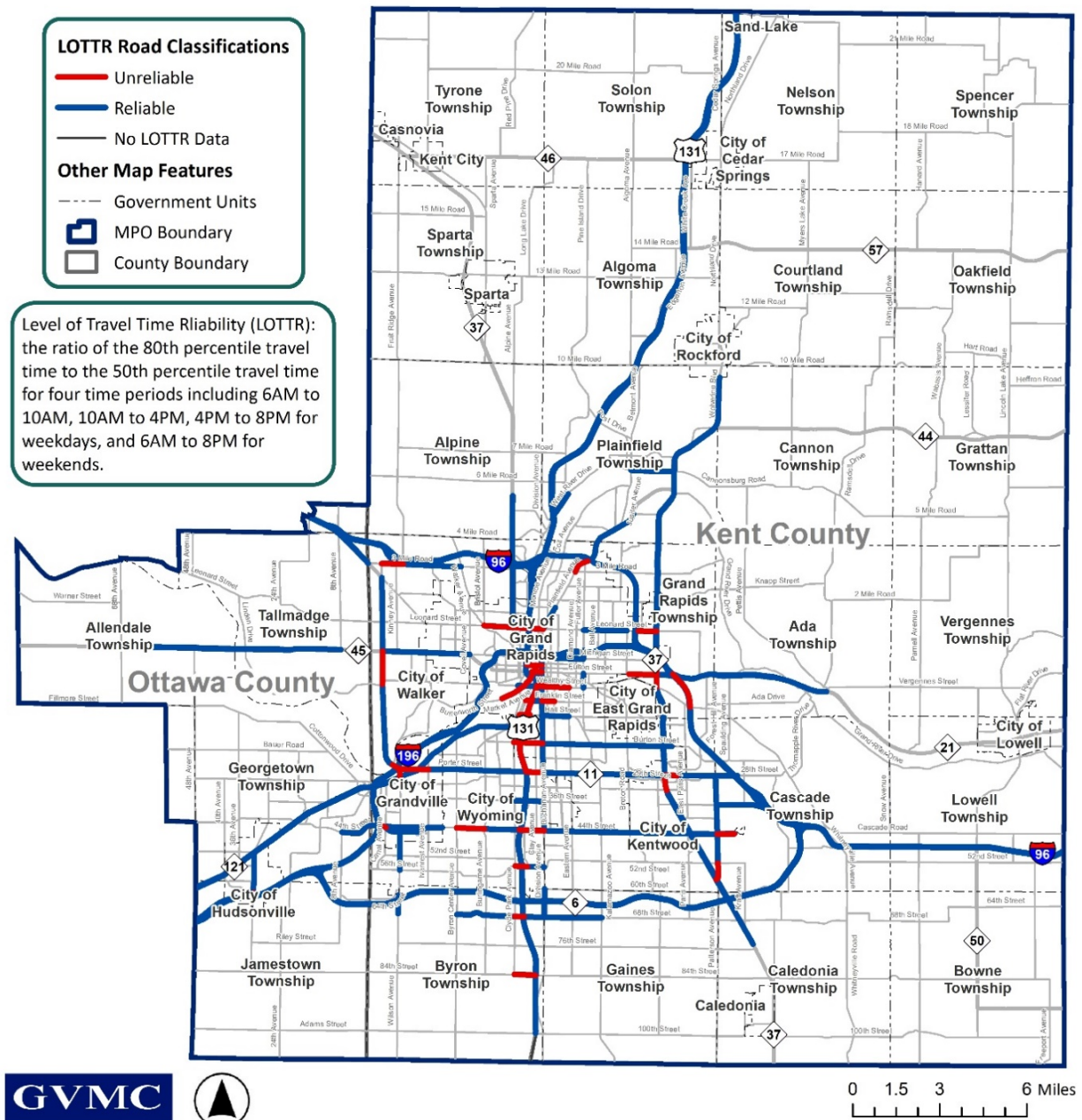
"Feel like population has quickly outgrown what roadways were designed for. Have not kept up with population change to what roadways can handle."

"US 131 needs big improvements from M6 to 14 Mile Road Need to repave the entire stretch with something that will last a long time, (not easy in Mich. I know). Then, either more lanes and better on and off ramps. driving in GR is a nightmare with all the bike lanes moving in and out of car traffic."

"Congestion and roadway improvements is an urgent need, as well as intersection safety. "

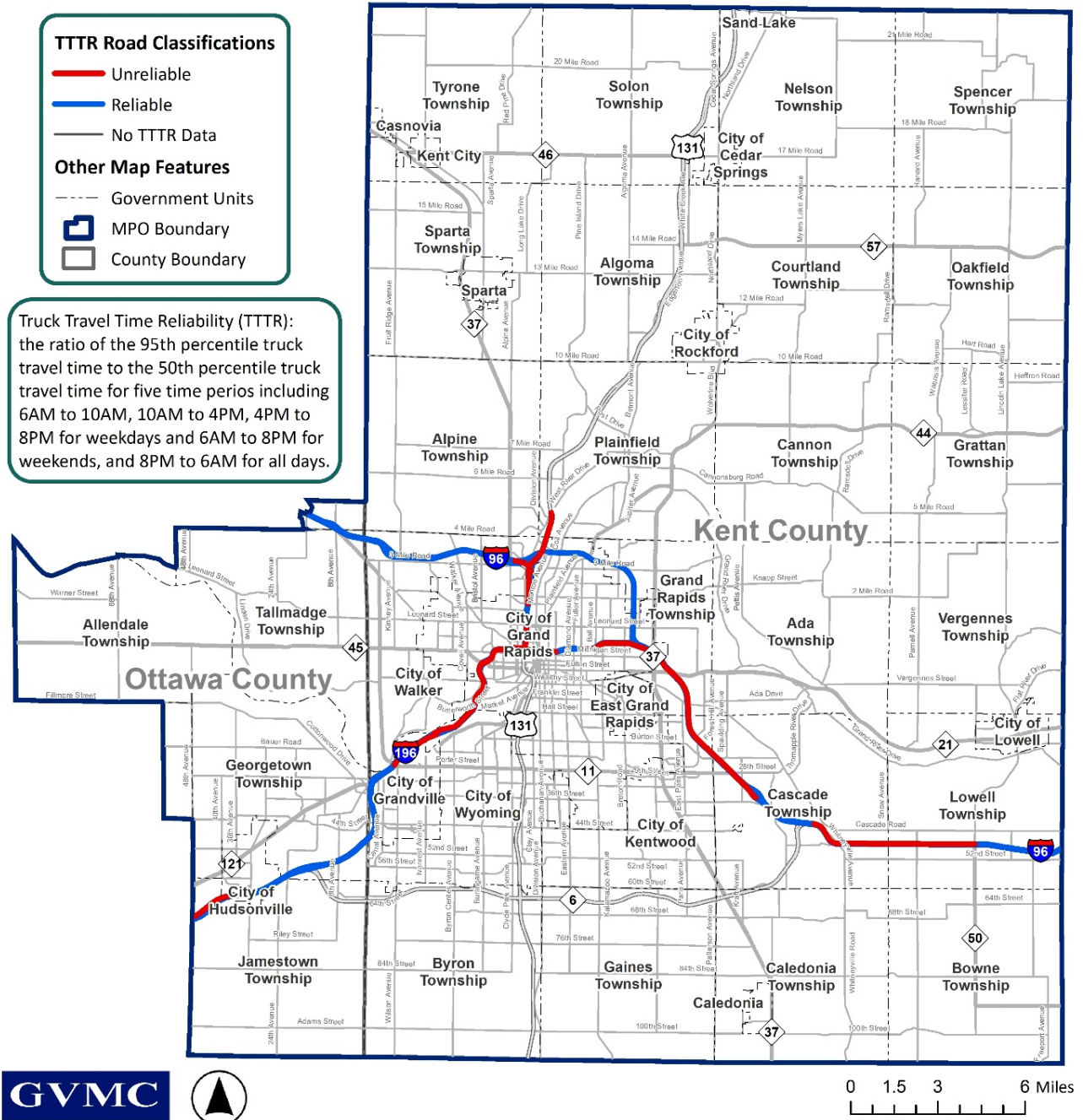
The reliability deficiency maps below display identified segments that are deemed unreliable within the GVMC region based on 2022 LOTTR and TTTR.

Level of Travel Time Reliability (LOTTR)



Map 12: Level of Travel Time Reliability (LOTTR)

Truck Travel Time Reliability (TTTR)



Map 13: Truck Travel Time Reliability (TTTR)

Identified Congestion Needs and Proposed Solutions

Need 1: Additional Funding

The transportation needs across all modes in GVMC's area far exceed the available resources. The congestion and reliability deficiency analysis conducted by GVMC indicates a need for significantly more funding than the current available resources to enhance the transportation system. While federal transportation funding offers some flexibility, it is inevitably limited. Therefore, GVMC encourages its members to explore alternative funding sources, including millages, special assessments, and grants, to improve the transportation system in their respective areas.

Need 2: Address Congestion Related to Capacity and Reliability Issues within the GVMC Region

Addressing congestion related to capacity and reliability issues involves implementing targeted strategies and improvements to alleviate traffic congestion and enhance the reliability of the transportation network. This includes implementing measures such as optimizing traffic signal timings, improving roadway geometries, adding additional lanes or capacity enhancements, enhancing public transit options, promoting ridesharing and carpooling initiatives, implementing intelligent transportation systems, and exploring innovative transportation solutions. The aim is to improve the flow of traffic, reduce travel times, enhance reliability, and provide a smoother and more efficient transportation experience for commuters and travelers.

Proposed Solutions

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

Increase transportation funding in the area relies on a combination of community involvement, strategic planning and effective communication with decision-makers. Firstly, outline the transportation needs and identify key challenges. Then develop a detailed plan that outlines specific projects and benefits. In addition, encourage the GVMC members to apply for transportation grants and diversify funding sources. Furthermore, integrating congestion data and statistics is important for informing decision-makers, aiding in the efficient allocation of resources and the implementation of strategic solutions.

2. 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 occupant vehicle (SOV). So many single occupant vehicles on the road can lead to traffic congestion and poorer air quality due to idling. Efforts to create a mode shift single occupancy vehicles to more sustainable transportation alternatives involve implementing a comprehensive strategy. Promoting and enhancing public transit services, including convenient scheduling and reliable routes, can encourage individuals to choose transit. In addition, development of comprehensive walking and bicycling infrastructure promotes non-motorized travel. Implementing ride-sharing programs and encouraging carpooling can also contribute to reducing the reliance on SOVs, coupled with public awareness campaigns highlighting the environmental and personal benefits of the alternative modes, this approach aims to create more active and sustainable transportation choices.

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

There has been extensive discussion by the MPO committee members and numerous public comments regarding the need to reduce congestion and related delays, improve reliability, and continue to improve transit service where feasible. To this end, GVMC has developed its first Transportation Demand Management (TDM) Plan for the region based on a collaborative process that involved discussions with employers, transportation agencies, and communities. TDM strives to reduce the demand for roadway systems (and need for roadway expansions) by influencing travel behavior and decision-making. The plan includes a set of recommendations for ways to unify existing and new TDM programs across

the region; integrate TDM into transportation and land use decision-making; build resources and relationships with employer partners; and generally help people who live and work in the region get around without a car. The plan can be viewed at www.gvmc.org/tdm.

4. Develop and Promote Data Sharing Principles

Data sharing promotes efficient use of resources and improves policy and decision-making for GVMC members. The approach to developing and advancing data sharing principles involves collaboration and a systematic process. This includes identifying shared data standards and protocols for compatibility, implementing user-friendly platforms and technologies that facilitate data exchange, and regularly monitoring and updating data to support decision-making.

5. Use the Congestion Management Process (CMP) to Determine the Best Strategy for Addressing Congestion on Congestion Deficient Segments

Federal transportation legislation requires large Metropolitan Planning Organizations, such as GVMC, to develop and implement a Congestion Management Process (CMP) as part of the metropolitan transportation planning process (23 CFR 500). GVMC staff used the CMP after deficiencies were identified through the modeling process to determine the best strategy for addressing every identified congested location. The CMP is intended to be a systematic way of monitoring, measuring and diagnosing the causes of current and future congestion on a region's multi-modal transportation system; evaluating and recommending alternative strategies to manage or mitigate current and future regional congestion; and monitoring and evaluating the performance of strategies implemented to manage or mitigate congestion. The CMP also emphasizes effective management of existing facilities through use of travel demand and operational management strategies. In cases where these methods are deemed ineffective to resolve the congestion issue of a corridor, capacity enhancing projects may be selected as the preferred alternative.

The GVMC CMP defines performance measures at both regional and corridor level. At regional level, performance measures can be used to monitor the overall performance of the CMP network and regional transportation system and evaluate various plan alternatives in the process of MTP development to determine which alternatives can achieve the best outcome with regard to the CMP objectives. They also can be used to monitor and track the progress toward the objectives. At the local level, performance measures are used to monitor the performance of the priority corridors in the CMP network and identify currently congested locations or anticipated congested locations in the future. They also are used by decision makers to assess and select congestion mitigation strategies and evaluate implemented strategies.

The GVMC CMP provides information about a wide range of congestion management strategies applicable to the Grand Rapids area. Using CMP strategies, the MPO committees can select the appropriate solution for congested locations. Additional information on the process can be found in the GVMC Congestion Management Process document.

Challenges

Model Challenges

The model could be improved for certain market segments with additional data resources, particularly on the transit side, where only limited survey points were available for transit trips. Improvements to the model could include additional survey points to target these users. Furthermore:

- The number of trip purposes is limited.
- Bicycle and Pedestrian modes are not assigned to the network, but are just given a percent of the mode share as a model output.
- Technological developments, such as autonomous vehicles, electronic vehicles, and scooters are not considered.

Funding

Funding has always fallen short of the regional needs; currently, the amount of funding the area receives is not enough

to maintain the existing system.

Non-Recurring Congestion

Traffic crashes have been increasing in the GVMC region during the past three years, causing more non-recurring congestion

Congestion Severity

With the growing economy and continued population growth, the Grand Rapids metropolitan area may experience more severe congestion and additional corridors will likely become more congested and/or unreliable if additional mobility options aren't provided. This may also have implications related to safety, delay, tourism, and the overall movement of freight and the economy as well. The effects should be monitored as changes are implemented.

Emerging Issues

Based on the socioeconomic data, the population of the Grand Rapids metro area is expected to increase significantly in population over the next 25 years. More and more freight will be moved through our area in the future. The area is also growing in tourism, offering additional attractions that draw visitors to our area. (See Tourism Section of Chapter 6). Altogether, increased population, tourists, and freight movement have the potential to significantly increase congestion in the area if mitigation strategies are not implemented.

Accomplishments

- Signal Optimization Projects at various locations in Grand Rapids
- Road weather information systems at various locations
- Rural Freeway Traffic Management System on I-96
- \$41.2 million investment on major and minor widening projects in the FY2023-2026 Transportation Improvement Program (TIP)
- \$45 million "The Flip" project at I-196/I-96/East Beltline Ave. interchange to improve congestion and safety
- \$14.7 million spent on major and minor widening projects in the FY2020-2023 Transportation Improvement Program (TIP)
- Secured grant for the M-37 widening project from 92nd Street north to 76th Street



Traffic on M-37 from 76th St. to 84th St.

Supporting Documents

- [MDOT 2022-2026 Five Year Program](#)
- [GVMC 2020-2023 & 2023-2026 Transportation Improvement Program \(TIP\)](#)
- [GVMC Congestion Management Process Document](#)

Supporting Goals and Objectives

Please see the matrix included in Appendix E.



Bridge



Burton St. Bridge Reconstruct over I-96 in Cascade Twp; Photo courtesy of GVMC Staff

Highlights:

- There are 737 bridges in GVMC's planning area and 691 bridges in the MPO area. This amounts to more than 5.5 million square feet of bridge deck in the MPO.
- As of 2021, 43% of all bridges are in good condition, 53% are in fair condition, and 4% are in poor condition for the MPO.

Overview

The Grand Rapids metropolitan area has numerous roads, highways, railways, culverts, and waterways that have led to a large collection of bridges in our planning region—737 to be exact. These bridges account for 5.6 million square feet of bridge deck in the planning area and 5.5 million for those within the MPO. The design of the bridge, the number of lanes, and expected loads that will be carried define the facility's cost, which is much more expensive than a traditional roadway. According to 2022 estimates from the Federal Highway Administration (FHWA), the replacement cost for one square foot of bridge deck in poor condition was \$321 on a non-National Highway System (NHS) bridges (see NHS definition below). With such a high cost, bridges need to be built to last with accommodations for multi-modal transportation.

National Highway System (NHS): Included in the NHS are public roads defined by the NFC (defined below) as interstate, other freeways, and other principal arterials (both state and local facilities). FHWA defines this system as important to the nation's economy, defense, and mobility. All NHS roads must comply with applicable Federal regulations including design standards, contract administration, State-FHWA oversight procedures, Highway Performance Monitoring System (HPMS) reporting, national bridge inventory reporting, national performance measure targets and data collection, and outdoor advertisement/junkyard control. It's important to point out that not all National Functional Classification (NFC) defined roads are classified as part of the NHS.

National Function Classification System (NFC): FHWA developed the NFC method for all public roads to delineate higher facility functions that emphasize mobility and moving traffic, from roads that have lower functions that might access residential properties, for example. The values are listed from the highest class to the lowest, which include: Interstate, Other Freeways, Other Principal Arterials, Minor Arterials, Major Collectors, Minor Collectors, and Local. Roads classified as local are not on the NFC Federal-aid system. The NFC system is intended to group roadways with similar characteristics and travel patterns, such as mobility on the system, access points to and from the system, as well as the function of the roadway itself (local trips, intercity and regional trips, freight, etc.).

Bridges are an important asset to our region, as the number of bridges in an area contributes to travel accessibility and impacts emergency response times and travel demand. The less opportunity for cross-community travel, the more demand there will be on the transportation network.

Process for Determining and Addressing Need

GVMC staff uses Roadsoft to access bridge condition ratings to determine how GVMC is meeting established performance measures. Bridge performance measures, and how they influence the identification of bridge needs and project selection, are highlighted in the [System Performance Report Companion Document](#). Because MDOT completes the majority of bridge projects in GVMC’s area and administers all local bridge funds, the MPO has little influence over the projects selected. However, GVMC includes funded bridge projects in our Transportation Improvement Program (TIP) and the 2050 Metropolitan Transportation Plan (MTP). Unfunded bridge projects remain on our illustrative list of projects for future funding consideration. GVMC also encourages local agencies to apply for local bridge funds administered by MDOT. A list of MDOT’s bridge preservation and replacement projects is included in their 2023-2027 Five-Year Transportation Program.

The National Bridge Inventory (NBI) rating system was used to identify bridge deficiencies for the GVMC area for 2021 on the NHS. The results of this analysis are depicted in the table below.

Number of NHS bridges by Condition			
	Good	Fair	Poor
Statewide (2020)	838	1933	196
Grand Valley Metropolitan Council (2021)			
MDOT	111	213	15
Local	20	37	5

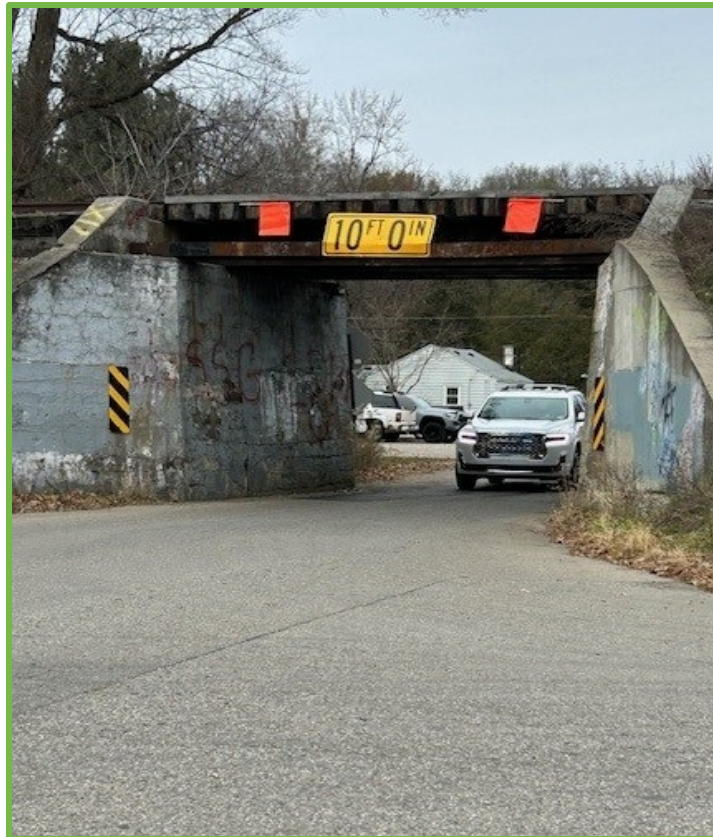
Table 2: Bridge condition in the GVMC area

Based on the information above, 32% of the NHS bridges in the GVMC area are in “Good” condition and only 5% are in “Poor” condition. This is a little better than the state average of 28% of NHS bridges in the “Good” category and 6% in the “Poor” category. The non-NHS bridges in our MPO in poor condition account for 23,065 square feet of deck area. With a cost estimate at \$321/ft₂, as mentioned above, that equates to \$7.4 million in funds needed to bring these out of the poor condition category. The current conditions of all bridges in our MPO area are 43% Good, 53% Fair, and 4% Poor as depicted in the “GVMC MPO Bridge Conditions” map on the page 84.

Two candidates identified for replacement and scheduled for improvement are depicted on the following page.

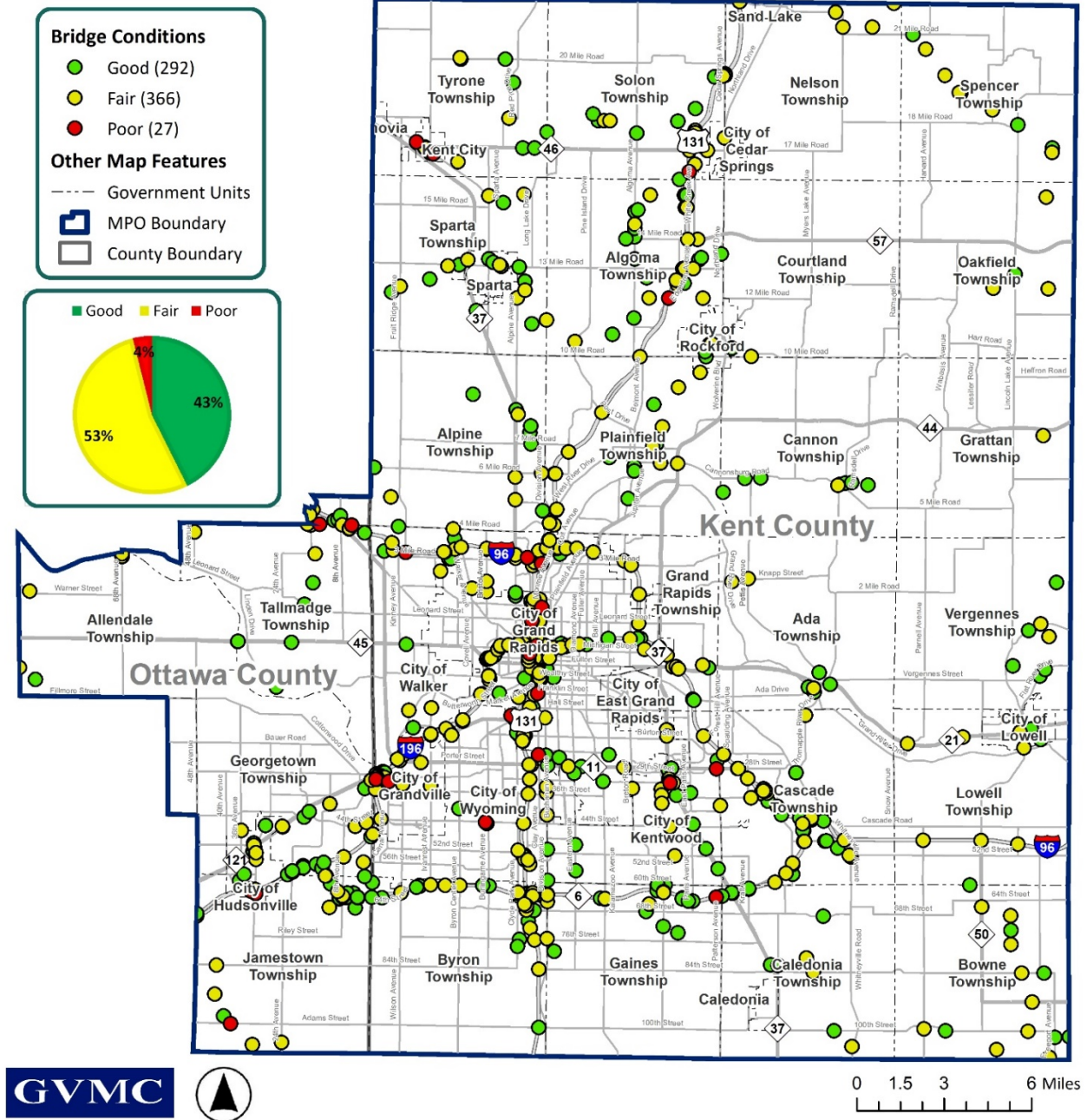


Packard Dr. Bridge over the Rogue River reconstructed this year in Plainfield Twp; Photo courtesy of Kent County Road Commission (KCRC)



Bristol St. Bridge scheduled for reconstruction in Walker in FY2024; Photo courtesy of GVMC Staff

GVMC MPO Bridge Conditions



Map 14: MPO Bridge Conditions

Identified Needs and Proposed Solutions

Identified Need 1: Increase the Number of Bridges in the “Good” Category by Increasing Funding

The Local Agency Program (LAP) Bridge Unit develops and manages a rolling 3-year bridge program using federal and state bridge funds to assist local municipalities in replacing and rehabilitating bridges and to maintain the local bridge system. Requests for applications are sent out to local agencies on an annual basis with submissions reviewed and rated to determine which will be added to each region’s 3-year plan. Because of this process, the local agencies are heavily relied upon to submit their own projects within the state’s timeline to receive consideration. Once approved, the projects move on to the bridge design phase and funds become allocated.

Proposed Solution: Readiness and Attention to Schedule

The bridge program is coordinated by local agencies and MDOT. To allocate the most funds to our area, it’s recommended to stay current with MDOT’s time requirements and scheduling for the bridge application process. A flow chart and schedule of steps can be found [here](#).

MTP Recommendation and Proposed Solution: Work to increase transportation funding in GVMC’s MPO area.

More funding is needed to increase the number of bridges in the “Good” category. This could be achieved in several ways, including continuing 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 or diverting additional funds toward bridge projects.

Note: MTP recommendations, including action steps to achieve them, are included in Chapter 11.

Challenges

Funding

The principal challenge in maintaining and rehabilitating bridges is funding. Funding available for bridge projects pales in comparison to the funds needed. Proper maintenance and funding strategies are required to both preserve bridge conditions and improve multi-modal access for all users of our transportation system.

Emerging Issues

One of GVMC’s goals is to improve and promote pedestrian and bicycle facility movement and other forms of active transport, which will take coordination with our local jurisdictions and MDOT. It is essential for GVMC to identify gaps in our active transportation network when bridge improvements are scheduled and to pay close attention to the needs of all users of our transportation system. It’s also important not to rush the funding allocation process at the MPO level and make sure all modes of transport are being planned for during project inception.

Accomplishments

One very notable accomplishment for the region was the multi-jurisdictional collaboration on the 2020 reconstruction of the 100th Street Bridge over US-131 in Byron Center. This bridge gained notoriety in 2018 when several over-height trucks struck the bridge, spilling large loads. It has been hit several times causing the need for coordination with multiple government and transportation entities to get creative in identifying design and funding options for a quick solution. A video of the completed project can be found [here](#).

The \$10.5 million project was finished in October of 2020. The design included components to increase safety, create smoother truck travel, provide active transportation facilities, and address the height issue bringing the new clearance height to 16 feet, 3-inches.

Furthermore, in the FY2023-2026 TIP, \$34.6 million is/was programmed in our MPO region for expenditures on bridge capital and preventative maintenance, rehabilitation, or reconstruction with the majority of that in FY2025 for replacing the bridge on I-96 at the East Beltline (M-37/M-44). Another project is scheduled for FY2024 for I-96 over

Fruit Ridge Avenue. This has a rough estimate of \$24 million and includes an active transportation component. Currently, this location serves as a choke point with lots of mileage for pedestrians and bike travelers to traverse on either side of the but no active transportation facilities on the bridge to connect them and a very narrow shoulder. The previous FY2020-2023 TIP had \$139.5 million in programmed funds for bridge projects. Because of the variability in bridge construction needs and costs, it's hard to project expenditures over the next 30 years.



*Picture of the completed 100th St. Bridge featuring active transport access;
Photo Courtesy of MDOT*

Supporting Documents

- [MDOT 2023-2027 Five Year Transportation Program](#)
- [GVMC 2023-2026 Transportation Improvement Program \(TIP\)](#)

Supporting MTP Goals and Objectives

Please see the matrix included in Appendix E.



Pavement Condition



Coldbrook Ave. Watermain & Road Reconstruct performed using local funds in Grand Rapids; Photo courtesy of GVMC Staff

Highlights:

- GVMC staff rates 1,600 federal aid miles and 800 miles on the local network annually in our data collection vehicle using the Pavement Surface and Evaluation Rating (PASER) system. In addition, this vehicle is capable of collecting forward and rear facing images, recording International Roughness Index (IRI) data, and the depth of rutting detected in the wheel path to help inform maintenance decisions by our road agencies.
- GVMC and its members contribute \$48.5 million annually to maintain the federal aid network, excluding any investments on the MDOT owned roadways.
- If we continue to invest in pavement condition at the current rate, GVMC's roadways will maintain an average PASER rating of 3.17 by 2050, which is considered "poor."
- In 2022, pavement condition of federal aid roads in our region currently, excluding MDOT routes, was 30% good, 36% fair, and 34% poor.
- Doubling the annual budget would allow our area to reach an average PASER rating of 5.25, or "fair" condition. by the year 2050.

Overview

The Grand Rapids metropolitan area has been developing, improving, and maintaining a viable transportation system for area residents and businesses for over 100 years to efficiently move people and goods.

Every summer, GVMC staff uses a specially equipped data collection vehicle to rate 1,600 linear federal aid miles and 800 miles on the local network with the Pavement Surface and Evaluation Rating (PASER) system. The PASER system allows staff to evaluate every road segment and assign it a score, which determines whether the segment qualifies for federal funding and the type of fix it is eligible to receive. These PASER ratings, and appropriate fixes by ratings, are included in

the tables below. This information is also included in GVMC’s Policies and Practices for Programming Projects document, which outlines eligibility criteria for all federally funded projects.

Once data collection is completed, GVMC staff provides PASER ratings to member road agencies and jurisdictions for consideration. This system ensures that our members are continually aware of the state of not only their roads, but also the condition of our entire federal aid system. In addition, this vehicle is capable of collecting forward and rear facing images, recording International Roughness Index (IRI) data, and the depth of rutting detected in the wheel path. Combined with PASER data, this data allows local decision makers to make well-informed choices for prioritizing projects for roadway condition improvements and safeguards local federal funding by making certain that it is only allocated to eligible projects.



GVMC Asset Management Vehicle and Team

In 2022, the pavement condition for our MPO area was 30% good, 36% fair, 34% poor for 1,100 miles of non-MDOT Federal Aid routes. This PASER scale is outlined in the table below with the level of maintenance or rehabilitation needed based on the rating. GVMC’s “Policies and Practices for Programming Projects” document identifies what improvements are eligible based on the PASER rating a specific road segment receives. The table below also identifies acceptable fixes based on these criteria.

PASER Scale	
PASER 10-8	Good; no maintenance necessary
PASER 7-5	Fair; in need of preventative maintenance (i.e., resurfacing)
PASER 4-1	Poor; in need of structural overlay or reconstruction
PASER Rating	PASER Investment Eligibility Scale
PASER 10-8	Not eligible for federal funds
PASER 7	Eligible for crack sealing funding*
PASER 6-5	Eligible for sealcoat/thin overlay funding*
PASER 4	Eligible for structural overlay funding
PASER 3-1	Eligible for reconstruction funding

Table 3: PASER Scale & Investment Eligibility

Reconstruction: when a distressed road requires a subgrade fix, a complete reconstruction is required. This type of project brings the roadway back to dirt temporarily to add a new road base. Reconstruction projects can last several months or longer and may involve significant delays for the traveling public. Reconstruction projects also cost more than a standard rehabilitation or preservation project. However, the fixed life of a reconstruction project is much longer than rehabilitation or preservation maintenance projects.

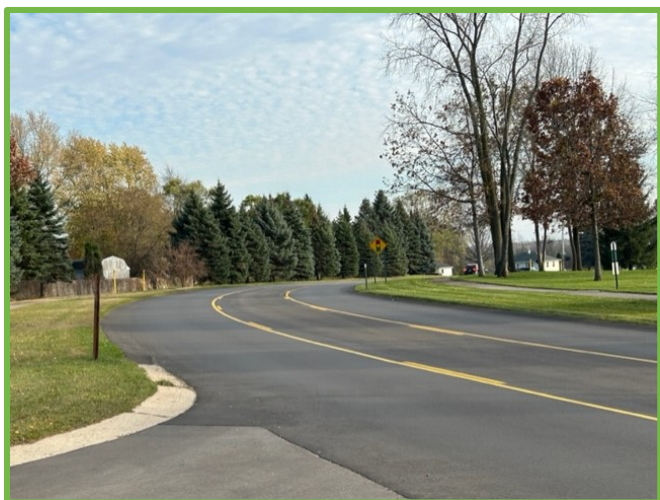


Ottawa Ave. Reconstruct in Grand Rapids; photo courtesy of GVMC Staff



10 Mile Rd. Reconstruct West of Rockford; photo courtesy of Kent County Road Commission (KCRC)

Resurfacing: restoring pavement by addressing surface issues and adding a fresh layer of asphalt. For concrete surfaces, this can be in the form of joint replacements, diamond grinding, inlay, or other rehabilitation fixes. Resurfacing projects are also known as overlay projects. Resurfacing projects, as well as other rehabilitation or capital preventative maintenance projects, such as crack sealing, are short term, cost less than reconstruction, and have less impact on travel delays. (See photos below for examples.)



18th Ave. Resurface in Georgetown Twp; photo courtesy of GVMC Staff



32nd Ave. Resurface in Hudsonville; photo courtesy of GVMC Staff

Process for Determining and Addressing Need

As stated above, GVMC is continually aware of the needs of our system through the staff's annual pavement data collection efforts. However, for the comprehensive needs analysis, staff analyzed this data further, investigating the level of investment that would be needed to maintain an average pavement condition of "fair" through the length of the MTP. The existing average PASER rating in 2022 was 5.02, or "fair" condition.

The network for this analysis included all roads within the MPO defined by the National Functional Classification (NFC) system (see definition on page 82) as federal aid roads with the omission of MDOT facilities (trunkline system), which were removed because of budget variations, statewide and regional needs, and the extent of deteriorating roadways. Due to the accelerated deterioration of the trunkline, more reconstruction projects may be required to address the rapid rate of decline for these roads. The baseline budget for this network was \$45.8 million dollars, which included federal, state, and local match dollars, as well as expenditures by jurisdictions on federal aid roads outside the Transportation Improvement Program (TIP). On average, \$25.8 million dollars was spent annually through the TIP and an additional \$20 million was invested by MPO jurisdictions on the federal aid network.

Staff compared the available budget to the pavement deterioration curves in Roadsoft (GVMC's asset management software) to determine deterioration rates for the GVMC federal aid network for several different scenarios, which included:

- Scenario 1: GVMC maintains our current level of investment at \$48.5 million.
- Scenario 2: GVMC increases our current level of investment by 25% to \$60.6 million.
- Scenario 3: GVMC increases our current level of investment by 50% to \$72.8 million.
- Scenario 4: GVMC doubles our current level of investment to \$97 million.
- Scenario 5: GVMC does nothing, which demonstrates how fast pavement would deteriorate if there was no funding to fix our roads.

Within Roadsoft, PASER ratings determine at what point a road surface type will be triggered and applied a fix to extend the service life of the facility. Each scenario was optimized by using a mix of fixes, a quality method of managing pavement condition, and had a timeline out to 2050. With multiple jurisdictions represented in the analysis area, it is difficult to define an exact dollar amount for each type of improvement. Changes in road width and improvements made in the right of way vary greatly depending on the location of the facility and if it has urban or rural characteristics. Therefore, input was provided at the state, county, and city levels to determine a reasonable cost for various treatments.

GVMC has historically addressed pavement condition needs during the development of the Transportation Improvement Program (TIP). Prior to selecting projects, GVMC staff provides committee members with a deficiency list of eligible

Public Involvement Spotlight



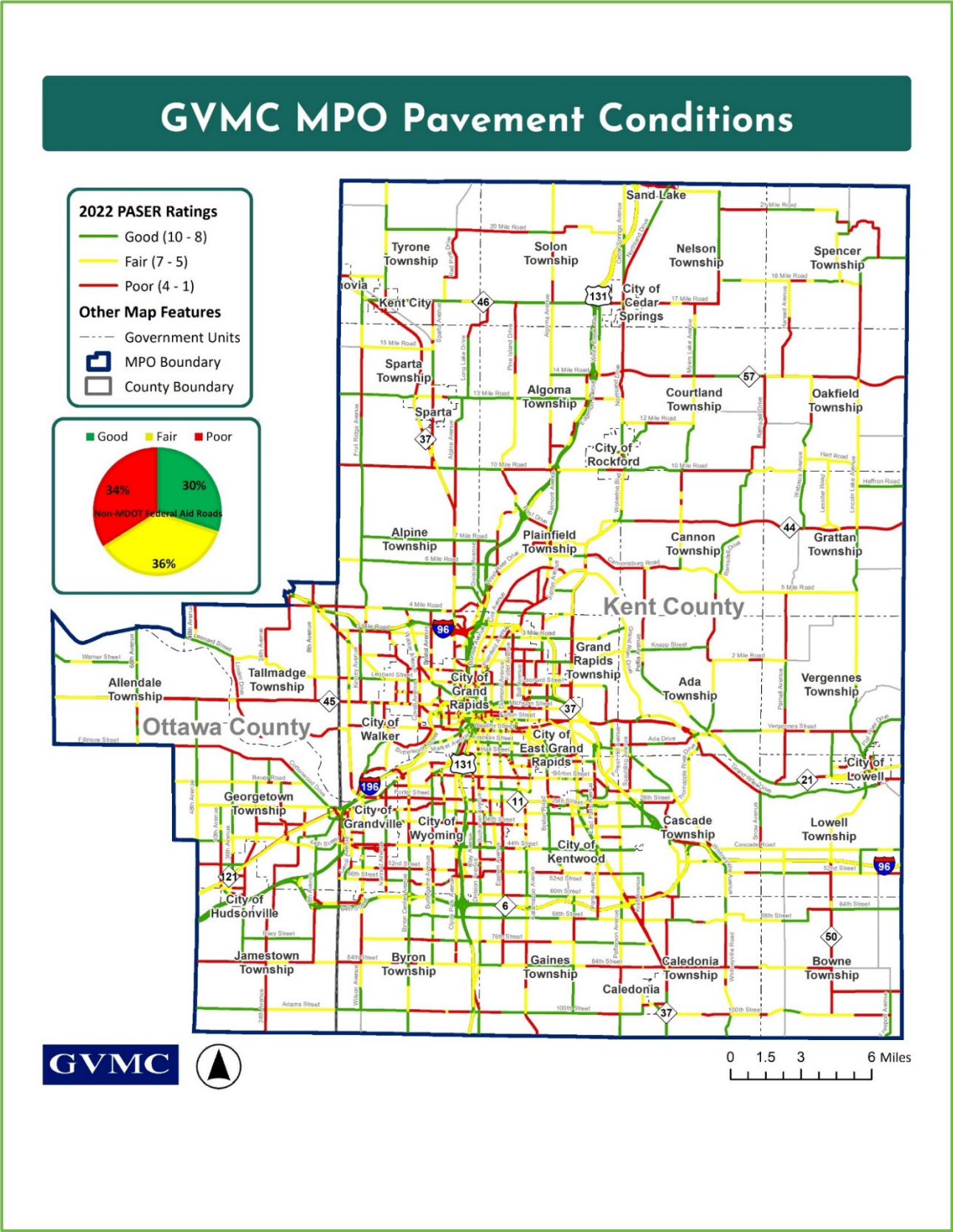
What Does the Public Say about the Condition of our Pavement?

Our recent survey showed that the public's top priority was improving roadway pavement condition, with nearly 30% of respondents choosing this as #1 out of 7 options. (See [Public and Stakeholder Engagement Companion Document](#) for complete survey results.) Public comments about the state of our roadway overwhelmingly echoed this sentiment, with many asking us to simply "fix our roads." Here are two comments to highlight:

"Road conditions are important for commercial and tourism. Investment needs to continue while investigating other technologies which may prolong pavement life."

"Fix the potholes. MI roads are the

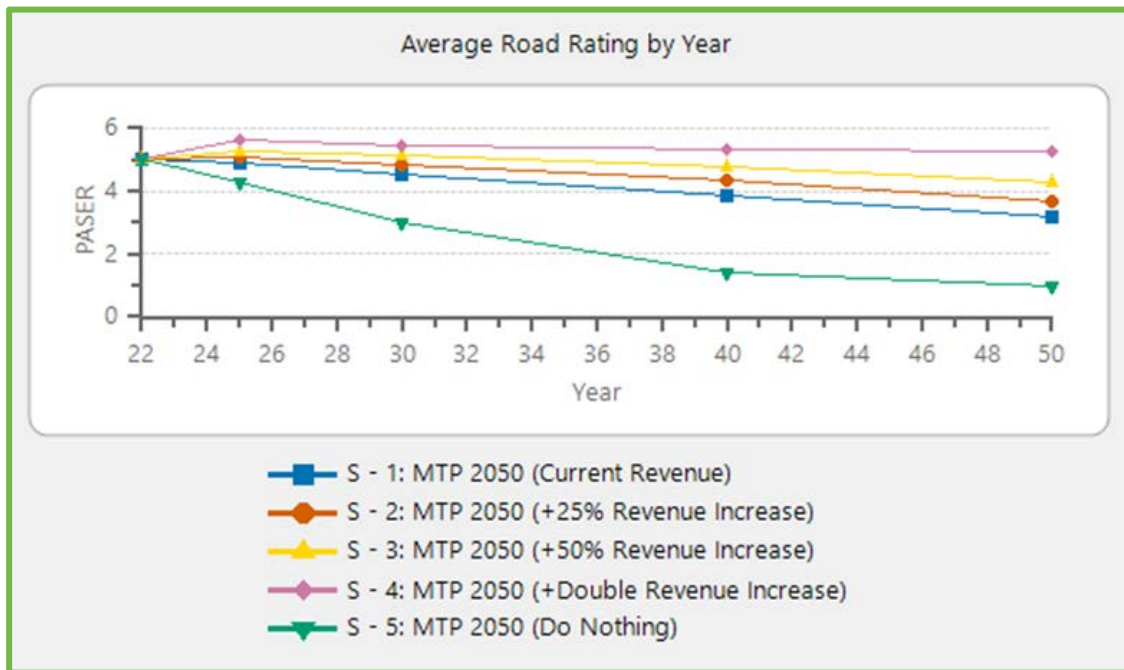
projects, which includes PASER ratings for all deficient segments, among several other performance measures. The map below shows the pavement conditions in 2022 for the MPO.



Map 15: GVMC MPO Pavement Conditions

Identified Needs and Proposed Solutions

Using Roadsoft condition projections combined with GVMC’s eligibility requirements from our “Policies and Practices” document, the current investment will not maintain the existing system condition, which is nearly into the “poor” category. The funding would need to be doubled to reach an average PASER rating of 5.25, or “fair” condition, through 2050. The different scenarios with their corresponding investment strategies are identified in the figure above.



Need 1: Additional Funding to Improve Pavement Condition

The condition of the local federal aid system in the GVMC area, as well as the state of Michigan, is in decline, and without a significant increase in investment and optimal timing of improvements, this decline will become more rapid. Many factors are contributing to this situation. The stagnant and, in some cases, reduction of investment in the system combined with the increase in basic costs to maintain it are two prime factors.

Proposed Solution: Readiness

The reality of doubling the investment is not likely, but we need to plan for the possibility and put the preparations in place to take advantage of funding if it becomes available. For instance, GVMC maintains a lengthy illustrative list of projects that can move forward quickly when, or if, additional funding opportunities arise.

Proposed Solution: Use Mix of Fixes to Extend the Life of Our Pavement Region-Wide

Currently, GVMC defines priorities and deficiencies with care while incorporating a “mix of fixes” to extend the life of our pavement region wide. For our short-range Transportation Improvement Program (TIP), any road that is fair or poor is defined as deficient and eligible to receive funding. The type of fix is regulated by policies and practices defined by our members and included on page 88.

MTP Recommendation and Proposed Solution: Work to Increase Transportation Funding in GVMC’s MPO Area

GVMC and its members must show that we’re using as many resources as possible to improve the condition of the network to gain the attention of those able to change future financial allocations. Furthermore, GVMC encourages its members to apply for grants through MDOT-based programs and to pursue local revenue sources, such as millages, special assessments, or grants, to help them maintain their roadways in a state of good repair.

MTP Recommendation and Proposed Solution: 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. GVMC and its members will need to work to provide adequate funding to preservation activities and projects to maintain the multimodal transportation system in a state of good repair.

Note: MTP recommendations, including action steps to achieve them, are included in Chapter 12.

Challenges

Funding

The principal challenge in maintaining our pavement condition in a state of good repair is a shortage of funding. As stated previously, it would take a 100% increase in funds, or an additional \$48.5 million, for our pavement condition to reach a PASER rating of 5.25 in the “fair” category. Without a significant funding boost, it is unlikely that the condition of our roads will improve beyond their existing status.

It’s important to note that state initiatives like the [“Rebuilding Michigan Plan,”](#) and the bipartisan [“Building Michigan Together Plan”](#) are essential recent government programs and amount to the largest infrastructure investments in state history. The Rebuilding Michigan Plan, approved by the State Transportation Commission in January 2020, allows MDOT to sell a total of \$3.5 billion in bonds to finance new and modified road construction & bridge projects across the state between 2020 and 2024. This may help MDOT achieve the performance goal to have 90% of trunkline pavement in “good” or “fair” condition.



Michigan’s Climate

Michigan’s climate also plays a significant role in the decline of the system, as the freeze/thaw cycle of our winters causes snow on the roads to melt and refreeze, leading to potholes.

Emerging Issues

Climate Change

It is possible that the more frequent occurrence of extreme weather events resulting from climate change could cause our infrastructure to crumble even faster. For example, storms during the summer of 2019 caused flooding that resulted in roads and bridges being unpassable or washed out throughout the state. GVMC is able to monitor the state of our system every year by collecting pavement data and is therefore able to stay updated on any climate-related impacts to our infrastructure.

Accomplishments

Between FY2020-2023, the following amounts were invested in maintaining the condition of our federal aid roadways:

- Local reconstruction allocation was \$41,319,903 (~ 24.2 miles), with MDOT investing \$115,364,851 (~ 17 miles) on state owned roads.
- Local road rehabilitation, which included mostly resurfacing projects was \$74,412,222 (~111.3 miles), with MDOT investing \$64,191,822 (~42.5 miles) on state owned roads.

- Local road capital preventative maintenance, such as crack filling and minor overlays was \$7,120,408 (31.2 miles), with MDOT investing \$47,958,764 (~34.8 miles) on state owned roads.

Supporting Documents

- [GVMC FY2020-2023 Transportation Improvement Program](#)
- [MDOT FY2023-2027 Five Year Plan](#)
- [GVMC's Policies and Practices for Programming Projects \(Appendix E\)](#)
- [GVMC's 2022 Regional Pavement Condition Survey Report](#)



Construction on 84th St. between Hanna Lake Ave & East Paris Ave in Gaines Twp; photo courtesy of KCRC

Supporting MTP Goals and Objectives

Please see the matrix included in Appendix E.



Highlights



Intersection of 28th St. and Division Ave. S, which was ranked No.1 intersection for fatal and serious injury crashes from 2018 to 2022 in the GVMC area

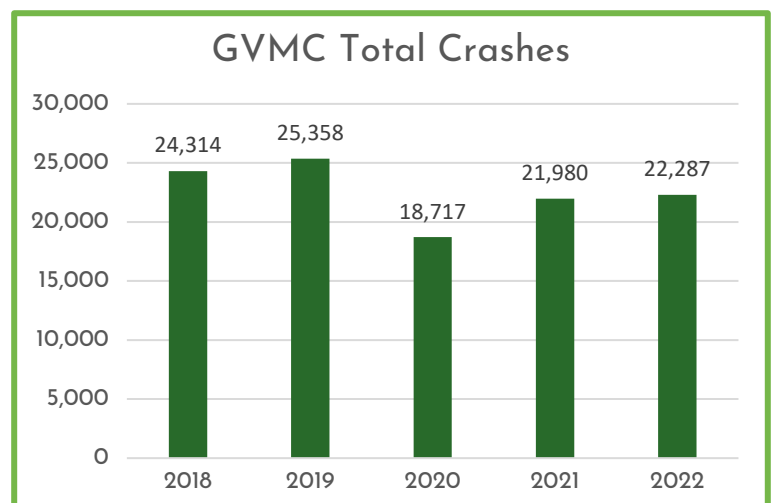
- Over the past five years, an average of 64 people have died each year from traffic crashes in the Grand Rapids Metro area
- 30% of these fatalities involved a pedestrian, bicyclist, or motorcyclist
- 23% of all serious injuries involved a pedestrian, bicyclist, or motorcyclist
- Number of traffic fatalities in GVMC region fell to 60 in 2022 from 74 in 2021
- Number of fatalities and serious injuries of pedestrian and bicyclist decreased from 68 in 2019 to 58 in 2022
- \$ 58.91 million was invested in safety projects between 2020-2023

Overview

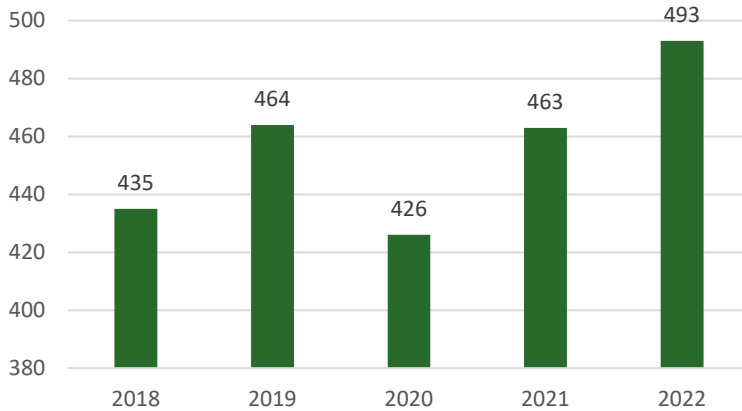
According to the National Highway Traffic Safety Administration, 42,795 people died in U.S. motor vehicle crashes in 2022, a 0.3% decrease from the 42,939 fatalities in 2021. The estimated fatality rate for 2022 was 1.35 fatalities per 100 million Vehicle Miles Traveled (VMT), down from 1.37 fatalities per 100 million VMT in 2021. The IJIA places a strong emphasis on improving safety and includes the new Safe Streets and Roads for All (SS4A) program, which GVMC has received funding through to develop a safety action plan to reduce roadway crashes and fatalities in the region.

Over the last five years in the GVMC planning area, there have been an average of 22,531 crashes, 456 serious injuries, and 64 traffic fatalities per year. (See chart to the right and on the following page.) A list of the top 20 crash intersections and segments within the MPO boundary ranked by the number of serious injury and fatal crashes, as well as by serious injuries and fatalities per vehicle miles traveled (VMT), can be found in Appendix H.

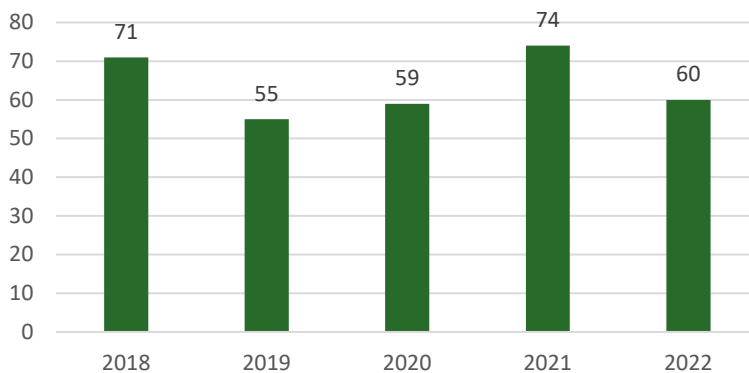
With these statistics in mind, GVMC has focused planning resources on reducing traffic crashes as well as traffic fatalities and serious injuries in order to reduce the loss of human life. These efforts ensure that safety planning remains a cornerstone of GVMC's transportation planning process.



GVMC Traffic Serious Injuries



GVMC Traffic Fatalities



Process for Determining and Addressing Needs

Collaboration with GVMC Safety Committee and other Partners

In the spring of 2023, the GVMC Safety Committee was assembled to help with the process of assessing the regional safety needs for the development of the 2050 Metropolitan Transportation Plan (MTP). The Safety Committee consists of representatives from agencies and organizations in Kent and eastern Ottawa Counties (see member list above). The goal of this committee is to bring traffic safety professionals and other stakeholders together on a regular basis to exchange information on best practices being utilized in their individual agencies and to maximize the resources available to them.

In line with our dedication to improving traffic safety, GVMC has been collaborating with our partner agencies setting regional safety goals starting in 2021, aiming to enhance traffic safety through support of the implementation of safety projects listed in the TIP, encouraging incorporation of safety enhancements into all transportation projects, and promoting safety awareness at diverse events and through public service announcements and safety education campaigns. In addition, GVMC has been awarded a federal Safe Streets and Roads for All (SS4A) grant to develop a

Safety Committee Members:

Alpine Township
 Association for the Blind and Visually Impaired
 Caledonia Charter Township
 City of Grand Rapids
 City of Walker
 City of Wyoming
 Disability Advocates
 Grand Rapids Public Schools
 Grandville Police Department
 GVSU Police / Public Safety
 Kent County
 Kent County Emergency Services
 Kent County Department of Public Health
 Kent County Road Commission
 Kent County Sheriff's Office
 League of Michigan Bicyclists
 MDOT
 Oakdale Neighbors/Boston Square
 Community Bikes
 Plainfield Charter Township
 Riding for Ryan
 Roosevelt Park Neighborhood Association
 Senior Neighbors
 Tallmadge Charter Township
 The Rapid
 The Right Place
 Walker Police Department

Regional Safety Action Plan for our planning area, which will identify regional safety projects and strategies that will move the needle toward zero traffic deaths and serious injuries in the GVMC region.

GVMC also maintains a data-driven Traffic Safety Plan, which identifies safety issues and establishes goals, targets, emphasis areas and strategies to reduce fatalities and serious injuries for all road users, thereby helping to direct safety investment decisions. The Traffic Safety Plan integrates strategies from the four E's of traffic safety: engineering, enforcement, education, and emergency medical services. Regional safety policies that help guide GVMC's Traffic Safety Plan implementation include:

- Apply a comprehensive, integrated approach when addressing highway safety problems that include the vehicle, driver, other road users, and roadway elements through a combination of engineering, education, enforcement, and emergency services solutions.
- Focus safety funding on high-priority road segments, intersections, and initiatives as identified in the West Michigan Traffic Safety Plan and the GVMC Traffic Safety Plan.
- Educate road users on their role and responsibilities in traffic safety, including distracted driving.
- Promote and educate residents about safe walking and bicycling to improve community health, reduce traffic congestion, and provide viable alternatives to driving.
- Incorporate elements of complete streets and green streets to holistically manage the transportation system for all users and reduce conflicts between vehicles, transit, rail, and nonmotorized modes of travel.
- Increase connectivity and accessibility for all modes of the transportation system to core services in the GVMC region, including hospitals, educational institutions, job centers, grocery stores, downtowns, and parks as a mechanism of improving safety.
- Coordinate with stakeholders, including the Governor's Traffic Safety Advisory Commission (GTSAC), local government, road agencies, advocacy groups, and other public and private entities, on safety implementation activities.
- Support and promote the use of transportation-related technologies and travel demand management techniques that lead to safer, more efficient, and more economical highway systems in the region.
- Support traffic incident management that is designed to facilitate the safety of motorists and first responders as well as the expeditious restoration of traffic flow stemming from both major and minor traffic incidents back to normal conditions.

Safety Needs Analysis

GVMC staff analyzed the safety of the transportation system during a comprehensive needs analysis performed in May of 2023. The GVMC Safety Committee members were actively engaged in this process and identified additional safety needs that will be integrated into the 2050 MTP.

Safety and Road Projects

As part of the comprehensive needs analysis, GVMC staff performed a safety deficiency analysis which included whether road segments were safety deficient for the following areas:

- The average rate of traffic serious injuries per 100 million vehicle miles traveled on the road segment
- The average rate of traffic fatalities per 100 million vehicle miles traveled on the road segment

This analysis determined whether the roadway segment was considered safety deficient based on the fatality or serious injury rate being greater than 2023 state targets for those performance measures.

For a segment to become a project, it must be determined to be deficient for safety, capacity, or pavement/bridge condition based on the protocol established in GVMC's Policies and Practices for Programming Projects document. Furthermore, GVMC has maintained a safety plan or safety management system for many years. Currently, this document lists the top 20 intersections and segments ranked by the following safety criteria:

- Intersections Ranking by Total Crash (2018-2022)
- Intersections Ranking by Fatal and Serious Injury Crash (2018-2022)
- Intersections Ranking by Rate of Fatal and Serious Injury Crash (2018-2022)
- Segments Ranking by Total Crash (2018-2022)
- Segments Ranking by Fatal and Serious Injury Crash (2018-2022)
- Segments Ranking by Rate of Fatal and Serious Injury Crash (2018-2022)
- Intersection Ranking by Pedestrian Crash (2018-2022)

Safety has been considered during the project evaluation process for nonmotorized projects listed in the current **Active Transportation Plan** as well. A list of **illustrative** projects from this plan is included in **Appendix I**. This includes awarding points for projects that help eliminate conflict points between vehicles and forms of nonmotorized travel. Such projects should minimize the incidents of crashes, injuries, and fatalities as well.

Project-Level Safety Needs

Safety improvements are considered during the design phase for all projects. If changes can be made that improve safety, they are incorporated. All projects are also built according to the Association of State Highway and Transportation Officials (AASHTO) standards, which include safety requirements.

Identified Needs and Proposed Solutions

Need 1: Reduce Fatality, Serious Injury, and Vulnerable Road User Crashes

Reducing fatality, serious injury, and vulnerable road user crashes was a need identified by the Safety Committee and is also demonstrated by the fatality and serious injury crash rates for the GVMC region. The crash types listed below are areas where the GVMC region is performing worse than the state of Michigan as a whole. Charts and graphs showing data on these emphasis areas can be found in the [GVMC Traffic Safety Plan](#).

Public Involvement Spotlight



What Does the Public Say About Safety?

In GVMC's recent public survey in 2022, there was one related to safety: "How would you evaluate the safety of roads and intersections in Kent and eastern Ottawa Counties?" The results of this survey question were:

- 6.58% Very Poor
- 26.60% Poor
- 30.93% Neither Good nor Poor
- 34.63% Good
- 1.26% Very Good.

GVMC also received public comments about safety improvements through the survey. Some examples of these comments include:

"Hunsberger Ave 49525 is treacherous when school is starting and ending each day. Intersections on streets that big schools are on and no pedestrian crossing over Plainfield Ave at Hunsberger."

"We should be striving for no serious injuries and deaths on our streets. Connections between urban and suburban areas need to be better and consistent, especially bicycling and walking facilities. Pedestrian access, even to transit, is quite poor unless you are in GR, Wyoming, and parts of Kentwood. Require all major developments to develop and implement travel management plans for their staff and operations. No mention of intercity bus service, van or carpooling, other small vehicles like scooters/skateboards. We're more interested in technology that manages traffic for safety reasons over driverless cars. Expand incentives for transit access, electric bicycle rebates, etc."

"Look into stop lights and lights at intersections as drivers are distracted and 4 way stops are not as safe as they used to be."

Young Driver Crashes

Young drivers lack basic driving experience and are more likely to engage in risky and aggressive driving behaviors like speeding and tailgating. They also tend to have more passengers in their vehicles. Therefore, young drivers are much more likely than other groups to be involved in violent traffic crashes. In the GVMC region, young drivers under age 24 were involved in 35.76% of all traffic crashes and 34.14% of fatal and serious injury crashes between 2018 and 2022.

Distracted Driving Crashes

With the advent of smart devices, distracted driving has received an increased emphasis from transportation agencies across the United States. There were 1,506 distracted driving crashes in 2022 within the MPO boundary. Distraction is not just limited to drivers, but also affects users of other transportation modes. Due to the variety of distractions affecting motorists, the true impact of distraction in crashes is generally considered as underreported since pre-crash distractions often leave no evidence to observe. This is compounded by the fact that drivers are typically reluctant to admit distraction as a cause for a crash.

Pedestrian and Bicycle Crashes

On average, 164 bicycle crashes and 201 pedestrian crashes occur in the MPO region each year. Of this, an average of 16 bicycle crashes and 45 pedestrian crashes results in a fatality or serious injury. While pedestrian and bicycle crashes account for a small portion of all crashes in the region at just 2%, vulnerable road users like pedestrians and cyclists are significantly more likely to suffer injuries or death as a result of a crash with a vehicle. Therefore, in locations where bicycle and pedestrian crashes occur, safety interventions should be investigated.

Intersection and Corridor Crashes

In the GVMC region there were 7,944 intersection crashes in 2022, representing 35.64% of all reported crashes. In 2022, these intersection crashes within the GVMC region resulted in 43.33% of all roadway fatalities and 43.41% of all roadway serious injuries. To determine corridor needs, GVMC employed a ranking process similar to the one used for intersections. Region-wide crash data from Roadsoft (software developed and maintained by Michigan Technological University) for the years 2018-2022 were obtained and used for the analysis.

Impaired Driver Crashes

On average, drunk driving accounts for 21.62% of all crashes causing serious injury or fatality in the GVMC region though it only accounts for an average of 3.88% of total crashes. Drug involved crashes account for an average of 9.52% of all crashes causing serious injury or fatality in the GVMC region though it only accounts for an average of 0.89% of total crashes. Drug involved crashes are harder to track due to the lack of tools for enforcement, and therefore often considered underreported.

Wrong-Way Crashes

According to Michigan State Police data, the number of wrong-way traffic crashes in Michigan hit a five-year high in 2021, with 421 reported. Wrong-way driving was discussed by the Safety Committee as a growing concern for the region, especially on highways.

Need 2: Increase Safety Education

The GVMC Safety Education and Outreach program aims to educate all users of our transportation system, including pedestrians, bicyclists, and motorists, about ways to stay safe and visible while on the road. Increasing safety education was identified as a need by the Safety Committee, especially with regard to informing the public on the rights and responsibilities assigned to each mode of transportation, appropriate use of facilities, and emerging technology.

Need 3: Increase Regional Coordination

Increased collaboration amongst MPO members to facilitate a more consistent user experience across jurisdictions was a

need identified by the Safety Committee. A unified and normalized approach to issues such as infrastructure design and rules and regulations would contribute to a safer and consistent transportation system throughout the region.

Need 4: Understand, Identify, and Leverage Data

Identifying and leveraging additional data sources to improve traffic safety was identified as a need by the Safety Committee. Collaborating and sharing data sources across jurisdictions within the MPO was also suggested as a need by the committee. FHWA states in its Planning Emphasis Areas (PEA) for use in the development of Metropolitan and Statewide Planning and Research Work Programs: To address the emerging topic areas of data sharing, needs, and analytics, FHWA Division and FTA regional offices should encourage State DOTs, MPOs, and providers of public transportation to incorporate data sharing and consideration into the transportation planning process, because data assets have value across multiple programs. Data sharing principles and data management can be used for a variety of issues, such as freight, bike and pedestrian planning, equity analyses, managing curb space, performance management, travel time reliability, connected and autonomous vehicles, mobility services, and safety. Developing and advancing data sharing principles allows for efficient use of resources and improved policy and decision making at the State, MPO, regional, and local levels for all parties. (www.transit.dot.gov/regulations-and-programs/transportation-planning/2021-planning-emphasis-areas)

Need 5: Safety Action Plan

GVMC was approved for a federal Safe Streets and Roads for All Grant and will be developing a regional Safety Action Plan which will cover all GVMC jurisdictions. At the end of the process, there will be a list of safety projects and strategies, and each community can then apply for implementation funds for those projects. At the time of the writing of this document, work on the Safety Action Plan is underway.

Need 6: Additional Funding

Extensive additional funding is needed to address safety needs in the future, but the exact amount is yet to be determined. As an MPO, GVMC does not have a separate allocation of safety-specific funding that we control for our region. It is programmed through the local safety program run by MDOT.

Proposed Solutions:

1. Maintain and expand the GVMC's current efforts in public education campaigns

Public education campaigns have been actively conducted by GVMC staff at various events over the years. These initiatives have consistently distributed thousands of safety items annually, including bike lights, reflective belts, reflective snap bracelets, and more, with the overarching goal of reducing traffic crashes and enhancing road safety. In particular, these campaigns have engaged the community at local events to educate residents on safe road practices and provide them with essential safety equipment. Furthermore, GVMC has been integrating media components such as Public Service Announcements (PSAs) on cable, streaming platforms, Spotify and YouTube, to advocate for traffic safety.

These public education campaigns have become a cornerstone of GVMC's road safety strategy, ensuring that residents are well-informed and equipped with safety tools. By collaborating with community partners and leveraging our existing successful campaigns, GVMC will continue to raise awareness, promote responsible road behavior, and reduce traffic crashes in the region. These efforts are vital to creating safer roadways for all residents.

2. Continue employing low- cost traffic crash interventions to improve traffic safety

Research indicates that low-cost safety improvements such as improved sight distance, channelization, signage, rapid flashing beacons for pedestrian crossings, and other infrastructure treatments can produce positive results. While these infrastructure improvements can improve safety, it is often the behavior of the road user that can cause a crash, e.g., speeding, red light and stop sign running, failure to use a pedestrian crosswalk, etc.

3. Work with safety partners to conduct more safety studies

In the past, GVMC and its member communities have partnered with Wayne State University, AAA, and the Michigan OHSP to complete intersection safety studies. Many of the suggested solutions identified during these efforts were low-cost solutions that have been implemented by local jurisdictions using local funding sources. Higher cost improvements have either been put on hold as they wait for available funding or have been completed on a minimal basis using competitive statewide STP safety funding administered through MDOT.

To proactively address intersection issues going forward, GVMC could work with safety partners as was done in the past to determine intersections that require additional attention. Under this scenario, a focused intersection safety study could be undertaken periodically that would identify a small number (six to eight) intersections that exhibited characteristics that warranted safety related improvements. Additionally, funding could be dedicated to implementing solutions to address issues identified in the study process.

4. Work with safety partners on the Safety Action Plan to identify safety projects and apply for implementation funds for the projects in the GVMC region

GVMC has received a federal Safe Streets and Roads for All (SS4A) grant to develop a regional Safety Action Plan for our planning area. This plan aims to identify regional safety projects and strategies that will make significant strides toward achieving the goal of zero traffic-related fatalities and severe injuries in the GVMC region. It may also help secure additional funding for the implementation of the identified projects, further enhancing traffic safety in the region.

5. Adopt the safe system approach

According to FHWA, Safe System approach was founded on the principles that humans make mistakes and that human bodies have tolerance to crash impacts. A Safe System approach includes six principles: deaths and serious injuries are unacceptable, humans make mistakes, humans are vulnerable, responsibility is shared, safety is proactive, and redundancy is crucial. Achieving the goal of zero death requires the adoption of a Safe System approach. In a Safe System, human mistakes should never result in fatalities. Implementing this approach involves anticipating human mistakes by designing and managing road infrastructure to minimize the risk of mistakes. Additionally, when a mistake leads to a crash, the impact on the human body should not result in a fatality or serious injury.

Challenges

Funding and Cost for Safety Improvement

The challenges for traffic safety improvement primarily arise from insufficient funding and the costs associated with implementing safety measures. A major obstacle is the predominant allocation of transportation funding toward pavement maintenance, leaving limited resources for comprehensive safety initiatives. The prioritization of pavement maintenance, while crucial for infrastructure longevity and financial constrained, often results in inadequate funds for the implementation of safety measures, such as upgrading intersections, installing traffic signals or roundabouts, or enhancing pedestrian and bicyclist infrastructure. The high costs associated with necessary infrastructure upgrades further exacerbate the challenge. Consequently, addressing traffic safety improvement is constrained by limited funds and the imperative to allocate resources between maintenance and safety enhancement initiatives.

Predicting Need in the Long Term

For safety, need is difficult to determine long term. Advancements in technology, vehicle improvements, aging populations, and shifts in travel patterns and modes all contribute to changes in the needs of the transportation system.

Addressing Causes of Traffic Crashes Outside of Roadway Design

A significant percentage of crashes can be contributed to, or at least partly, to human error, which is difficult to control. Encouraging area drivers to change unsafe behaviors, such as texting while driving, can be challenging. Also, aside from rear-end crashes, most crash types that occur in the region—fixed object, sideswipe, and head on—typically have causes not based in roadway geometry.

Also, weather in West Michigan can be wildly unpredictable, and our area receives, on average, 76" of snowfall per year. Driving in icy and snowy conditions can increase the likelihood of a crash, even on well-designed roads. In order to combat this, emphasizing early and frequent treatment of snow-covered or slippery roadways, through salting, snowplowing, etc., as well as promoting messages about driving for conditions, such as "ice and snow, take it slow," may be necessary.

Emerging Issues

Legalization of Cannabis

In November of 2018, Michigan became the second most populous state in the country and first state in the Midwest to legalize adult recreational use of cannabis with the passage of Proposal 1. The impact of the legalization of cannabis on crash rates in the GVMC area is being monitored.

Toward Zero Deaths Strategy

GVMC, in coordination with MDOT, supports Toward Zero Deaths, the national traffic safety vision. According to the Toward Zero Deaths website, this is the only acceptable target for our nation, our families and us as individuals, as even one death is unacceptable.

Grass Roots Efforts

One localized grassroots effort, Riding for Ryan, honors the memory of six-year-old Ryan, who was struck and killed while on a bike ride with his father in June of 2019 in Cascade Township, by giving out free bright yellow flags for young children to attach to their bicycles to increase their visibility. It is hoped that increased emphasis on visibility for young bicyclists will increase awareness and reduce the likelihood of such tragedies in the future. GVMC has partnered with Riding for Ryan at events, and we have donated nonmotorized safety items to the organization, as well as to other local businesses and partners, for distribution.

Teens can also join their local Students against Destructive Decisions (SADD) chapter to help spread the word about distracted driving.

Accomplishments

The list below includes noteworthy accomplishments in improving safety within GVMC's region. Please note that this list is not all-inclusive. Most of the accomplishments were made through collaboration, cooperation, and partnerships between MDOT, local road agencies and jurisdictions, and area businesses:

- Upgrades to traffic safety equipment, including pedestrian hybrid beacons, at the following intersections:
 - Fuller Avenue at Malta, Short, Bradford, and Sweet Street
- Annual repainting of all trunkline pavement markings within the MDOT-Grand Region, which includes all the GVMC Metropolitan Planning Area.
- Modernization and optimization of traffic signals at various locations in the City of Grand Rapids.
- Added dual lefts from eastbound 3 Mile Road to northbound Walker Avenue.
- Added center turn lane on 32nd Street from Breton Avenue to Shaffer Avenue.
- Added sidewalk on 4 Mile Road from Yorkland Drive to West River Drive.
- Constructed passing relief lanes from Farland Avenue to Ramsdell Drive along M-57.

- Installed traffic signal dilemma zone systems at 10 intersections on M-44.
- Installed queue management system on US-131.
- Freeway signing upgrade on I-96 and US-131.
- Shoulder paving with shoulder rumble strips on M-57 from Northland Drive to Farland Avenue.

To reduce wrong-way crashes, MDOT has implemented the following measures over the past several years:

- Added Wrong-Way detection systems at the northbound US-131 off ramp to Cherry Street and the northbound US-131 off ramp (Hynes Avenue) to Hall Street to warn wrong-way drivers.
- Wrong-Way detection systems will be added at interchange off ramps along US-131 between Ann Street and M-11 (28th Street).
- Added reflective strips to "Do Not Enter" and "Wrong Way" signposts.
- Added "backside" red reflective strips along the length of the off ramps.
- Added stop bars and turn arrows at the ramp approaches, in addition to wrong way arrows placed further back.
- Added turning guideline markings at ramps where the on and off ramps are adjacent to each other.
- Painted curbed islands at ramp terminals.
- Lowered "Do Not Enter" signs to improve headlight angles.

Supporting Documents

- [GVMC Traffic Safety Plan](#)
- [West Michigan Traffic Safety Plan](#)

Supporting MTP Goals and Objectives

Please see the matrix included in Appendix E.