

The background of the slide is a dark blue color with a light blue, semi-transparent map of a city street grid overlaid on it. The grid consists of numerous intersecting lines representing streets, creating a complex pattern of rectangles and polygons.

***EVALUATING FUNDING FOR
PUBLIC TRANSIT
TO ADVANCE MICHIGAN'S
CLIMATE GOALS***

**UNIVERSITY OF MICHIGAN
TAUBMAN COLLEGE OF
ARCHITECTURE & URBAN PLANNING**

MAY 2022

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EVALUATING FUNDING FOR PUBLIC TRANSIT TO ADVANCE MICHIGAN'S CLIMATE GOALS

REPORT AUTHORS

Shanea Condon
Andrew Darvin
Paul Jones III

Catherine Kemp
Camilla Lizundia
Christopher Moon-Miklaucic

Simon Rivers
Sydney Weisman
Arin Yu

FACULTY ADVISORS

Joe Grengs Eric Bettis

**UNIVERSITY OF MICHIGAN
TAUBMAN COLLEGE OF ARCHITECTURE & URBAN PLANNING
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Jim Ashman | Michigan Department of Transportation (MDOT)

John Egelhaaf | Southwest Michigan Planning Commission (SWMPC)

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Kim Gallagher | Southwest Michigan Planning Commission (SWMPC)

Ryan Buck | Washtenaw Area Transportation Study (WATS)

Sam Krassenstein | City of Detroit

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ABBREVIATIONS

AAATA	Ann Arbor Area Transportation Authority
BIL	Bipartisan Infrastructure Law
CMAQ	Congestion Mitigation and Air Quality Improvement
CTF	Comprehensive Transportation Fund
DDOT	Detroit Department of Transportation
FAC	Federal Aid Committees
FAST Act	Fixing American's Surface Transportation Act
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	Greenhouse gas
IJA	Infrastructure Investment and Jobs Act
MAP-21	Moving Ahead for Progress in the 21st Century Act
MDOT	Michigan Department of Transportation
MPO	Metropolitan Planning Organization
MTF	Michigan Transportation Fund
OPT	Office of Passenger Transportation
SEMCOG	Southeast Michigan Council of Governments
STBG	Surface Transportation Block Grants
STIP	State Transportation Improvement Program
TIP	Transportation Improvement Program
TRU	Transportation Riders United

SUMMARY

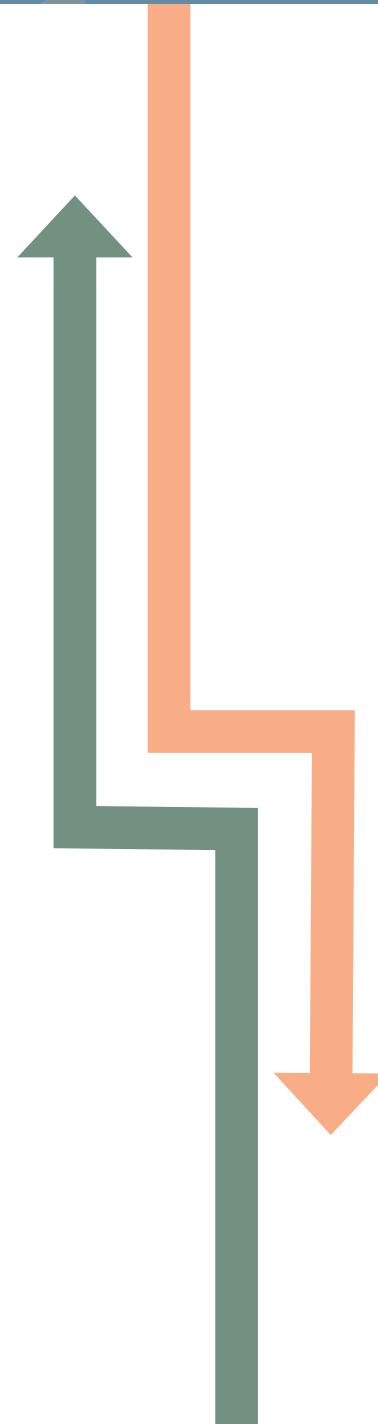
Michigan is committed to addressing climate change throughout the state. The MI Healthy Climate Plan lays out a broad vision for fulfilling Governor Gretchen Whitmer's pledge to achieve carbon neutrality by 2050. However, this plan and others – such as the Michigan Department of Transportation's (MDOT) long-range plan Michigan Mobility 2045 – fail to recognize that strong public transit systems are essential for addressing climate change. Transportation Riders United (TRU), a nonprofit organization that advocates for public transit in the Detroit region, understands that Michigan must reduce its heavy reliance on driving because single-occupancy vehicles are a leading source of greenhouse gas emissions. TRU can help shape how Michigan addresses climate change by encouraging state and local agencies to improve public transit so that Michiganders have a viable option to shift away from single-occupancy vehicles. This report provides actionable guidance to help TRU promote state-level actions to increase state funding to expand public transit as a means of advancing climate change commitments.

The report identifies several key findings based on comprehensive reviews of legislative and administrative documents, analysis of financial and performance data, interviews with 16 stakeholders representing Michigan's transportation sector, and in-depth comparative case studies of four peer states:

- Michigan has atypical legal and constitutional restrictions that hold back state-level support for public transit
- Michigan's transit agencies depend more heavily on state-level funding than many other states
- A series of legislative earmarks have consistently eroded the share of state funds allocated to transit in Michigan
- Recent legislation has boosted support for road projects by counteracting the diminishing purchasing power of the motor fuel tax, but has not provided similar support for public transit
- Michigan has not taken advantage of securing federal funding for transit to the degree of other states, in part because it has not addressed a lack of coordination and capacity at local levels of government
- Michigan lags behind peer states in generating revenues for public transit in creative ways
- Peer states demonstrate effective approaches to invest in public transit as part of a strategy to mitigate climate change
- Peer states show a higher level of transparency than Michigan in making data, information, and performance metrics available to the public and elected officials

Based on these findings, the report outlines several recommendations regarding key state-level legislative and administrative levers upon which TRU and other advocates can focus efforts to drive meaningful change around public transit. Overall, TRU can establish and continue sharing the organization's vision for transit in Michigan through a specific list of priorities:

- The Michigan Legislature should guarantee recurring funding sources for transit agencies that are protected from reappropriations even in the face of other budget needs
- MDOT should continue conducting studies to explore alternatives to the motor fuel tax as vehicles become more fuel-efficient
- MDOT should increase transparency by encouraging and incentivizing local transit agencies to measure rider-oriented transit performance metrics
- MDOT's Office of Passenger Transportation should work closely with the Michigan Department of Environment, Great Lakes, and Energy's Office of Climate and Energy to emphasize public transit as a strategy to reduce carbon emissions
- MDOT should measure vehicle miles traveled and greenhouse gas emissions associated with new projects to demonstrate the benefits of transit and potentially reduce car dependency
- MDOT should create and fund an initiative within the Office of Passenger Transportation to help resource- and capacity-strapped transit agencies and metropolitan planning organizations access available federal funding





**OPEN
DETROIT**
PARK, WALK,
BIKE, DINE!
STREET CLOSED
TO VEHICLES

**NO
STANDING**

**WALK
ONLY
NES**



INTRODUCTION

Transportation Riders United (TRU) is a nonprofit organization that advocates for better public transit in the Detroit metropolitan region. Recognizing that single-occupancy vehicles are a leading source of greenhouse gas (GHG) emissions, TRU supports strengthening public transit as an important step for addressing climate change in Michigan. Leveraging funding to improve the quality of transit service can promote a mode shift away from single-occupancy vehicles and reduce greenhouse gas emissions in Michigan, all while providing frequent users with more reliable service.

THE IMPORTANCE OF STRENGTHENING PUBLIC TRANSIT AS A STRATEGY FOR ADDRESSING CLIMATE CHANGE

For many, public transit is an indispensable component of transportation systems in cities across Michigan and around the country. It serves to connect people to jobs, grocery stores, healthcare appointments, and other destinations and services essential to daily life. As a result, an underfunded public transit system means that the residents who need to use it struggle to complete day-to-day tasks. In regions like metropolitan Detroit, the current state of public transit highlights the stark racial and economic inequalities inherent to the ways transportation systems are often structured. As of 2018, 86 percent of Detroit Department of Transportation (DDOT) bus riders were Black, while nearly 80 percent of riders earned less than \$25,000 in income per year¹ – less than half of the 2018 median household income in Michigan of \$58,000.² Public transit in Detroit, like elsewhere, provides access to essential services for an overwhelmingly marginalized and vulnerable group of people. What's more, in 2018 the transportation sector accounted for 28 percent of Michigan's overall GHG emissions, and transportation is consistently ranked among the state's leading

sources of emissions.³ Unfortunately, the same groups that are most negatively impacted by unreliable and infrequent public transit systems are also those that will suffer disproportionately from the climate crisis especially in terms of worsening air quality from an over-reliance on single-occupancy vehicles.⁴

Improving public transit is increasingly being recognized as a potential strategy to address climate change and its associated inequities. The latest Intergovernmental Panel on Climate Change (IPCC) report explores the steps necessary to cut emissions in half by 2030 and reach net zero by 2050, two milestones required to reduce the impact of the climate crisis by meeting the international goal of limiting warming to 1.5°C above pre-industrial levels.⁵ The IPCC report includes a chapter on climate mitigation strategies, citing “electrification combined with low GHG energy, and shifts to public transport” as key ways to “enhance health, employment, and [...] deliver equity.”⁶ Similarly, along with transitioning to fuels that emit less CO² and electrifying vehicles and buses, the Environmental Protection Agency (EPA) recommends “employing urban planning to reduce the number of miles that people drive each day” to reduce emissions from the transportation sector.⁷ Expanding and improving public transit is one of the most effective ways to encourage mode shifts away from single-occupancy vehicle usage and, as a result, limit emissions in the long-run. The State of Michigan has ambitious goals to reduce GHG emissions across the state's economy by 28 percent by 2025 and achieve carbon neutrality by 2050.⁸ Based on the recommendations above, greater investment in public transit will likely be necessary to meet these goals. However, this will be especially difficult considering Detroit ranks last among the 20 largest urbanized areas in the amount of operating expenses per person, providing only about \$63 per person compared to an average of \$253 per person among the other 19 largest urbanized areas in 2018.⁹ Issues of climate and equity are inextricably linked and meaningful investments in improving public transit systems have the ability to address both concerns in Michigan.



This research, conducted by a team of graduate students from the University of Michigan's Taubman College of Architecture and Urban Planning, assesses the availability of funding opportunities to meet TRU's – and the State of Michigan's – objectives related to climate change mitigation and public transit improvements. The report provides an in-depth analysis of state and federal transportation funding practices, unpacks some of the state's planning and implementation processes, and explores how peer

states have improved their public transit systems to meet climate goals. Ultimately, this report provides guidance and actionable steps to promote state-level decisions and use of transportation funding to expand public transit services as a means of addressing climate change.

RESEARCH APPROACH

Our research approach for this report involved reviewing documents, analyzing data, and interviewing key stakeholders. By analyzing a diverse set of publications, research reports, and formal plans from federal, state, and local governments, academia, and civil society, our team was able to identify the main barriers to and opportunities for increasing funding for public transit in the State of Michigan. We identified peer states for analysis based on broad similarities to Michigan in terms of size, climate, topography, political orientation, urban-rural split, and historical trends in autocentric planning. To complement and validate our secondary research, we conducted 12 interviews with 16 experts and practitioners widely representing the State of Michigan's transportation sector (see Appendix G for details):

- **City of Detroit** - Complete Streets & Infrastructure Planning divisions
- **Federal Highway Administration (FHWA)**
- **Michigan Department of Transportation (MDOT)** - Office of Passenger Transportation and Bureau of Transportation Planning
- **Michigan House Fiscal Agency**
- **Michigan Public Transit Association (MPTA)**
- **Midwest Strategy Group**
- **Quandel Consultants**
- **Southeast Michigan Council of Governments (SEMCOG)**
- **Southwest Michigan Planning Commission (SWMPC)**
- **Washtenaw Area Transportation Study (WATS)**
- **Western-Washtenaw Area Value Express (WAVE)**
- **WSP USA**

Based on our research, and considering the current gubernatorial administration's commitment to carbon neutrality by 2050, the State of Michigan is orienting itself to reduce GHG emissions by expanding more environmentally sustainable modes of transportation. Currently, the Michigan Constitution and legislation restrict funding for public transit, prioritizing roads and auto-oriented development. Opportunities to direct more funding to public transit in Michigan include enacting legislative change to maximize funding for transit, taking full advantage of the available federal grants and programs, identifying new revenue sources, and enhancing project prioritization at the local level. Expanding financial support for public transit at the state level will strengthen Michigan's overall transportation system while advancing action on statewide climate goals and reducing widespread inequities.



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2

***MICHIGAN'S PUBLIC
TRANSIT IN CONTEXT***

HISTORY OF AUTO-CENTRIC DEVELOPMENT IN MICHIGAN

Michigan's transportation landscape has been dominated by cars for decades. Since taking its place as the international hub of auto manufacturing in the early 20th century, the state has prioritized federal and state transportation dollars for highway planning, maintenance, and expansion while limiting the potential for localities to access funding for public transit. In 2017, Michigan spent \$4.2 billion on highway expenditures while transit expenditures were \$710 million.¹⁰ Michigan residents drive cars more than people in other states: 82 percent of personal trips in Michigan were made by people driving alone, compared to 73 percent nationwide in 2018.¹¹ Illustratively, Detroit is an unusually automobile-dependent region, especially when compared to other regions. Among the 15 most populous urbanized areas nationwide in 2018 (prior to the global pandemic), Detroit ranked third for the highest vehicle-miles-traveled per capita, with only Houston and Dallas showing higher rates of daily driving.¹²

Figure 1 shows trends in automobile driving and transit ridership in Michigan. It shows that even though the number of licensed drivers has remained fairly constant, the amount of driving in the state (measured by vehicle miles traveled) has been rising, amounting to an increase of 5 percent between 2010 and 2019. By contrast, transit ridership across the state has dropped by more than 10 percent during the same period. Transit ridership increased briefly following a national economic recession but it has declined substantially since 2013 throughout the state. Michiganders are driving cars at a growing rate while riding transit less frequently.

Driving has become the easiest, fastest, and most practical form of transportation by design. This approach has been codified in state legislation that determines how Michigan spends transportation dollars. Because most Michiganders drive and are unfamiliar with

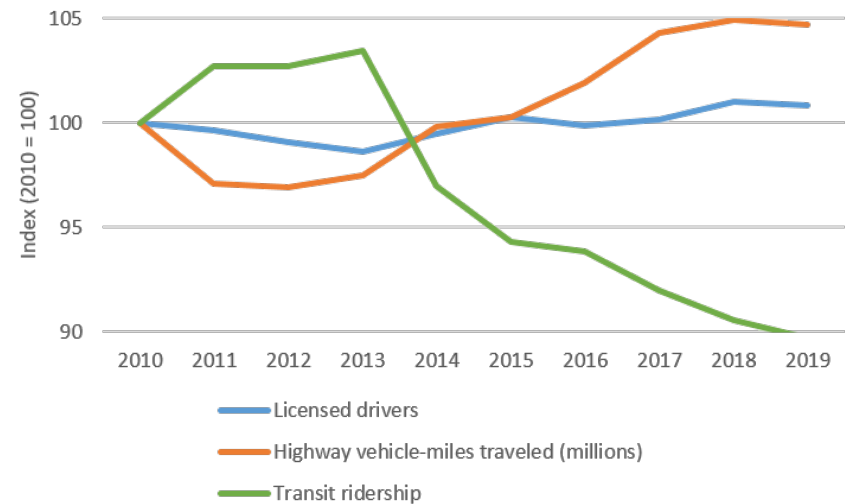


Figure 1. Trends in Driving and Transit Use, Michigan, 2010 – 2019. Data from U.S. Department of Transportation, Bureau of Transportation Statistics, State Transportation Statistics.

public transit or how it could work in their communities, public and political sentiment is not focused on investing in the state's transit agencies. Many view public transit as a social welfare program aimed at providing limited mobility for those with no other options.¹³ This has implications for the condition of public transit, roads, and the state's fiscal future. Advocates struggle to make the case for public transit while more public dollars are spent on a car-oriented transportation network that has grown too expensive to maintain. The fragmented nature of local governance and long-standing political disputes between key players have also complicated and stalled efforts statewide to establish stronger funding for public transit and produce a working and balanced transportation network valued by the public and private industry. This is underscored in the metropolitan Detroit area by the ability for individual municipalities to opt out of coverage and raising taxes for the Suburban Mobility Authority for Regional Transit (SMART). As recently as February 2022, for example, Auburn Hills officials moved to take the city out of the regional transportation system.¹⁴ Legislative shortcomings continue to leave opportunities for gaps and threaten the ability to provide reliable service.

The decentralization of the state's largest urban areas like Detroit and Flint in favor of low-density suburban development at the suburban fringe has fueled road and highway construction.¹⁵ Cities in Michigan are consuming land at rates that far exceed population growth: from 1990-2000, developed land increased in Southeast Michigan alone by 17 percent, compared to only 5 percent growth in population.¹⁶ This type of growth contributes to highway expansions and road widening projects that can undermine the effectiveness of transit. Development characterized by disconnected street networks, large amounts of underutilized space, and hostile walking conditions make it increasingly difficult for Michiganders to perceive public transit as a viable alternative to their cars.¹⁷ In addition to low-density sprawl, the vacancies of housing and land in disinvested city centers have undermined the tax bases of Michigan's largest cities and the type of service transit agencies are able to provide.¹⁸

Public transit agencies across the state are strapped for cash and find it challenging to complete the type of long-range, comprehensive planning needed to develop adequate systems. There are 82 public transit agencies in Michigan that provided 51.5 million trips statewide in fiscal year 2020.¹⁹ The challenge and rising costs of maintaining the state's transportation network continue to reveal inadequacies in the state's transportation funding mechanisms and missed opportunities to maximize existing funding for investment in public transit. This is the case in the Detroit region, which has long underserved and underfunded public transit. Among the 20 largest urbanized areas by population in 2018 (prior to the pandemic, and excluding New York because it is a severe outlier), Detroit ranked last in service provided per capita (measured in vehicle revenue miles), and by a wide margin. Transit service provision in Detroit was 26 percent lower than its next closest competitor, Tampa-St. Petersburg, ranked at number 19 out of 20. Furthermore, in terms of funding, Detroit ranks last among the top 20 urbanized areas in the amount of operating expenses per person, providing only about \$63 per person compared to an average of \$253 per person among the other 19 largest urbanized areas in 2018.²⁰ Figure 2 demonstrates this disparity in transit spending by comparing the Detroit region to other regions.

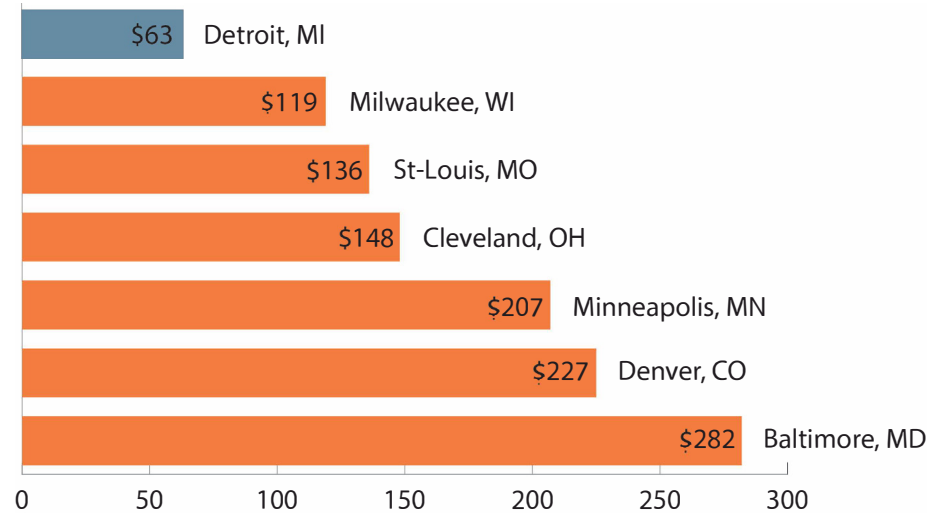
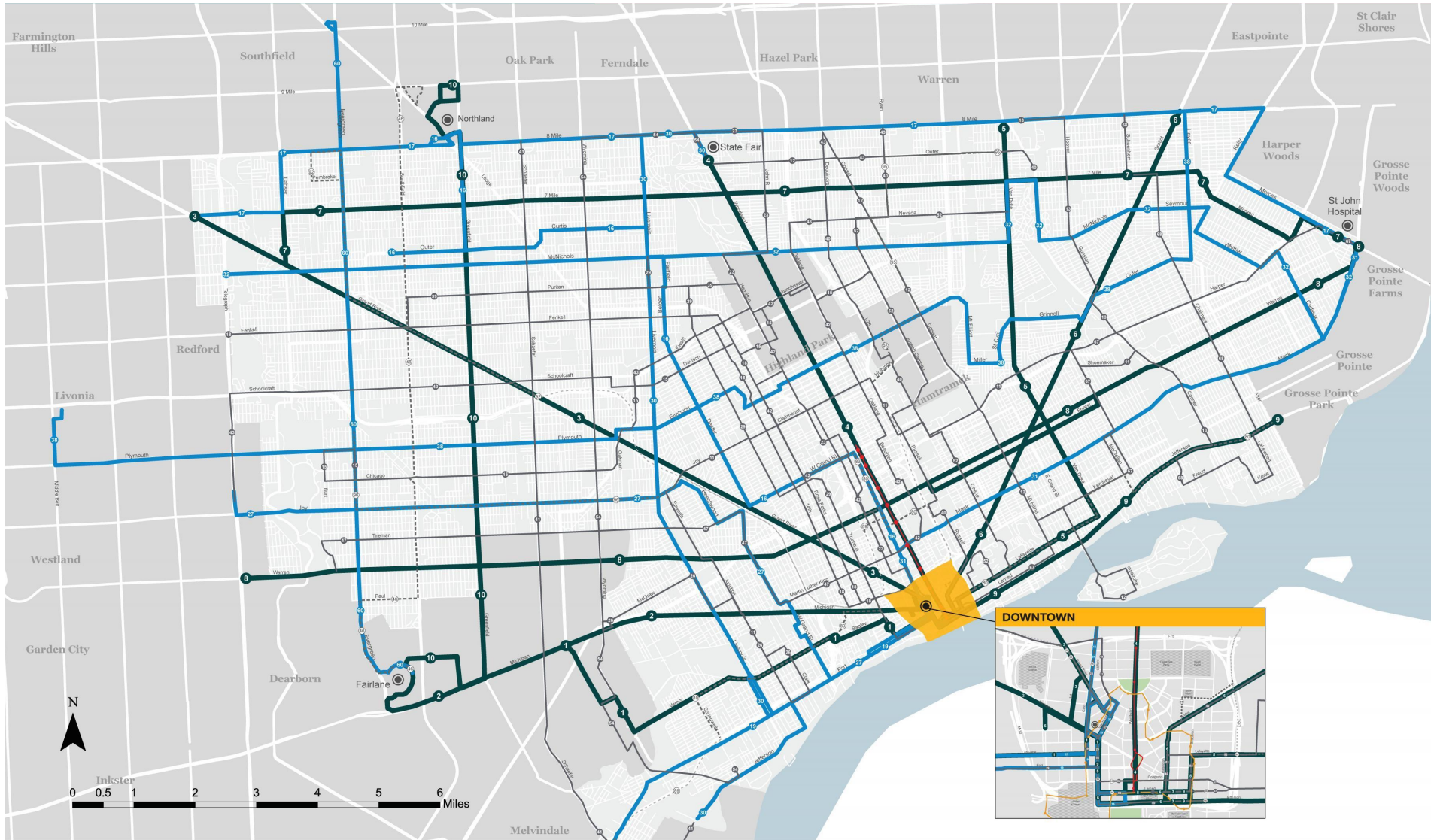


Figure 2. Transit Operating Expenses Per Person by Urbanized Area, 2018. Data from 2018 Annual Database UZA Sums, <https://www.transit.dot.gov/ntd/data-product/2018-annual-database-uza-sums>.

PUBLIC TRANSIT SERVICE AND RIDERS IN MICHIGAN

To understand the current status of Michigan's public transit system, it is crucial to assess a series of transit statistics. This section describes the most relevant data pertaining to public transit use and accessibility in the State of Michigan. Michigan data is compared to data from peer states as well as national averages to explore how Michigan compares to other states. These data provide context for the research and evaluation of public transit needs in Michigan. Data on commute mode shares from the American Community



- ConnectTen Routes**
- ConnectTen Routes are the backbone of the transit system. All ConnectTen Routes are:
 + 24/7
 + 20 minutes or better weekday frequency
 + Every 20-30 minutes at other times.
- 1 Vernor*
 - 2 Michigan*
 - 3 Grand River*
 - 4 Woodward*
 - 5 Van Dyke-Lafayette*
 - 6 Gratiot*
 - 7 Seven Mile*
 - 8 Crosstown*
 - 9 Jefferson*
 - 10 Greenfield*
- * Denotes 24/7 route.

- Key Routes**
- Cross-city routes operating 18-24 hours a day, with frequency every 15-30 minutes.
- 11 Dexter*
 - 12 Eight Mile*
 - 13 Fort
 - 14 Joy
 - 15 Livernois
 - 16 Mack
 - 17 McNichols
 - 18 Plymouth
 - 19 Evergreen
- * Denotes 24/7 route.

- Neighborhood Routes**
- Shorter routes operating during day and early evening times, with frequency every 30-60 minutes.
- 11 Clairmont
 - 12 Conant
 - 13 Conner
 - 14 Chicago/Davison
 - 15 Fenkell
 - 23 Hamilton/John R
 - 24 Junction
 - 25 Linwood
 - 26 Puritan
 - 27 Russell
 - 41 Schaefer
 - 42 Mid-City Loop
 - 43 Schoolcraft
 - 44 Tireman
 - 52 Chene
 - 54 Wyoming
 - 57 Cadillac/Harper
 - 58 Chalmers

- Part-Time Routes**
- Limited service, generally operating during weekday peak hours.
- 46 Southfield
 - 80 Villages Direct
 - 88 Southwest Direct
 - 92 Rosedale Express
 - 95 Ryan Express
 - 96 Joy Express

- DDOT Routes**
- ConnectTen
 - Primary
 - Neighborhood
 - - - Peak Hour Route

- Transit In the City**
- Transit Hubs
 - People Mover
 - MI Rail
 - SMART Bus

Figure 3. DDOT and SMART System Map.
 Data from DetroitMap360, <https://detroitmap360.com/detroit-bus-map>.

Survey (ACS) provide essential insight into the modes of transportation that workers ages 16 and older rely on. Table 1 presents data as a one-year average between 2014 and 2018. Although more recent data is available, this period still provides recent data while minimizing any impacts of the COVID-19 pandemic on public transit usage. COVID-19 has impacted many transportation patterns as in-person work quickly shifted to remote work.

Table 1. Percentage of Trips to Work by Mode of Travel, by Selected States (one-year average over 2014-2018)

	U.S. (%)	Colorado (%)	Michigan (%)	Minnesota (%)	Pennsylvania (%)	Wisconsin (%)
Car, Truck, or Van (alone)	76.4	75.3	82.4	77.9	76.1	81.1
Car, Truck, or Van (carpool)	9.1	8.8	8.8	8.5	8.5	7.9
Public Transportation (excluding Taxi)	5.0	3.1	1.4	3.6	5.6	1.8
Walked	2.7	2.8	2.2	2.7	3.7	3.1
Bicycle	0.6	1.2	0.4	0.8	0.5	0.7
Taxi, Motorcycle, or Other	1.2	1.0	0.8	0.9	0.9	0.9
Work from Home	4.9	7.7	3.9	5.7	4.6	4.5

Source: ACS 5-year estimates, 2014-2018 (S0801: Commuting Characteristics by Sex)

Table 1 illustrates that residents of Michigan drive a lot and few use public transit. It shows that Michigan has the highest share of people driving to work, and the lowest share of people commuting by

transit when compared to four other peer states. Michigan's public transit mode share was 1.4 percent, less than the national average and all four peer states. Michigan also relies most heavily on cars, trucks, and vans as compared to peer states and the national average. Of the identified states and national averages, Michigan had the highest usage of personal vehicles driven alone.²¹ These characteristics display Michigan's reliance on personal vehicles, without the confounding effects of the COVID-19 pandemic.

It is also important to understand the change in public transit usage over time. The public transit mode share in Michigan has remained consistently low at 1.3 percent or 1.4 percent of work commuters ages 16 and older, according to ACS 5-year averages from 2010 to 2020.²² It is evident that there has not been a significant change in public transit ridership in recent years.

To contextualize the underfunding of public transit, it is crucial to take note of the populations that public transit serves. Onboard surveys conducted in July and August of 2018 provide key information regarding characteristics of Detroit transit riders.²³ As mentioned earlier, the survey found that people of color make up a disproportionately high share of transit riders in Detroit. As a result, ensuring that transit systems are functioning effectively is critical to supporting the needs of all communities.

KEY TRANSPORTATION STAKEHOLDERS & PLANNING PROCESSES

The Michigan Department of Transportation (MDOT) is the governmental agency responsible for the state's nearly 10,000-mile state highway system, and has jurisdiction over 120,000 miles of highways, roads, and streets.²⁴ As it relates to public transit, MDOT is in charge of administering state and federal transportation programs

for intercity passenger services, rail freight, and local public transit services through the Office of Passenger Transportation (OPT). In addition, MDOT produces a long-range transportation plan and a five-year transportation program for the state that include all modes of transportation (see Table 2). Although MDOT has historically and continues to be primarily highway-focused, OPT plays an important role in advancing public transit in the state. Reporting to the Chief Administration Officer, OPT's main responsibility is to disburse federal and state funds to transit agencies.

Table 2. Components of Transportation Planning in Michigan

Planning Component	Purpose	Timeframe	Relevant Agency
Metropolitan Planning Organization Transportation Improvement Program (TIP)	Lists funding sources for details about upcoming transportation projects within a metropolitan planning organization's jurisdictional boundaries	Developed every four years; overlapping year between each TIP that ensures continuous federal funding across the transition between TIPs (Ex: 2017-2020, 2020-2023)	Transit agencies, MPOs
State Transportation Improvement Program (STIP)	Consolidates TIP projects from MPOs	Developed every four years (Ex: 2017-2020, 2020-2023)	MDOT
Five-Year Transportation Program	Documents MDOT's planned investments for highways, bridges, public transit, rail, aviation, marine, and nonmotorized transportation	Developed every five years, annual rolling program for highway projects (Ex: 2018-2022, 2022-2026)	MDOT
Long-Range Transportation Plan	Establishes the vision, goals, and objectives for the transportation system. Serves as a foundation for the development of the TIP (Ex: SEMCOG Regional Transportation Plan, Michigan Mobility 2045)	Updated every five years (spanning twenty-year periods)	MPOs, MDOT
Transit Asset Management Plan	Tracks the asset conditions of rolling stock, equipment, and facilities for each transit agency	Developed every four years	Transit agencies, MPOs

While MDOT is the State's governing transportation body, Michigan's transportation landscape also consists of a wide array of local stakeholders. Michigan has 82 transit agencies throughout the state, 21 of which are located in urban areas.²⁵ In fact, public transit agencies provide service in every county of the state with some covering multiple regions. In addition to transit agencies, there are 13 Metropolitan Planning Organizations (MPOs) in Michigan: one for every Urbanized Area of the state as designated by the U.S. Census Bureau.²⁶ MPOs are responsible for coordinating local decision-making across a region of multiple jurisdictions, especially as it relates to transportation planning processes. For example, MPOs put together Transportation Improvement Programs (TIPs), which

determine the transportation projects that will be implemented and their designated funding sources for the next three years. TIPs are ultimately compiled and placed into the State Transportation Improvement Program (STIP) by MDOT.

Most MPOs have a board of directors consisting of elected officials and other representatives from each of the local governments within the MPO's designated area – an arrangement that can hinder a MPO's ability to promote alternatives to single-occupancy vehicles if elected officials in some parts of the region are less supportive.²⁷



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3

***CURRENT STATUS &
CONSTRAINTS ON FUNDING
PUBLIC TRANSIT IN MICHIGAN***

Understanding the rules governing public transit funding in Michigan is an important part of identifying viable solutions to address the shortcomings of existing transit systems. Transportation funding in the State of Michigan comes from both state and federal sources. At the state level, funds for transportation are governed by the Michigan Constitution and Public Act 51. The Constitution decrees that no less than 90 percent of the Michigan Transportation Fund (MTF) be used for roads, streets, and bridges, leaving a maximum of 10 percent for the Comprehensive Transportation Fund (CTF), which can be used for public transit programs, including capital and operating support for Michigan's public transit agencies.²⁸ However, because the CTF is not protected by the Michigan Constitution, an array of amendments over the years has taken money away from the CTF to meet other budget needs. As a result, the amount of MTF funding that goes to the CTF rarely reaches the 10 percent figure, deeply limiting the State's ability to make the necessary investments to improve public transit systems and increase its usage. More information about the MTF and CTF can be found on page 22.

MICHIGAN TRANSPORTATION FUND & COMPREHENSIVE TRANSPORTATION FUND



MTF

Michigan Transportation Fund

Transportation funds for roads,
bridges, and highways.



CTF

Comprehensive Transportation Fund

Transportation funds that
can be used for transit.

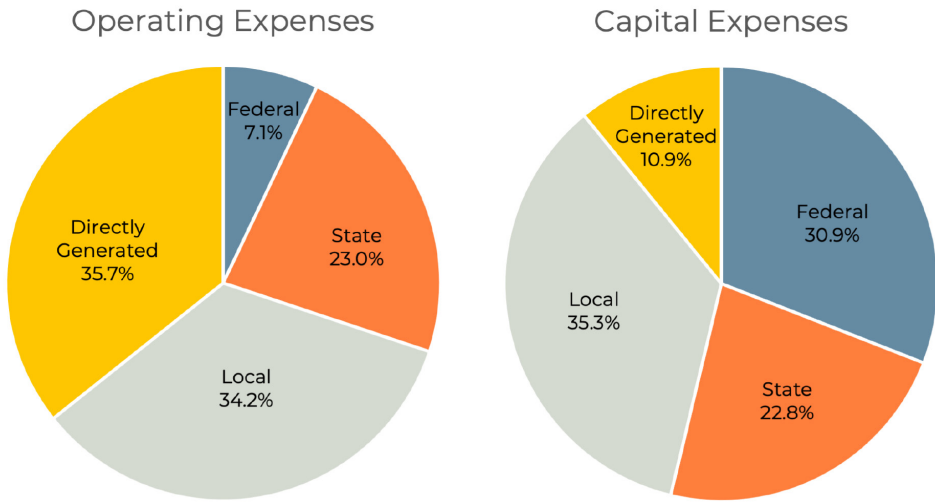


Figure 4. Sources of Operating and Capital Expenses, United States, 2019. Data from National Transit Database, National Transit Summaries and Trends. <https://www.transit.dot.gov/ntd/2019-national-transit-summaries-and-trends-ntst>

State funding typically provides a substantial share of the total funding that supports public transit, for both operating and capital expenses. Most transit agencies are supported by a mix of funding sources, including directly generated (revenues that an agency generates on its own, such as passenger fares), local (such as taxes in nearby cities and towns), state, and federal funds. Nationwide, as shown in Figure 4, the state portion of funding comprised about 23 percent of this mix for both operating and capital expenses in 2019. The state share of operating expenses has remained stable over time nationwide. For example, between 2000 and 2019, the average state share of operating expenses was 24 percent. By contrast, the state share of capital expenses has steadily grown over two decades in the United States. As shown in Figure 5, the federal share of capital expenses declined substantially between 2000 and 2019, while state and local shares increased over the period. The state share of total capital expenses increased between 2000 and 2019, from a low of 9.3 percent in 2001 to a high of 22.8 percent in 2019. State funding is an increasingly important dimension of capital expenses nationwide.

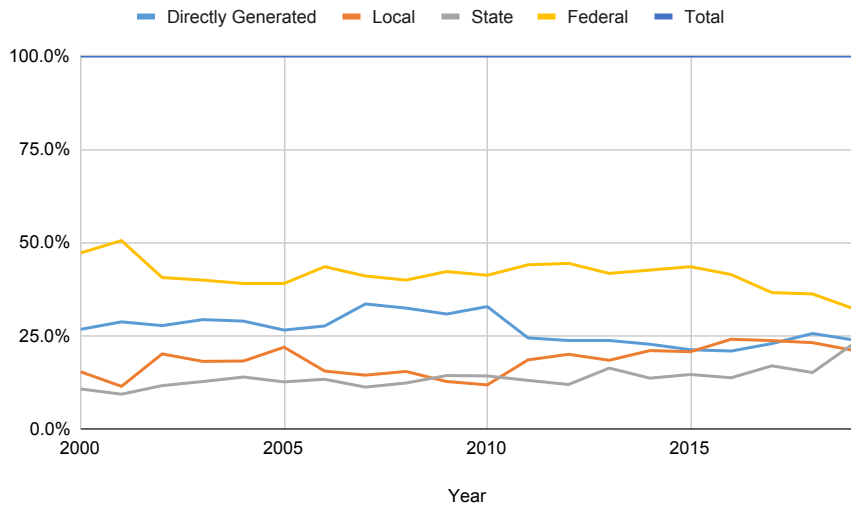


Figure 5. Percentage of Total Capital Expenses, United States, 2000 – 2019. Data from 2021 APTA Fact Book, Appendix A, Table 80.

Turning to a local context in Michigan, the state share of operating expenses is substantially higher than national averages. As shown in Table 3, both the Detroit Department of Transportation (DDOT) and the Suburban Mobility Authority for Regional Transportation (SMART) relied on state support at a higher share than recent national averages, at 30 percent and 28 percent respectively in 2020 (compared to a national average of 23 percent in 2019). State support for transit tends to be more important in Michigan than in other states.

Table 3. Sources of Operating and Capital Expenses, Detroit Department of Transportation and Suburban Mobility Authority for Regional Transportation, 2020

Funding Source	Operating		Capital	
	DDOT (%)	SMART (%)	DDOT (%)	SMART (%)
Directly Generated	11.9	7.8	0.0	0.0
Local	40.1	55.3	0.0	0.0
State	29.9	27.9	20.0	20.9
Federal	18.1	9.0	80.0	79.1
Total	100.0	100.0	100.0	100.0

Source: Data from Federal Transit Administration, National Transit Database, “NTD Transit Agency Profiles”, 2020.

At the federal level, the U.S. Department of Transportation (USDOT) administers a wide range of grants and programs through the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Some funding sources are allocated by federally mandated formulas, with MPOs and transit agencies overseeing most project selection. Other federal sources are discretionary grant programs to which state and local agencies must submit grant applications, with varying degrees of success. While the Michigan Department of Transportation (MDOT) supports local transit agencies by providing matching funds for federal awards and helping rural agencies access federal dollars, it largely defers to local agencies – including MPOs – on decisions about whether flexible federal highway funding should be used for transit. We provide further details on federal sources of funding in the next chapter.

In order to better understand the complexities of transportation funding in the State of Michigan, this chapter explores the State’s legal frameworks for transportation funding and provides an overview of the MTF and the CTF, illustrating the ways in which the CTF’s purchasing power has diminished over the years. Next, we

describe MDOT’s role in transit funding, especially as it relates to the matching funds process for federal grants and programs.

LEGAL FRAMEWORKS FOR TRANSPORTATION FUNDING IN MICHIGAN

LACK OF DEDICATED TRANSIT FUNDING

Public Act 51

Effective June 1, 1951, Public Act 51 (PA 51) governs State appropriations for Michigan’s transportation systems, including roads, bridges, and public transit.²⁹ While the Constitution of Michigan declares that no less than 90 percent of motor vehicle taxes be used exclusively for roads, streets, and bridges, there is no similar provision for the administration of public transit. As a result, transit funding in the State of Michigan is not considered “dedicated” because it is only set aside by statute as opposed to being decreed by the Michigan Constitution. PA 51 seeks to address the lack of dedicated funding by creating special revenue funds for transportation and directing how those funds are spent. Through distribution formulas, PA 51 prescribes fixed dollar amounts or percentage allocations between highway programs and public transit programs.

Michigan Transportation Fund (MTF)

PA 51 created the Michigan Transportation Fund (MTF), which operates as the collection and distribution fund for transportation revenues. The MTF is funded primarily by motor fuel taxes, individual income taxes, vehicle registration fees, and an excise tax on marijuana sales. MTF revenue generated an estimated \$3.5 billion for state transportation programs from 2021 to 2022.³⁰ The three primary recipients of the MTF each year are:

- 1 **The State Trunkline Fund (STF):** funds from this source are allocated toward highway construction, roads, and bridges;
- 2 **Local road agencies:** funds from this source are allocated toward local road and street programs; and
- 3 **The Comprehensive Transportation Fund (CTF):** funds from this source are allocated toward state and local public transit programs, including capital and operating assistance for all of Michigan's public transit agencies.

The Comprehensive Transportation Fund is most relevant to funding public transit, as it helps support bus and rail services across the state.

Comprehensive Transportation Fund (CTF)

The Comprehensive Transportation Fund (CTF) is a state restricted fund that can be used for public transit purposes. The revenue sources for the CTF consist of three funding streams: driver's license fees, 4.65 percent of auto-related sales taxes, and up to 10 percent of the Michigan Transportation Fund. Figure 6 illustrates the relationship between the MTF and the CTF, and Appendix A shows updated dollar flows for fiscal year 2020.

The CTF has historically been used for a range of different expenditure needs, including intercity bus systems, passenger rail systems, freight systems, and some targeted transit programs.³¹ In addition, the CTF can also be used to cover some of MDOT's administrative expenses. The largest share of the CTF, however, is used to cover capital and operational expenditures for all of the transit agencies across the state. Section 10e of PA 51 further articulates the CTF's funding priorities, which include:

- Up to 50 percent of **local bus operating expenses** for urban systems and up to 60 percent for non-urban systems;
- At least \$8 million to **local bus capital expenses**;
- At least 10 percent of CTF funding for **intercity passenger or freight**; and
- \$2 million for municipalities for a credit program to be used for **reducing operating deficits** of public transit services.

While bond payments, local bus and other new services, public transit development, and other public transit approved by the commission are listed as CTF funding priorities, there are no specified amounts allocated.

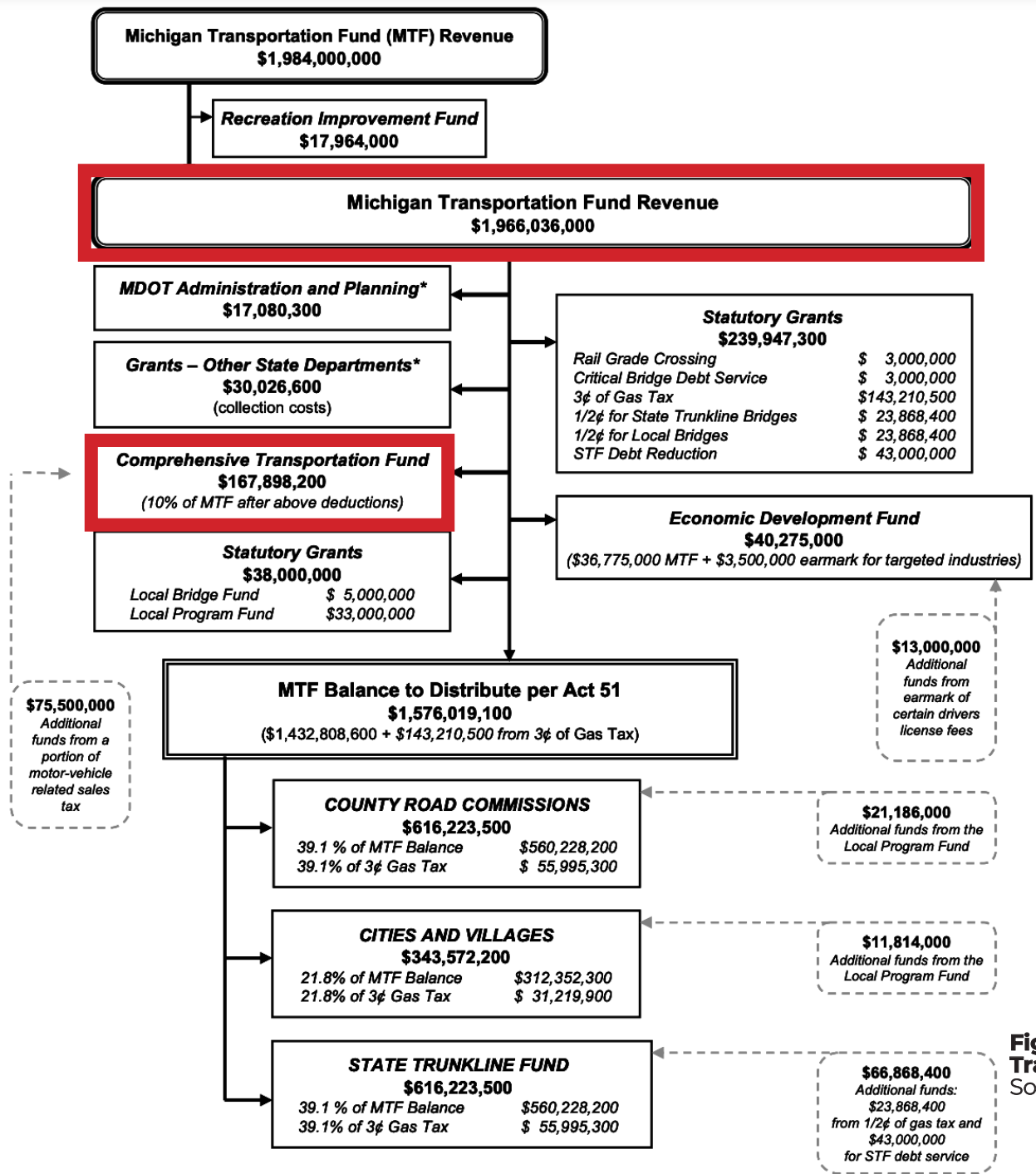
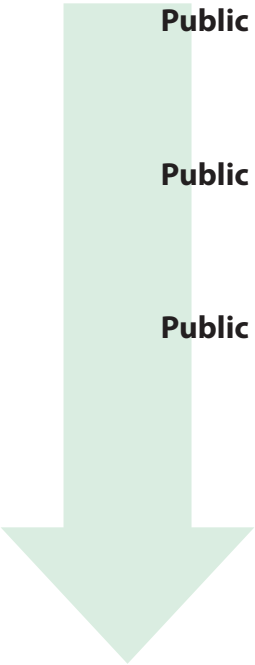


Figure 6. Structure of Michigan's Transportation Funding
Source: House Fiscal Agency, 2007

Statutory Deductions Reduce the Comprehensive Transportation Fund

Public Act 51 establishes the CTF and allocates 10 percent of the MTF to the CTF, but the 10 percent is calculated only after several statutory deductions. After the statutory deductions are subtracted, the CTF's effective share of the MTF tends to be consistently smaller than 10 percent. The 10 percent figure of the MTF that may go to the CTF consists of a portion of a variety of different taxes, which, alongside federal funding sources and state and local matching funds, can be spent on local operating expenses, capital expenses, and non-urban operating and capital expenses.

Since Public Act 51 was first introduced, a number of amendments have reduced the share that is transferred from the MTF to the CTF below the 10 percent cutoff that is allowed by PA 51:³²

- 
- Public Act 348 (1988)** established an MTF earmark of not more than \$3 million for the rail grade crossing account;
 - Public Act 223 (1992)** established an earmark of not less than \$3 million for the local and critical bridge fund debt service;
 - Public Act 79 (1997)** established an earmark of \$43 million for the State Trunkline Fund debt service; reallocated one cent of the gas tax for state bridge programs; reallocated revenue equal to three cents of the gas tax for distribution to state and local road agencies; and created a \$3.5 million earmark from the MTF to the Transportation Economic Development Fund (TEDF).

These earmarks deduct funds from the MTF prior to the allocation to the CTF. By bypassing the allocation to the CTF, these funds meet objectives that do not include public transit purposes. Deductions like these are controversial because they effectively reduce the amount of funds going to public transit below the 10 percent allocation allowed by PA 51. William Hamilton, Senior Fiscal Analyst for the Michigan House Fiscal Agency, explains this contentious issue: "Advocates for public transportation programs have argued that the CTF should receive 'the full 10 percent' of all money in the MTF, i.e., that the 10 percent transfer to the CTF be made prior to other statutory deductions from the MTF. This would result in an increase in CTF revenue of approximately \$31.5 million per year [2017], with a corresponding decrease in MTF revenue available for state and local road programs."³³

Figure 7 shows the share of the MTF transferred to the CTF for each year from 2002 to 2021. Over this period, the percentage of the MTF transferred to the CTF ranged from 7.3 to 8.9, with an average of 8.3 percent over the period. As described in more detail below, the growth shown after 2016 reflects a series of bills passed in late 2015 to increase funding for transportation in Michigan. However, while the total of the MTF has increased steadily over the past five years, the share transferred to the CTF has diminished from 8.8 percent to 7.3 percent in that time. While a drop from 8.8 to 7.3 percent may appear to be trivial, it represents a substantial loss of \$51.5 million that otherwise would have been available to public transit agencies in Michigan in fiscal year 2021 had the transfer been 8.8 rather than 7.3 percent that year. Had the maximum allowable 10 percent of the MTF been transferred to the CTF in fiscal year 2021, an additional \$93.2 million would have been available for public transit.

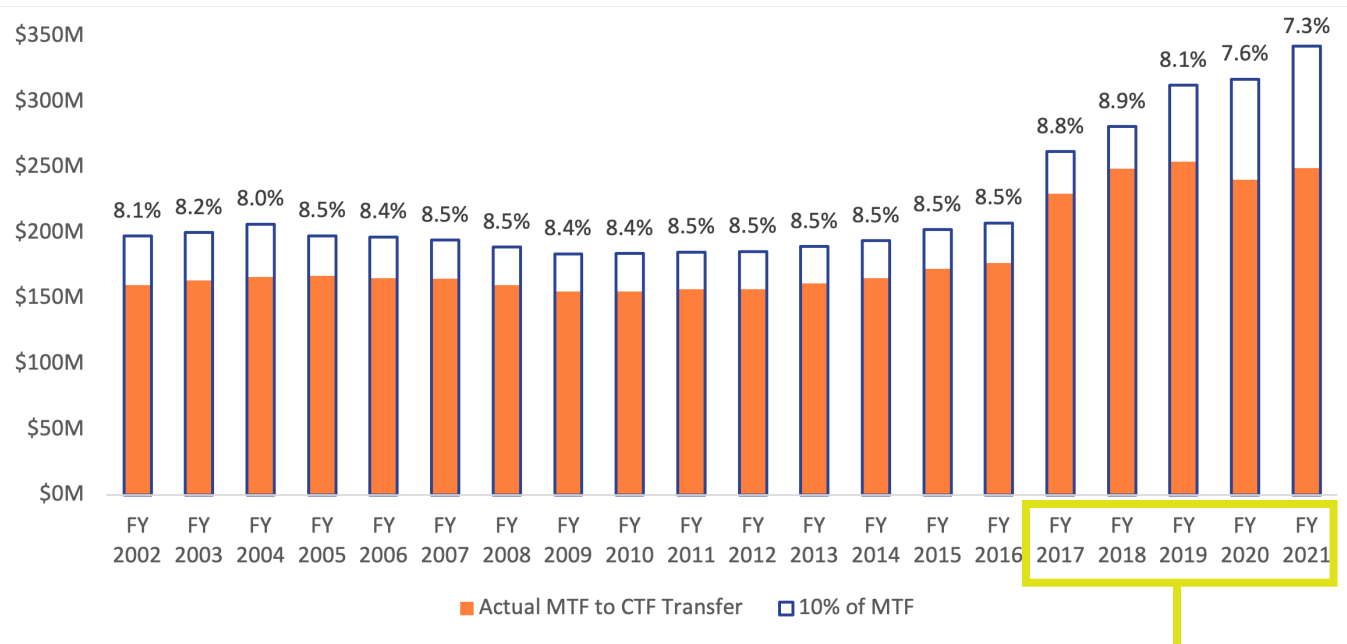


Figure 7. Revenue Transfers from the MTF to the CTF, Fiscal Years 2002 – 2021. Data adapted from House Fiscal Agency.

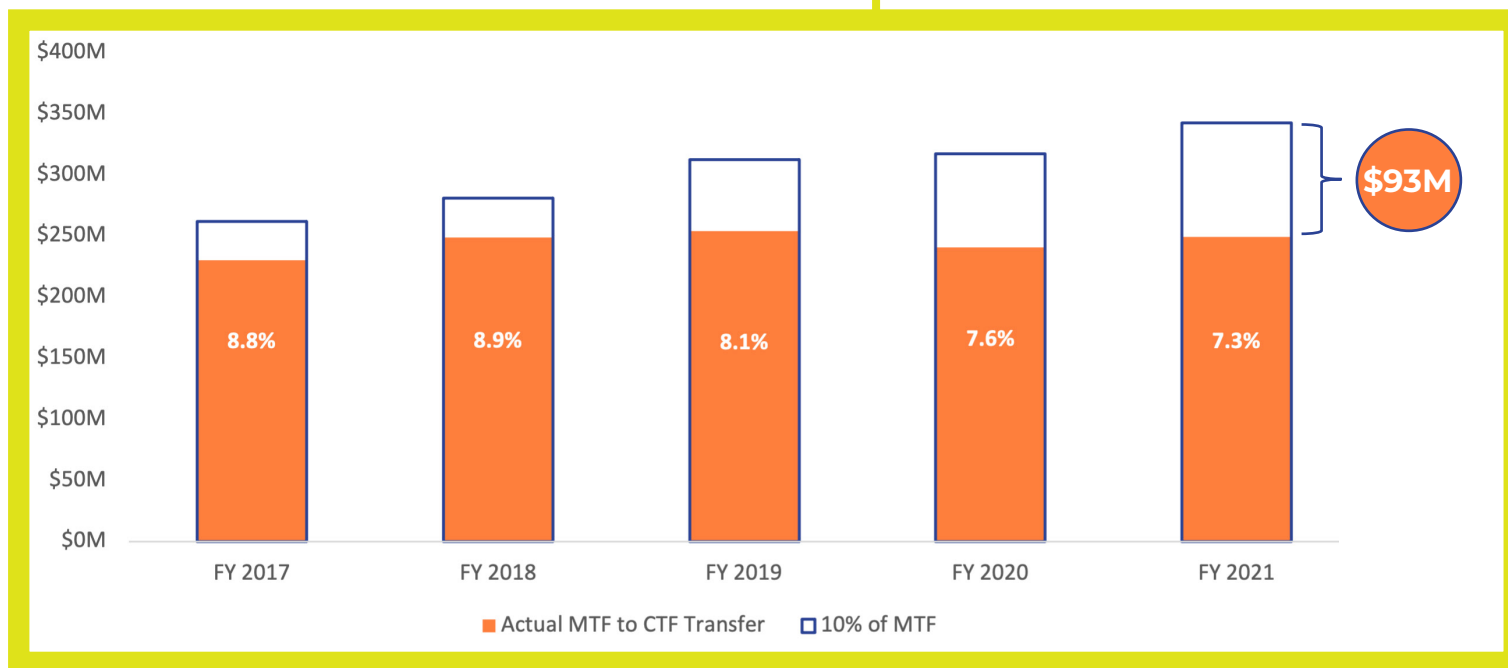


Figure 8. Revenue Transfers from the MTF to the CTF, Fiscal Years 2017 – 2021. Data adapted from House Fiscal Agency.

Timeline of Public Transit Funding Legislation

Public Act 51 grants the Michigan Legislature the power to govern appropriations for public transit programs. PA 51 also articulates how state and federal transportation revenue may be distributed.

Table 4 shows how selected legislation has supported or restricted transit funding since PA 51 was enacted. See Appendix B for a more detailed timeline of transit funding legislation.

Table 4. Selected Transit Funding Legislation

Legislation	Funds Established	Supports Transit Funding	Restricts Transit Funding
Public Act 51 of 1951	--	Directs transportation revenue into special revenue funds, and determines how those funds are spent	--
Constitution of Michigan of 1963	--	--	At least 90% of motor fuel taxes (with some exceptions) must be used exclusively for the construction, financing, and maintenance of roads, streets, and bridges designed primarily for the use of motor vehicles
Public Act 438 of 1982	Comprehensive Transportation Fund (CTF)	CTF to be maintained in the State Treasury as a separate fund	--
Public Act 223 of 1992 (Part 2)	Up to 10% of MTF to be distributed to CTF	--	--
Public Act 79 of 1997	--	--	Established an earmark of \$43 million for the State Trunkline Fund debt service; reallocated one cent of the gas tax for state bridge programs; reallocated revenue equal to 3 cents of the gas tax for distribution to state and local road agencies; \$3.5 million earmark from the MTF to Transportation Economic Development Fund
Public Act 117 of 1997	--	--	Reappropriated \$50 million from the CTF balance to the state, county road commissions, and cities and villages for road programs
Senate Bill 1103 of 2005	--	--	Redirected \$10.0 million from CTF to General Fund/General Purpose
Senate Bill 839 of 2006	--	--	Redirected \$11.1 million from CTF to General Fund/General Purpose
Public Act 179 of 2015	An earmark of \$600 million in state income tax revenue for the MTF	--	For the maintenance and repair of roads and bridges only
Initiated Law 1 of 2018 (Michigan Regulation and Taxation of Marihuana Act)	35% of marijuana excise directed to the MTF	--	For the maintenance and repair of roads and bridges only

Note: "Funding Established" refers to how each piece of legislation directs revenue; "Supports Transit Funding" refers to the ways in which legislation increases or expands funding for transit; "Restricts Transit Funding" refers to the ways in which legislation diminishes funding for transit.

Source: Adapted from the Michigan Legislature

To illustrate, in 1963, the State of Michigan's revised Constitution declared that at least 90 percent of specific taxes should be used exclusively for the construction and maintenance of roads and bridges "designed primarily for the use of motor vehicles using tires."³⁴ The Constitution further declares that the remaining balance, "if any," shall be used for the purposes of comprehensive transportation. Despite this clause, the 90 percent provision has limited the ability of the State to appropriate funding for comprehensive transit services sufficient for Michigan transit riders' needs.

Michigan lawmakers have passed amendments to PA 51 over the years to address a number of issues, including the lack of dedicated transit funding. Public Act 438 of 1982 created the CTF. A later bill (PA 223 of 1992) directed the CTF to receive up to 10 percent of the MTF.

In addition to allowing funding sources for transit services, PA 51 has also been amended to restrict funding sources. Millions of dollars have been reappropriated from the MTF and CTF over the years. Public Act 117 of 1997 reappropriated \$50 million from the CTF balance in a one-time transfer to the State, county road commissions, and cities and villages for road programs. Public Act 79 of 1997 directed a recurring earmark of \$3.5 million from the MTF to the Transportation Economic Development Fund (TEDF), which finances road and street projects that support economic growth. As currently structured, the TEDF cannot be used for transit-related projects — only for road improvement programs that stimulate job creation. Additionally, from 2005 to 2008, approximately \$36.4 million was redirected from the CTF to General Fund-General Purpose, the main State operating fund in which revenues are not dedicated to a specific purpose by statute.

The last decade has seen some revisions to Michigan transportation funding. A large transportation legislative package, including Public Acts 174, 176, and 179, increased transportation funding when it

was signed into law in 2015. Furthermore, in 2018, Michigan voters approved a measure to legalize marijuana and place an excise tax on all marijuana-related purchases. This measure stipulates that 35 percent of revenue from the tax is directed to the MTF "to be used for the repair and maintenance of roads and bridges."³⁵ While new revenue sources have been added to the state's transportation funding mechanisms, public transit in Michigan continues to be underfunded and not guaranteed.

INFLATION REDUCES THE PURCHASING POWER OF FUNDS FOR PUBLIC TRANSIT

For decades, the main source of revenue to support transportation has been the motor fuels tax, both in Michigan and across the nation. This tax had been a stable source of revenue over time and, as an instrument of taxation, has been reasonably easy to administer and collect. However successful the motor fuel tax has been in past decades, it has gradually weakened as a revenue generating mechanism for several reasons: vehicles are becoming more fuel-efficient; transportation programs are becoming more complex with allocations of funds to a broader set of needs; it has become an unpopular tax with the public; and finally, taxes typically do not keep up with inflation.³⁶ The gradual weakening of the motor fuels tax affects the MTF and, by extension, the CTF. However, while public officials have taken steps to bolster funding going to the MTF, these steps have not extended to the CTF, effectively resulting in a more substantial decline in the purchasing power of funds for public transit compared to funds for general transportation purposes. To address the reduced value of the motor fuel tax as vehicles become more fuel-efficient, the Michigan Legislature passed Public Act 140, which allows MDOT to engage firms to conduct studies on tolling Michigan highways.³⁷ Specifically, MDOT has been looking into the feasibility of introducing road user charges.³⁸

A series of bills passed in November 2015 were designed to increase transportation funding for the state; the measures included raising fuel taxes from 19 cents (gasoline) and 15 cents (diesel) to 26.3 cents per gallon, increasing vehicle registration fees, and creating a dedicated revenue stream from the State's General Fund that increased to \$600 million in fiscal year 2020 and all subsequent years.³⁹ While the influx of funding increased inflation-adjusted revenues for both the MTF and CTF beginning in 2017, resources from the General Fund are not distributed to the CTF because they are earmarked for road and bridge maintenance. As a result, the real purchasing power of MTF revenues has increased by 27 percent since fiscal year 2002, compared with only 6 percent for the CTF over the same period (see Figure 9).

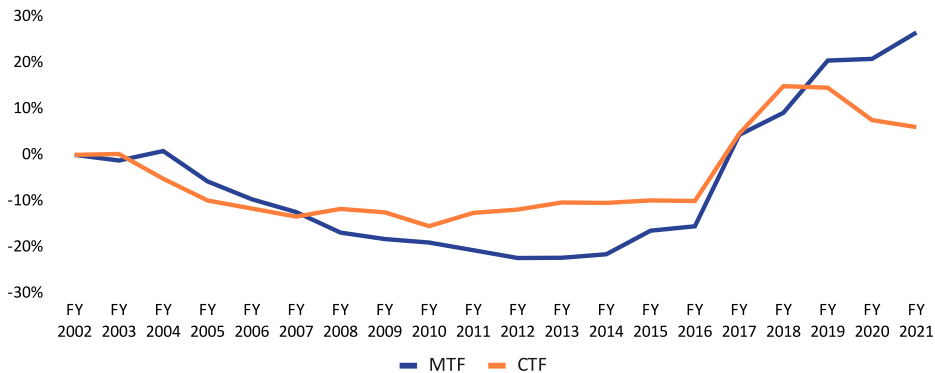


Figure 9. Inflation-Adjusted Change in Transportation Funding since Fiscal Year 2002. Data from House Fiscal Agency.

Given the decreasing effectiveness of gasoline taxes as vehicles become more fuel-efficient as well as the inflation of construction costs over time, MDOT and public transit agencies have historically expressed concerns about the potential for future funding gaps relative to key transportation needs.⁴⁰ Inflation-adjusted revenue figures for the MTF and CTF show annual funding levels at least 10 percent below fiscal year 2002 levels for every year between 2006 and 2016 (Figure 9). Both MDOT and Southeast Michigan Council of Governments (SEMCOG) staff have expressed that redistributing the available MTF funds from road projects to transit is “not a viable option” due to both a lack of political will and a perceived lack of sufficient road funding.⁴¹ Rather, the State will need to identify new sources of funding for the MTF.

The constraints imposed upon the CTF have a direct influence on MDOT’s ability to support transit agencies, forcing the agency to make tradeoffs between different transit-related priorities. Transit operators and interest groups frequently lobby for additional operating funds, which has resulted in legislators merely shifting CTF funds in the budget between different transit-related priorities. This dilemma has effectively created a zero-sum game for transit funding while driving additional administrative challenges for MDOT’s Office of Passenger Transportation, which is then forced to make tradeoffs between the size of the Local Bus Operating Assistance Program and budget line items like the Service Initiatives program, which is used for innovative projects and planning grant match funding.

MICHIGAN DEPARTMENT OF TRANSPORTATION'S (MDOT) ROLE IN PUBLIC TRANSIT FUNDING

Within MDOT, the Office of Passenger Transportation (OPT) is the primary department for transit-related activities. OPT is responsible for allocating operating funding to transit agencies through the Local Bus Operating Assistance Program, distributing federal transit funding, and coordinating and allocating state matching funds from the CTF. OPT staff also provide technical assistance to local transit agencies and support additional projects, such as piloting new technologies. OPT plays a significant role supporting rural agencies: there are eight program managers in the Transportation Services Section who submit applications for federal funding, provide oversight of federal fund expenditures, and are “on call”

for any support that local agency staff might need.⁴² While urban agencies work more independently and have direct relationships with the Federal Transit Administration (FTA), OPT is still available for technical assistance as needed.

Federal funds are allocated to state and local governments through what is called a “matching funds process,” meaning that state and local funds must be contributed in order to access the federal funds. Generally, FTA will contribute 80 percent of the funds for capital projects, with the remaining 20 percent coming from state and local funds.⁴³ For federal operating funds, the State typically provides a 30 to 50 percent match. MDOT is mandated to provide two-thirds of the required match of federal funding, leaving a third to be covered by local transit agencies. In practice, MDOT has historically supplied the entire local match, which is more than what many other state DOTs provide.⁴⁴ OPT administers these funds for local agencies; however, while OPT is responsible for submitting grant applications and providing oversight for rural transit agencies, urban agencies work directly with FTA to apply for discretionary funding and determine how the money is spent.⁴⁵



OPERATING VERSUS CAPITAL EXPENSES

Federal public transit expenditures are split into two categories: capital expenses and operating expenses. Capital expenses include the purchase of equipment, such as “buses, rail lines, and rail stations,”⁴⁶ whereas operating expenses consist of “vehicle operation and maintenance, maintenance of stations and other facilities, general administration, and purchase of transportation from private operators.”⁴⁷

Federal transportation programs are primarily focused on funding capital projects – very few provide funding for operation. In fact, the federal government supported “less than 10 percent of operating expenditures, but almost 40 percent of capital expenditures” for public transit nationwide in 2018.⁴⁸ For instance, Figure 10 shows that nearly 80 percent of the Ann Arbor Area Transportation Authority’s (AAATA) capital funding sources in 2020 came from federal assistance, compared to less than 20 percent from state funds and a mere 2 percent from local funds. On the other hand, the agency’s operating funds came primarily from local funds (45.2 percent) and state funds (31.3 percent), with only 11 percent from federal assistance.⁴⁹

For this reason, many local transit agencies find it challenging to secure operating funding and are dependent on the Local Bus Operating Assistance Program, farebox revenues, local property taxes, transit-specific millages, and other local revenue-generating activities. Of the most common federal funding opportunities, only the Urbanized Area Formula Grant and the Congestion Mitigation and Air Quality Improvement Program (CMAQ) can be used for operating expenses – with restrictions. For the Urbanized Area Formula Grant, operating assistance is only an eligible expense for urbanized areas with populations less than 200,000 – meaning that while the Benton Harbor area’s Twin Cities Area Transportation Authority (TCATA) would be eligible to receive operating assistance, the Suburban Mobility Authority for Regional Transportation (SMART) would not be.⁵⁰ CMAQ funding can only be used to cover three years of operating expenses for new transit services.⁵¹

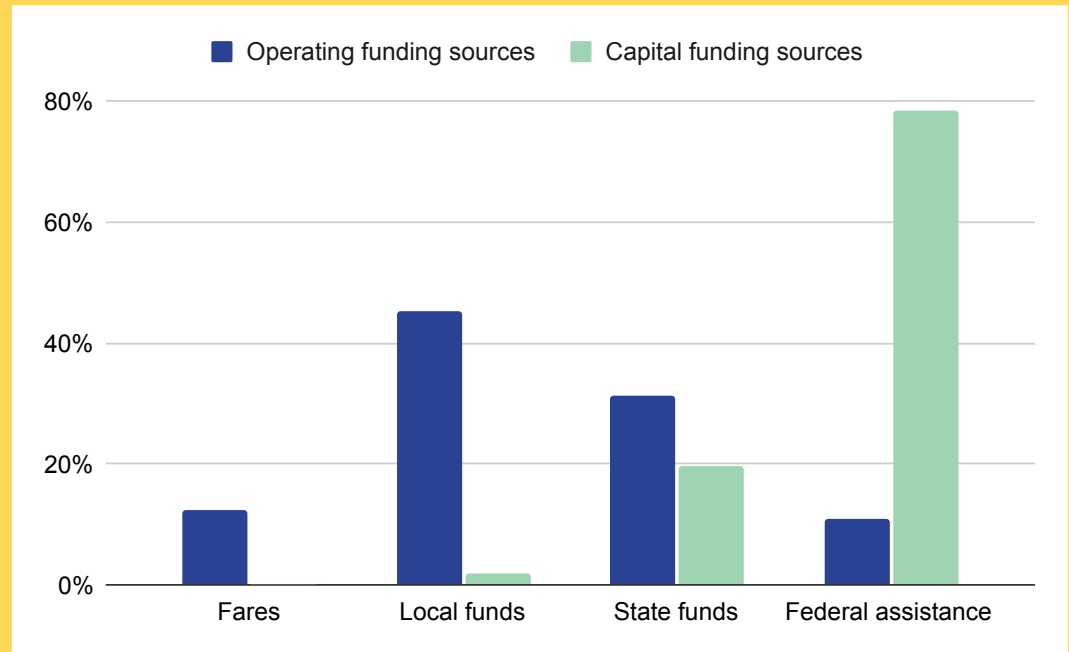
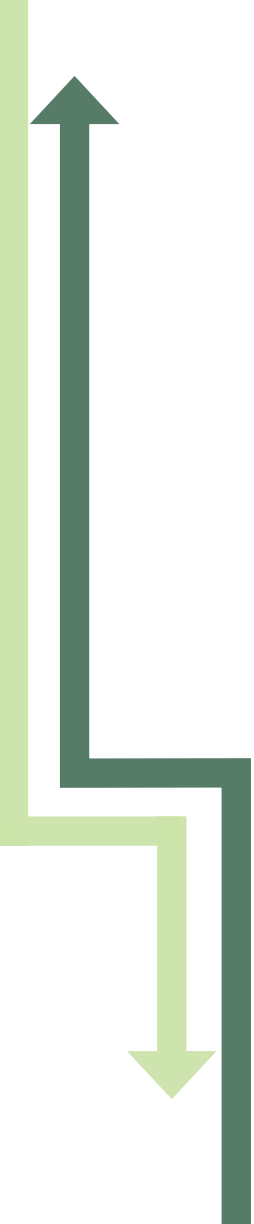


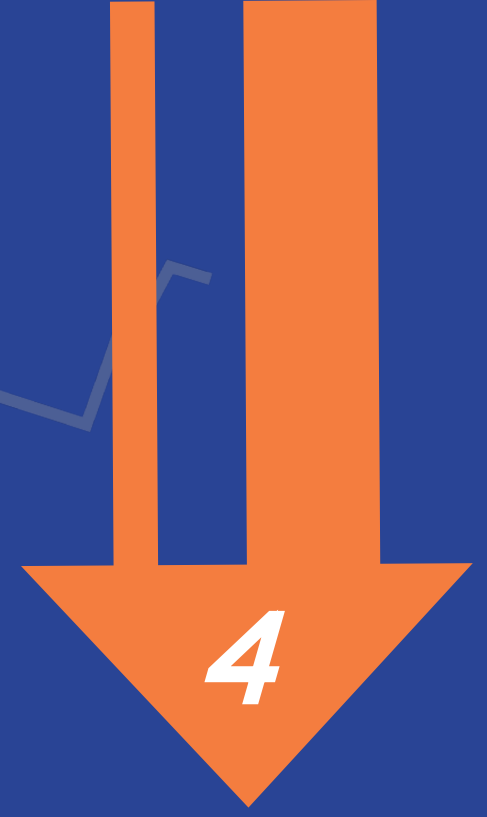
Figure 10. Ann Arbor Area Transportation Authority (AAATA) Operating and Capital Funding Sources, 2020. Data from U.S. Department of Transportation Federal Transit Administration, “Ann Arbor Area Transportation Authority Agency Profile”, <https://www.transit.dot.gov/ntd/transit-agency-profiles/ann-arbor-area-transportation-authority>.

KEY POINTS OF THIS CHAPTER

- 
- Legal and constitutional frameworks in Michigan limit the amount of funding that can be used for public transit. The Michigan Constitution decrees that no less than 90 percent of the Michigan Transportation Fund (MTF) be used for roads, streets, and bridges, leaving a maximum of 10 percent for the Comprehensive Transportation Fund (CTF), which can be used for public transit programs.
 - Amendments to the legislation over the years have earmarked additional MTF funds for road and bridge spending, effectively reducing the amount of funding available for the CTF. Overall MTF revenues are decreasing as vehicles become more fuel-efficient and motor fuel tax revenues decline, thereby also decreasing both MTF and CTF revenues. However, new legislation to increase transportation funding to account for the decreasing effectiveness of gas taxes has largely restricted those funds to road and bridge construction and maintenance.
 - Actual transfers of MTF funds have rarely reached the full 10 percent allocation that is allowed by Public Act 51. In the past two decades, the amount distributed to the CTF has not risen above 9 percent of the MTF and fell to 7.3 percent in fiscal year 2021, amounting to a net loss of \$93 million in CTF funds versus the maximum allowable amount and severely limiting opportunities for statewide transit investment.

ENDNOTES

28. The CTF can also be used for other transportation budget needs, such as freight rail.
29. House Fiscal Agency, "Act 51 Primer: A Guide to 1951 Public Act 51 and Michigan Transportation Funding."
30. House Fiscal Agency, "Fiscal Brief: MTF Distribution Formula to Local Road Agencies."
31. House Fiscal Agency, "The Comprehensive Transportation Fund and State Support for Local Public Transit Agencies."
32. House Fiscal Agency.
33. House Fiscal Agency.
34. Michigan Legislature, "CONSTITUTION OF MICHIGAN OF 1963."
35. Michigan Legislature, "Michigan Regulation and Taxation of Marihuana Act."
36. Taylor, "The Geography of Urban Transportation Finance"; Transportation Research Board, *Special Report 285: The Fuel Tax and Alternatives for Transportation Funding*.
37. Michigan Department of Transportation, "Statewide Tolling and Managed Lanes Programs Study for the State of Michigan."
38. Ruestman, Interview By Catherine Kemp, Christopher Moon-Miklaucic, Camilla Lizundia, and Shanea Condon.
39. House Fiscal Agency, "Memorandum: Impact of the November 2015 Road Funding Package."
40. Ruestman, Interview By Catherine Kemp, Christopher Moon-Miklaucic, Camilla Lizundia, and Shanea Condon.
41. Ruestman; Brydon, Interview by Catherine Kemp and Camilla Lizundia.
42. Brush, Interview By Catherine Kemp and Camilla Lizundia.
43. U.S. Department of Transportation Federal Transit Administration, "Local Matching Funds."
44. Stupka, Interview By Christopher Moon-Miklaucic, Catherine Kemp, and Paul Jones III.
45. Ruestman, Interview By Catherine Kemp, Christopher Moon-Miklaucic, Camilla Lizundia, and Shanea Condon.
46. Congressional Research Service, "Federal Public Transportation Program: In Brief."
47. Congressional Research Service.
48. Congressional Research Service.
49. U.S. Department of Transportation Federal Transit Administration, "Ann Arbor Area Transportation Authority Agency Profile."
50. U.S. Department of Transportation Bureau of Transportation Federal Highway Administration, "A Guide to Federal-Aid Programs and Projects."
51. Michigan Department of Transportation, "Michigan Department of Transportation CMAQ 2020 Program Guidance."



***FEDERAL SOURCES OF
FUNDING THAT SUPPORT
PUBLIC TRANSIT IN MICHIGAN***



In addition to State funding, the U.S. Department of Transportation (USDOT) administers a range of transportation grants and programs through the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) to support the planning and implementation of transportation projects by state and local government agencies.⁵² Federal government funding allocations differ depending on the program: some of them allocate funds through a formula system, some are discretionary grants that require agencies to submit applications, and some are a combination of both. While FHWA is primarily focused on roads and highways, the agency has a few funding sources that can be used for public transit. On the other hand, FTA funding sources are reserved exclusively for public transit projects. Considering the large costs associated with transportation infrastructure projects, agencies will sometimes combine funds from different funding sources for a single project. Table 5 shows major grants and programs that support public transit projects, including their eligibility requirements.

Table 5. Federal Transportation Funding Programs for Public Transit

Program Name	Section Number	Agency	Program Type	Eligible Transit Projects	Eligible Entities
RAISE (Rebuilding American Infrastructure with Sustainability and Equity)		DOT	Discretionary	- Roads, rail, transit	- State, local, and Tribal government agencies - Transit agencies - MPOs*
TIFIA		DOT	Loan Financing	- Intelligent Transportation Systems (ITS) - Intermodal connectors - Transit vehicles and facilities - Intercity buses and facilities - Passenger rail vehicles and facilities	- State and local government agencies - State infrastructure banks - Private firms - Transportation Improvement Districts
STBG - Rural Area Program		FHWA	Formula	- Bus and van purchase, rehabilitation, and lease - Administrative costs - Facility construction, improvement, and purchase	- Road commissions, cities, villages, regional transportation authorities, transit agencies, and MPOs which operate in rural areas with a population less than 5,000 - Private, nonprofit corporations and associations that provide transportation services meeting the special needs of seniors and individuals with disabilities
STBG - Small Urban Program		FHWA	Formula	- Bus and van purchase, rehabilitation, and lease - Administrative costs - Facility construction, improvement, and purchase	- Road commissions, cities, villages, regional transportation authorities, transit agencies, and MPOs which operate within the federal urban area boundaries of cities with populations from 5,000 to 49,999 - Private, nonprofit corporations and associations that provide transportation services meeting the special needs of seniors and individuals with disabilities
STBG - Urban Program		FHWA	Formula	- Bus and van purchase, rehabilitation, and lease - Administrative costs - Facility construction, improvement, and purchase	- Road commissions, cities, villages, regional transportation authorities, transit agencies, and MPOs which operate in the service area with a population more than 50,000 - Private, nonprofit corporations and associations that provide transportation services meeting the special needs of seniors and individuals with disabilities
Congestion Mitigation and Air Quality (CMAQ)		FHWA	Formula	- Operating expenses: new transit and passenger rail services, intermodal facilities, inspection and maintenance programs, vanpooling - Bus purchase and replacement, transit facilities if associated with a new or enhanced route	- MDOT, county road commissions, local governments - Transit agencies, MPOs and Regional Planning Agencies (RPAs) [†]

* **Other Considerations:** Prioritizing lower-income census tracts

† **Other Considerations:** Projects must be located within a nonattainment or maintenance area as defined under National Ambient Air Quality Standards (NAAQS): Allegan, Berrien, Livingston, Macomb, Monroe, Muskegon, Oakland, St. Clair, Washtenaw, and Wayne Counties

Program Name	Section Number	Agency	Program Type	Eligible Transit Projects	Eligible Entities
National Highway Performance Program (NHPP)		FHWA	Formula	<ul style="list-style-type: none"> - Publicly owned intercity and intracity bus terminals - Intelligent Transportation Systems (ITS) - Other transit capital improvements that serve the National Highway Systems (NHS) 	<ul style="list-style-type: none"> - MDOT
Urbanized Area Formula Grant	5307	FTA	Formula	<ul style="list-style-type: none"> - Planning, engineering, design and evaluation of transit projects and other technical studies - Bus purchase and rehabilitation - Fixed guideway systems - Operating expenses (only for populations less than 200,000 unless identified by FTA as eligible under the Special Rule) 	<ul style="list-style-type: none"> - MDOT - MPOs and local transit agencies
Formula Grants for Rural Areas	5311/5340	FTA	Formula	<ul style="list-style-type: none"> - Planning - Capital projects - Acquisition of public transportation services. - Operating expenses 	<ul style="list-style-type: none"> - MDOT - MPOs, local transit agencies, and tribal entities providing public transportation in rural areas of the state
Bus and Bus Facilities	5309/5339	FTA	Formula/Discretionary	<ul style="list-style-type: none"> - Replacement, rehabilitation and purchase of buses, vans, and related equipment 	<ul style="list-style-type: none"> - MDOT - MPOs, and local transit agencies
Transit State of Good Repair Grants	5337	FTA	Formula	<ul style="list-style-type: none"> - Replacement and rehabilitation of transit vehicles and associated infrastructure, including stations and terminals 	<ul style="list-style-type: none"> - State and local government authorities in urbanized areas with fixed guideway and high intensity motorbus systems in revenue service for at least seven years
Low- or No Emissions Bus Grants	5339c	FTA	Discretionary	<ul style="list-style-type: none"> - Purchase or lease of zero-emission and low-emission buses - Acquisition, construction, and leasing of supporting facilities, including charging infrastructure 	<ul style="list-style-type: none"> - State, local, and Tribal governments. Rural projects must be part of a consolidated state proposal
Fixed Guideway Capital Investment Grants	5309	FTA	Discretionary	<ul style="list-style-type: none"> - Capital investment in heavy rail, commuter rail, light rail, streetcars, and bus rapid transit 	<ul style="list-style-type: none"> - State and local government agencies - Transit agencies

Sources: U.S. Department of Transportation, "RAISE Grants: Rebuilding America's Infrastructure with Sustainability and Equity." Michigan Department of Transportation, "Federal Passenger Transportation Programs"; "Michigan Department of Transportation CMAQ 2020 Program Guidance." Southeast Michigan Council of Governments, "Congestion Mitigation and Air Quality (CMAQ)." U.S. Department of Transportation Federal Transit Administration, "Urbanized Area Formula Grants - 5307"; "Formula Grants for Rural Areas - 5311"; "Grants for Buses and Bus Facilities Formula Program - 5339(a)"; "State of Good Repair Grants Program: Guidance and Application Instructions"; "Fact Sheet: Capital Investment Grants Program."

FORMULA FUNDING, FLEXIBLE FUNDING, & DISCRETIONARY FUNDING

FORMULA FUNDING PROGRAMS

Congress appropriates federal dollars to USDOT’s various formula grant programs, which are then apportioned to states, tribal entities, and transit agencies based on formulas that consider population and other factors. Agencies may then sub-allocate these funds to local agencies based on their discretion, additional formulas, or competitive processes. The primary formula funding source is the Urbanized Area Formula Grant (5307), which provided approximately \$100 million to support public transit in Michigan in 2021.⁵³ Funds from the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and the Surface Transportation Block Grant Program (STBG) are also apportioned to states according to codified formulas, as are the State of Good Repair Grants and the National Highway Performance Program (NHPP). Figure 11 illustrates how the largest federal funding programs were allocated to the State of Michigan in 2021.

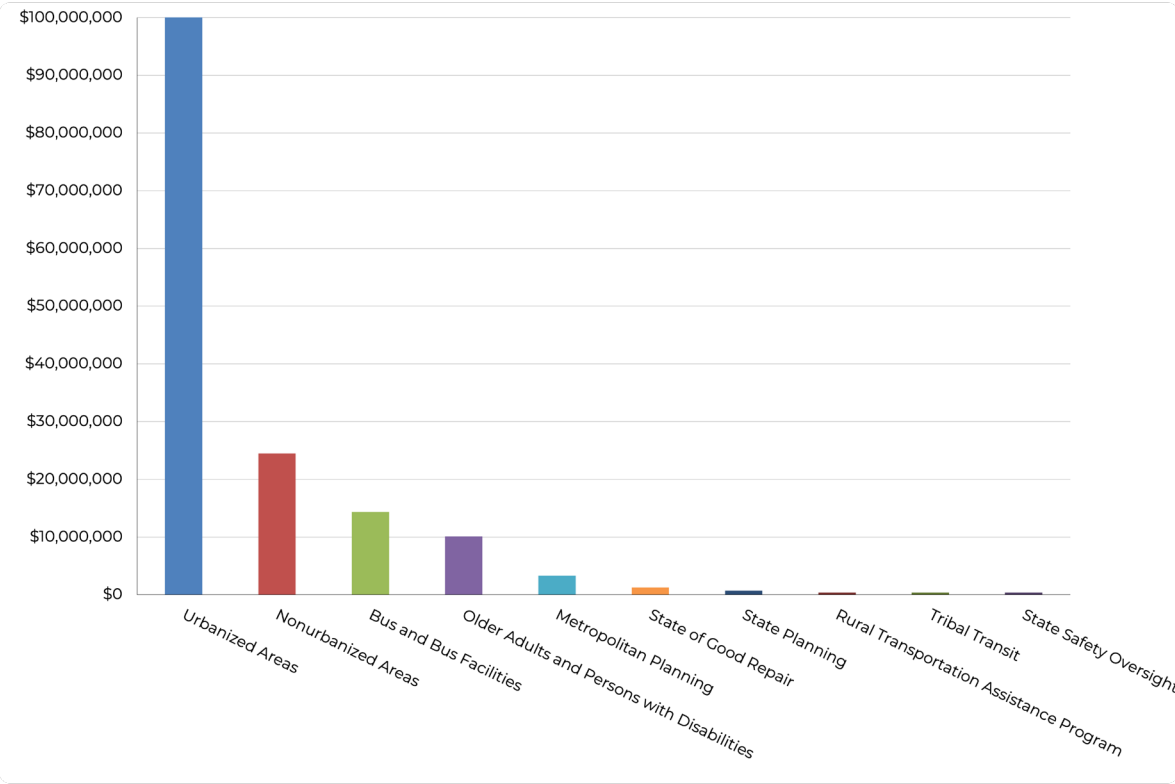


Figure 11. Federal Formula Funding Program Allocations to the State of Michigan, 2021. Data from Federal Transit Administration, U.S. Department of Transportation Federal Transit Administration, “FTA Allocations for Formula and Discretionary Programs by State FY 1998-2022 Full Year.”

FLEXIBLE FEDERAL FUNDING

Starting with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and continuing with subsequent reauthorization acts (e.g., MAP-21, the FAST Act, IIJA), Congress has provided some amount of flexibility to states in how they can use certain federal-aid highway funds.⁵⁴ The intention of the legislation was and continues to be to allow states to use highway funds for a wider variety of transportation projects, including public transit. States and Metropolitan Planning Organizations (MPO) that hope to use highway funding for transit projects submit a request to FHWA, and if approved, the

formula funds are transferred to FTA, which then distributes the funds as grants to the state or local agency. In Michigan, most of the decisions about “flexing” highway funding for transit projects are made at the local level during MPO or transit agency-led planning processes.

Historically, most states have not fully leveraged this flexibility to fund transit projects.⁵⁵ Urbanized areas with populations greater than one million people have been more likely to flex funds, with California, New York, New Jersey, and Virginia accounting for more than half of all funds “flexed” to transit projects between 2007 and 2012.⁵⁶ To date, Michigan agencies have not utilized this funding as much as other states nor as much as they could: from 2007 to 2011, Michigan transferred approximately \$75 million of its flexible funding to FTA for transit projects, amounting to less than 10 percent of its apportioned flexible funding.⁵⁷

While there are several federal-aid highway programs that can be used for transit projects, the two primary FHWA programs that have historically provided the largest amounts of flexible funding are the Surface Transportation Block Grant Program (STBG) and the Congestion Mitigation and Air Quality Improvement Program (CMAQ). Apportionment formulas determine the amount of federal funding that is distributed to each state, and each state has a slightly different process for distributing these funds to the local level. In Michigan, most STBG and CMAQ funds are allocated based on a local project selection process. Though MDOT is responsible for distributing flexible funds and handling administrative needs (e.g., initiating the transfer of “flexed” funds from FHWA to FTA to the local agency), MDOT has limited influence on whether or not local STBG and CMAQ funds are flexed for transit projects.

Congestion Mitigation and Air Quality Improvement Program

CMAQ was created with the passage of ISTEA in 1991 to help meet Clean Air Act targets by supporting surface transportation projects that would improve air quality and mitigate congestion.⁵⁸ CMAQ funds are only available to places considered “nonattainment areas” – areas where air pollution levels exceed National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide, particulate matter, or nitrogen dioxide – or “maintenance areas” – areas where air quality used to exceed NAAQS.⁵⁹ In Michigan, as shown in Figure 12, all Southeast Michigan Council of Governments (SEMCOG) counties (Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, Wayne) plus Allegan, Berrien, and Muskegon Counties are nonattainment areas for 2015 ozone standards.⁶⁰

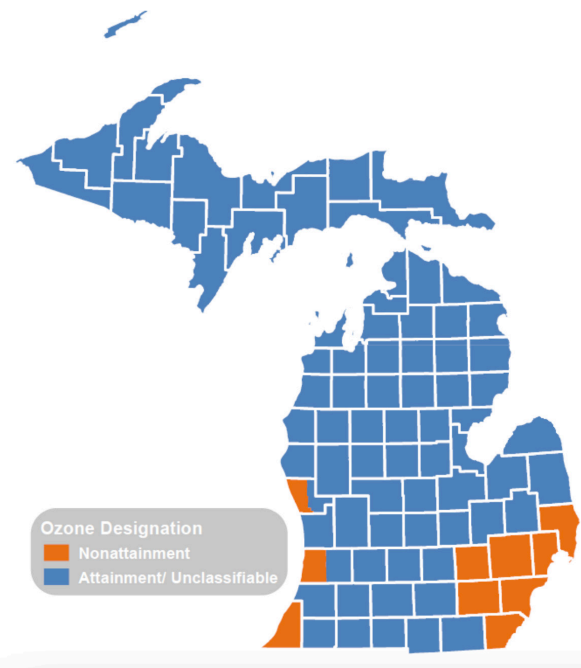


Figure 12. Nonattainment Areas for the 2015 Ozone National Ambient Air Quality Standards. Map from Michigan Department of Environment, Great Lakes, and Energy, “Ozone Nonattainment”, <https://www.michigan.gov/egle/about/organization/air-quality/state-implementation-plan/ozone-nonattainment>.

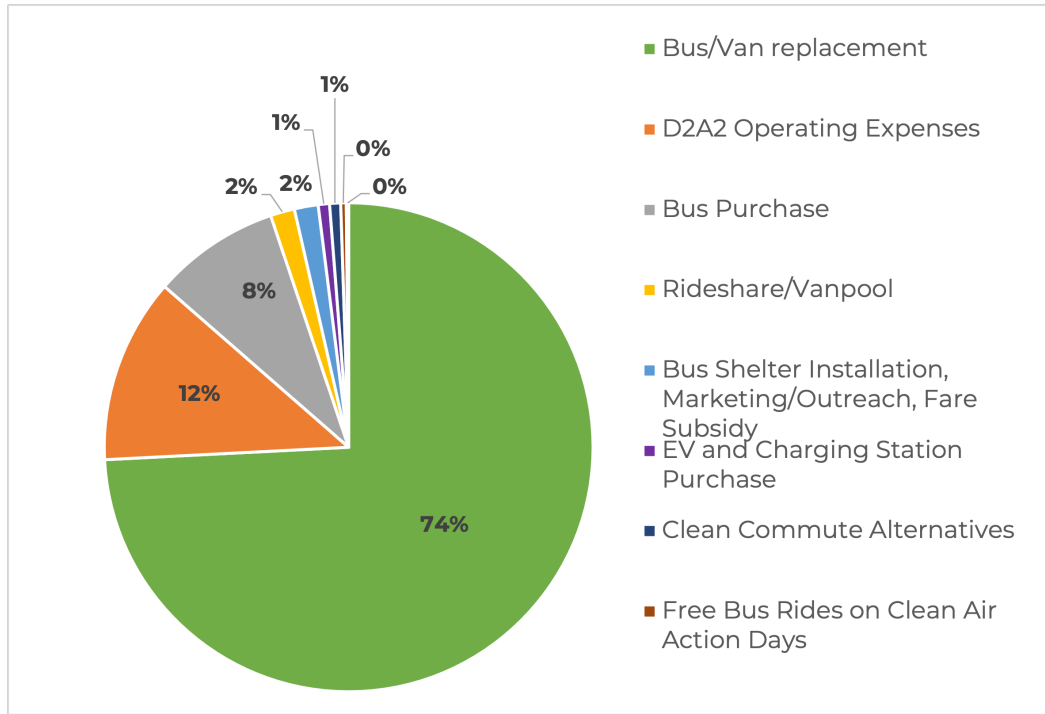


Figure 13. CMAQ Funds for Public Transit by Expenditure Type, Fiscal Year 2021. Data from MDOT Office of Passenger Transportation.

CMAQ funds are apportioned in lump sums to states according to codified formulas based on local air quality and population in nonattainment areas.⁶¹ CMAQ projects must demonstrate air quality benefits (e.g., emissions reductions) and have included everything from traffic signal optimization and roundabouts to transit vehicle replacements and non-motorized facilities.⁶² CMAQ funding can be used for capital and operating expenses as well as planning and project development expenses, but operating assistance is reserved for new transit service. The intention of CMAQ operating assistance is to help with start-up costs for new transportation services, so CMAQ funding can only be used to cover three years of operating expenses like labor, fuel, administrative costs, and maintenance for new transit services (though payments can be spread over a period of five years).⁶³ In fiscal year 2021, the

only CMAQ funds for operating assistance were directed to RTA for operating a pilot express bus between Detroit and Ann Arbor (“D2A2”).⁶⁴ In fiscal year 2019, SMART received \$829,192 for “increased service” for various bus routes. Capital expenses therefore tend to comprise the vast majority of CMAQ funds, with most of those dollars going to bus replacement and bus purchases.

In Michigan, 50 percent of apportioned CMAQ funds are reserved for MDOT, which can transfer up to that amount to other apportionment programs, and 50 percent of CMAQ funds go to local agency projects.⁶⁵ Each year, MDOT conducts an internal call for projects to solicit state projects to fund with MDOT’s CMAQ share. For all other projects, applicants must submit an application during their MPO’s respective calls for projects. Though each MPO uses its own process, most tend to solicit projects from local agencies, evaluate projects based on their cost-effectiveness and other criteria, create a list of projects, and then submit that list of projects to MDOT’s local CMAQ Call for Projects Committee (CFP) for further evaluation.⁶⁶ The CFP Committee will review the submitted projects to ensure they meet FHWA CMAQ program requirements (e.g., result in emissions reductions) and may ask the MPO for revisions or reject the project. For transit projects, OPT handles the review process. Other than that, MDOT does not impose its own criteria and does not have any targets or goals for the amount of funding that should go to transit, highways, or other project types.⁶⁷ Per interviews with MDOT staff, the agency prefers to defer to local agencies and “respect local autonomy” rather than place any additional restrictions or guidelines on flexible funds. According to MDOT’s current CMAQ

Program Manager, “We don’t want to come in as the big bad state agency and dictate to them what they should do with funding... our job is to assist and facilitate.” FHWA conducts a final review of the projects to ensure eligibility, and pending approval, MDOT will handle the transfer of FHWA funds to FTA. While CMAQ funds for highways do not require a match, funds that are flexed for transit typically require a state or local match that MDOT has historically provided.

“We don’t want to come in as the big bad state agency and dictate to them what they should do with funding... our job is to assist and facilitate.”

– CMAQ Program Manager, MDOT

Historically, agencies in larger urban areas have flexed CMAQ funds for transit projects more than they have flexed Surface Transportation Program (STP) or STBG funds. According to MDOT’s OPT, local agencies chose to flex approximately \$16.4 million in CMAQ funds for transit projects across Michigan in fiscal year 2021, constituting 32 percent out of a total of \$51.8 million that was allocated to Michigan by FHWA.⁶⁸

SEMCOG is the MPO and Council of Governments that covers most of the nonattainment areas in Michigan, thus serves as an illustrative example of how CMAQ projects are selected in the state. SEMCOG has a nonbinding target of using 50 percent of its apportioned CMAQ funds for transit projects. In fiscal year 2019, highway projects in the SEMCOG region received \$9.3 million, traffic operations centers received \$5.3 million, and transit projects received approximately \$9 million.⁶⁹ To put the impact of CMAQ on local transit agencies in perspective, CMAQ funding comprises approximately 10 percent of SMART’s fiscal year 2021 capital budget: \$4.19 million (original federal CMAQ dollars plus the 20 percent state match) out of a total capital budget of \$42.1 million.⁷⁰

Surface Transportation Block Grant Program

Formerly known as the Surface Transportation Program (STP) and renamed STBG in 2015 with the passage of the Fixing America’s Surface Transportation Act (FAST Act), STBG is considered the “most flexible” due to the number of eligible activities allowed under the program.⁷¹ STBG funds are apportioned in lump sums to states according to codified formulas.

Historically, Michigan agencies have flexed STBG funds for transit projects to varying degrees. Many rural transit agencies have successfully leveraged STBG funds for transit: in fiscal year 2021, approximately \$3 million was flexed for transit by agencies across the state – \$1.8 million of which was flexed by 33 rural transit agencies and local governments, which comprises roughly 4 percent of the total STBG funds obligated to rural agencies.⁷² MDOT convenes 22 Rural Task Forces to make decisions about federal funding for rural counties with populations less than 400,000. These task forces consist of the county road commission, the localities with less than 5,000 residents within the county, and the rural transit provider, and they select which projects should be funded through STBG, thereby making decisions about how much will be flexed for transit.⁷³

On the other hand, large and small urban agencies haven’t historically flexed many STBG funds for transit projects. In fiscal year 2021, six small urban agencies (classified under the STBG program as those serving populations from 5,000 to 49,999) flexed \$816,500, which is 7 percent of the \$11.9 million obligated to small urban agencies through STBG overall.⁷⁴ Of the urban agencies serving populations from 200,000 to one million, only two flexed STBG funds in 2021: the Ann Arbor Area Transportation Authority (AAATA) used funds for pedestrian improvements while Livingston County used funds for bus replacements. While many transit agencies are aware of their ability to flex funds, there are still opportunities to inform agencies about this potential strategy to direct more STBG funding to public transit projects. USDOT’s Transportation Planning

Capacity Building division released a [Flexible Funding for Transit Access](#) webpage that provides resources about flexing funds.⁷⁵

Other states and MPOs provide compelling examples of how to effectively leverage flexible highway funds for transit projects. On a state level, Pennsylvania DOT reserves \$25 million of flexible highway funding – primarily CMAQ funds – for transit projects.⁷⁶ While the San Francisco Bay Area may not be considered a peer region to metropolitan Detroit, the Metropolitan Transportation Commission’s [One Bay Area Grant](#) program could serve as inspiration for Michigan MPOs. Launched in 2012, the One Bay Area program effectively combines the region’s CMAQ and STBG funds into one competitive call for projects that uses a project selection framework closely aligned with the Plan Bay Area – the region’s most recent long-term Regional Transportation Plan that includes a strong focus on sustainability and climate action. The program’s project selection criteria also includes equity considerations, like increasing funding levels for “Equity Priority Communities.”⁷⁷ By amending project selection criteria for CMAQ and STBG funding to favor projects that advance climate and equity goals, transit projects may be more likely to be selected.

DISCRETIONARY FUNDING PROGRAMS

In addition to funding sources allocated by formula, the FTA has a number of competitive funding opportunities ranging from Low or No Emissions (Low-No) Bus Grants, which allow agencies to purchase or lease zero- or low-emissions vehicles, to Capital Investment Grants, which can be used for new or expanded bus rapid transit projects. Michigan agencies have been successful in applying for discretionary grants in the past. For example, MDOT was recently awarded a \$10 million grant through the RAISE program for the Detroit New Center Intermodal Facility Project,

while Thumb Area Transit in Huron County received a Low-No grant to replace its transit center with a new operations and maintenance facility that could support its new battery-electric buses.⁷⁸ In Michigan, local transit agencies in urban areas apply directly to FTA for certain discretionary grant programs while MDOT applies to discretionary programs on behalf of rural agencies.⁷⁹ While discretionary grants can help agencies implement transit capital projects, it can be challenging for agencies with limited staff capacity to apply for all of the competitive grants that they may be eligible for.⁸⁰ Although OPT provides some technical assistance and MPOs like SEMCOG can provide helpful data and letters of support, additional capacity would help Michigan agencies access federal discretionary funding – especially with many new programs becoming available under IIJA. See Table 5 for a list of discretionary programs available to public transit agencies.

To summarize, flexible and discretionary sources of funding provide an opportunity for Michigan to expand the total amount of funding available for public transit. However, our review suggests that Michigan has not vigorously pursued flexing funds from highway programs to transit while showing some success in competing for discretionary funding. Both sources of funding require high levels of coordination between local, regional, and state officials and a commitment of time and resources that tend to favor larger agencies with sufficient staff.

IMPLICATIONS OF THE INFRASTRUCTURE INVESTMENT AND JOBS ACT

The 2021 Infrastructure Investment and Jobs Act (IIJA) – also known as the Bipartisan Infrastructure Law (BIL) – will provide more than \$108 billion for public transit over the next five years.⁸¹ It includes new grant opportunities and updates eligibility for existing programs, thereby presenting opportunities for MDOT and local transit agencies to secure additional transit funding. While FHWA is still promulgating new rules and creating new guidelines as of April 2022, the agency has released guidance about how states, MPOs, and local agencies should prioritize projects for funding through IIJA. In this section, we summarize the most relevant new grant programs and explore changing eligibility and guidelines.

NEW & EXPANDED FEDERAL GRANT PROGRAMS

Multimodal Programs

The majority of new transportation-related discretionary grant programs included in IIJA are being allocated to “advancing, building, and implementing multimodal connections” in communities across the country.⁸² The most notable of these grant opportunities are the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants (formerly known as TIGER or BUILD), which provide “\$30 billion over five years for a competitive grant process towards roads, rail, transit, and port projects.”⁸³ This is a significant increase over the prior iterations of this grant program, which had only invested \$4 billion in such projects since 2009. In the fiscal year 2022 competition, at least \$15 million will be granted to projects located in “Areas of Persistent Poverty” or “Historically Disadvantaged Communities.” Many rural communities, Areas of

ADDITIONAL RESOURCES ON THE IIJA

For additional analysis and guidance that may be of use to state and local agencies and advocates as federal guidance continues to evolve, see these resources:

- White House: [A Guidebook To The Bipartisan Infrastructure Law For State, Local, Tribal, And Territorial Governments, And Other Partners](#)
- US DOT: [Upcoming Notice of Funding Opportunity Announcements in 2022](#)
- FTA: [Program Fact Sheets under the Bipartisan Infrastructure Law](#)
- Transportation for America: [Understanding the 2021 Infrastructure Law](#)
- American Public Transportation Association: [Smart Guide to the Bipartisan Infrastructure Act](#)
- National Association of Regional Councils: [Infrastructure Investment and Jobs Act Bill Analysis](#)

Persistent Poverty and Historically Disadvantaged Communities will be newly eligible to receive 100 percent federal funding (as opposed to the standard 80 percent federal share).⁸⁴ The USDOT has created [a tool](#) to help identify Transportation Disadvantaged Census Tracts.⁸⁵ Michigan is home to 501 of these Historically Disadvantaged Communities – many of which are located in the Detroit metropolitan area.

Several existing transit-specific grants will see significant increases in funding. For example, the Capital Investment Grant Program – which funds expansion or improvement of new fixed guideway projects – will increase to \$23 billion over five years from the \$11.5 billion authorized under the FAST Act.⁸⁶ The amount of funding available through the Bus and Bus Facilities Grant program almost doubled to approximately \$2 billion per year over the next five years under IIJA, with the largest share going to the Low or No Emissions program – approximately \$1 billion more than the Low-No program received in fiscal year 2021.⁸⁷ The Bus and Bus Facilities formula and discretionary programs have historically been used primarily for bus replacements and facility upgrades, but have also been used in some places to install bus rapid transit (BRT), benches, shelters, and bathrooms.⁸⁸ The State of Good Repair formula program will also see an increase from \$13.4 billion to \$21.6 billion over five years.⁸⁹ Finally, there are three rail-focused programs providing \$54 billion to intercity passenger and freight transportation projects.

IIJA also authorized several new transportation funding sources, including the Transportation Infrastructure Finance and Innovation Act (TIFIA) program that allocates \$1.25 billion in discretionary funding over five years to “help finance large transportation projects with direct loans, loan guarantees, and credit risk assistance.”⁹⁰ The TIFIA program accepts applications on a rolling basis.

Climate-Related Grant Programs

IIJA also includes approximately \$15 billion in competitive grant programs seeking to reduce the negative impacts of climate change. Although the electrification of cars and trucks is the single largest focus (\$7.5 billion), this bucket also includes the new \$1.4 billion PROTECT grant program focused on “planning, capacity building, and targeted climate mitigation or resiliency infrastructure funding,”⁹¹ along with a \$500 million program of authorized but unfunded monies for Healthy Streets, funding streetscape improvements that reduce the urban heat island effect in urban areas. The bulk of the remaining amount set aside for climate-related grants are for projects that protect wetlands, thus not transportation-focused.

Another new climate-related federal funding source that can be used for public transit is the Carbon Reduction Program, which is designed to fund projects that “reduce transportation emissions or the development of carbon reduction strategies,” including public transit projects.⁹² State DOTs will be required to develop a carbon reduction strategy in consultation with MPOs – to be updated every four years – that outlines emissions reductions targets and projects that will reduce emissions.⁹³ While FHWA has yet to release additional information about the Carbon Reduction Program, developing a carbon reduction strategy with specific targets and strategies would be a clear opportunity for MDOT and its partner agencies to promote transit projects that would have high emissions reduction impacts.

Evolving Guidelines for Existing Formula Programs

IIJA serves as the most recent surface transportation act reauthorization, so it includes funding for so-called “legacy” apportioned programs like CMAQ, STBG, NHPP, and others. While FHWA is still developing formal guidance and regulations, the agency released a policy memo titled “[Policy on Using Bipartisan Infrastructure Law Resources to Build a Better America](#)” that provides interim guidance and an indication of what the formal guidance might include.⁹⁴ This new guidance may provide an opportunity for MDOT, MPOs, and other eligible agencies to reevaluate funding priorities and criteria for funded projects.

“Under this Policy, FHWA will work with recipients of any Federal funds made available under title 23, United States Code to encourage and prioritize the repair, rehabilitation, reconstruction, replacement, and maintenance of existing transportation infrastructure, especially the incorporation of safety, accessibility, multimodal, and resilience features. Projects to be prioritized include those that maximize the existing right-of-way for accommodation of non-motorized modes and transit options that increase safety, accessibility, and/or connectivity.”

- FHWA Policy on Using Bipartisan Infrastructure Law Resources to Build a Better America

It remains to be seen whether FHWA will promulgate binding regulations that would require state DOTs and MPOs to make changes to their project selection criteria for STBG, CMAQ, and other programs, or if the agency will merely release guidance that

encourages new prioritization frameworks. Initial IIJA outreach materials from FHWA indicate that agencies will now be able to use CMAQ funds for operating expenses in certain areas – with no time limitation.⁹⁵ To address environmental justice concerns, CMAQ-funded projects aimed at reducing PM2.5 emissions will also be required, “to the maximum extent practicable,” to prioritize “disadvantaged communities or low-income populations.”⁹⁶

MDOT, MPOs, and advocates can continue to monitor pending FHWA guidelines. For example, when proposing a project that adds single-occupancy vehicle capacity, the FHWA guidance document states that it will “implement policies and undertake actions to encourage — and where permitted by law, require — recipients of federal highway funding to select projects that improve the condition and safety of existing transportation infrastructure within the right-of-way before advancing projects that add new general purpose travel lanes serving single-occupancy vehicles.”⁹⁷ This might include an evaluation whether a transit project or operational improvements might be more cost effective; however, it is currently unclear if agencies will be required to incorporate this analysis.

With the passage of IIJA, MDOT and local agencies are expecting a large influx of transportation dollars in the form of increased federal formula funding and new discretionary programs. For example, funding amounts from the Urbanized Area Formula program, the Formula Grants for Rural Areas, and the Bus and Bus Facilities program will all increase by 30 percent from fiscal year 2021 to fiscal year 2022.⁹⁸ OPT has expressed concern that if Michigan agencies are awarded significantly large amounts of discretionary funding, MDOT might not be able to provide the full 20 percent match for federally-funded transit capital projects through the CTF as they historically have done.⁹⁹ Local agencies should be aware of the potential need to provide a local match, depending on funding availability.

TRANSPORTATION IMPROVEMENT PROGRAMS

In Michigan, 13 metropolitan planning organizations (MPOs) develop transportation improvement programs (TIPs) that promote the “safe and efficient development, management, and operation of surface transportation systems to serve the mobility needs of people and freight (including accessible pedestrian walkways and bicycle transportation facilities),” as well as “foster economic growth and development, while minimizing transportation-related fuel consumption and air pollution.”¹⁰⁰ TIPs are important indications of regional transportation needs that depend on federal and state funding. Each TIP lists all federal-aid and regionally significant road, highway, and transit projects within the MPO’s boundaries, whether under state or local jurisdiction.¹⁰¹ The amount of transit-related projects that are included in the TIP is largely dependent on the capital and operations needs of transit agencies over the four-year TIP period. Transit agencies themselves are responsible for internally prioritizing projects and submitting them to the MPO for inclusion.¹⁰² TIPs are also, therefore, indicators of transit agencies’ and MPOs’ abilities to pursue and obtain federal funding opportunities.

The TIP is developed every four years through a cooperative process involving MDOT, FHWA, FTA, county road agencies, cities, villages, and transit agencies.¹⁰³ MPOs are also required to develop and implement a public participation plan (PPP) that provides a “reasonable opportunity” for public comment on the TIP “at key decision points.”¹⁰⁴ Transit advocates can –

and do – participate in TIP processes as a way to voice their feedback about transit and highway projects. For example, a coalition of transportation, climate, and health organizations in Chicago submitted a letter to the Chicago Metropolitan Agency for Planning (CMAP) expressing concerns about arterial widening projects that were on the list of regionally significant projects in the long-range comprehensive plan update.¹⁰⁵

Though it has yet to happen in practice, federal highway projects could include transit components such as bus rapid transit lanes or bus shelters. According to practitioners in Southeast Michigan, there have been missed opportunities to include transit components in road projects.¹⁰⁶ Coordination between road agencies and transit agencies could help identify opportunities to leverage federal funding to improve roads and transit at the same time.

Since transit providers vary widely with the type and scale of assets, each transit agency must create individual Transit Asset Management (TAM) plans identifying assets and condition evaluation approaches that best fit their system. TAM plans track the asset conditions of rolling stock, equipment, and facilities while establishing routines for systematically managing operations, maintenance, and capital investments. The MPO coordinates with transit agencies to collect preliminary targets and uses them to set preliminary regional targets (see Table 6).


Table 6. SEMCOG Transit Asset Management Plan Targets

Asset Category	Performance Measure	2019 Target
Rolling Stock e.g., buses	Age: Percentage of revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)	20%
Rolling Stock e.g., buses	Age: Percentage of equipment that has met or exceeded their Useful Life Benchmark (ULB)	25%
Facilities e.g., administrative buildings and bus shelters	Condition: Percentage of facilities with a condition rating adequate or below on the FTA Transit Economic Requirements Model Scale	5%

Source: Adapted from Transportation Improvement Program (TIP) for Southeast Michigan, Fiscal Year 2020-2023

Transit projects in the TIP are typically seeking to replace buses or maintenance equipment, or upgrade facilities such as bus shelters. While these are crucial factors to maintaining a public transit system, they do little to push for expanded service or accessibility within a region. Automobile and highway transportation projects are associated with several more performance measures and criteria that tend to be more detailed and user-related, such as “Level of Travel Time Reliability of the Interstate.”¹⁰⁷ Projects are open to public input during the MPO’s public participation processes, which may also provide opportunities to request additional evaluation criteria and performance measures for transit users.

KEY POINTS OF THIS CHAPTER

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- At the federal level, the U.S. Department of Transportation (USDOT) administers a wide range of grants and programs through the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). Some funding sources are allocated by federally mandated formulas, with MPOs and transit agencies overseeing most project selection. Other federal sources are discretionary grant programs to which state and local agencies must submit grant applications, with varying degrees of success.
 - While MDOT supports local transit agencies by providing matching funds for federal awards and helping rural agencies access federal dollars, it largely defers to local agencies – including MPOs – on decisions about whether flexible federal highway funding should be used for transit.
 - Flexible and discretionary sources of funding provide an opportunity for Michigan to expand the total amount of funding available for public transit. However, our review suggests that Michigan has not vigorously pursued flexing funds from highway programs to transit while showing some success in competing for discretionary funding. Both sources of funding require high levels of coordination between local, regional, and state officials and a commitment of time and resources that tend to favor larger agencies with sufficient staff.
 - The Infrastructure Investment and Jobs Act (IIJA) presents Michigan with a significant opportunity to access additional transit funding from new and expanded federal funding sources. Funding amounts from some of the most impactful formula funding programs will all increase by 30 percent from fiscal year 2021 to fiscal year 2022 and new competitive grants will be available. Current and evolving federal agency guidance about the infrastructure law encourages agencies to prioritize transit and climate action, thus providing an opportunity for MDOT and others to reconsider project selection criteria.

ENDNOTES

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54. United States Government Accountability Office, "Flexible Funding Continues to Play a Role in Supporting State and Local Transportation Priorities."
55. Puentes, "Flexible Funding for Transit: Who Uses It?"; United States Government Accountability Office, "Flexible Funding Continues to Play a Role in Supporting State and Local Transportation Priorities."
56. United States Government Accountability Office, "Flexible Funding Continues to Play a Role in Supporting State and Local Transportation Priorities."
57. United States Government Accountability Office.
58. U.S. Department of Transportation Federal Highway Administration, "Congestion Mitigation and Air Quality Improvement (CMAQ) Program."
59. U.S. Department of Transportation Federal Highway Administration, "Transportation Conformity: A Basic Guide for State and Local Officials."
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62. Michigan Department of Transportation, "Michigan Department of Transportation CMAQ 2020 Program Guidance."
63. Michigan Department of Transportation.
64. Based on data provided directly by the Office of Passenger Transportation on March 25 and March 30, 2022.
65. Ashman, Interview By Catherine Kemp and Andrew Darwin; "Bipartisan Infrastructure Law - Congestion Mitigation and Air Quality (CMAQ) Improvement Program Fact Sheet."
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5

***COMPARING FUNDING
FOR PUBLIC TRANSIT IN
MICHIGAN TO OTHER STATES***



To better understand the potential practices that Michigan can adopt, it is important to look towards promising practices underway across the United States. This section reviews the strategies implemented in a series of peer states as well as those recommended by national transit organizations. The concepts in this section contextualize Michigan's current practices to help illustrate what opportunities are available for improvement. Identifying promising practices outside of Michigan can influence local change.

We examine Colorado, Minnesota, Pennsylvania, and Wisconsin as peer states to Michigan. Geographically, these states host similar climates, weather patterns, and topographical conditions. In terms of politics, Wisconsin, Minnesota, Colorado, Pennsylvania, and Michigan are all swing states that are similar in their ongoing struggles with making use of transportation options other than personal vehicles. These states, as well as the broader United States, have ongoing auto-oriented planning practices. These similarities make Colorado, Minnesota, Pennsylvania, and Wisconsin appropriate states to evaluate in conjunction with Michigan.

REVENUES OF STATE DOTs

Revenue sources are a key limiting factor in public transit funding. Comparing the various funding sources leveraged by peer states to Michigan’s revenue sources can reveal areas where funding is not reaching its full potential. Each state’s funding sources are analyzed to identify promising practices that could be applied in Michigan.

Table 7. State Department of Transportation Revenue Sources, Fiscal Year 2019

	Michigan (%)	Colorado (%)	Minnesota (%)	Pennsylvania (%)	Wisconsin (%)
Federal Funds	26.7	32.4	22.3	23.0	27.4
Taxes (Motor Fuel and Other Taxes)	67.4	14.4	46.4	41.5	38.3
Motor Vehicle Registration and Licensing Fees[†]	1.2	5.1	24.7	10.3	27.9
State General Fund/Bonds	–	10.1	2.8	3.0	–
Lease-Purchase Agreements[§]	–	26.3	–	–	–
Other[*]	4.8	11.6	3.7	22.1	6.4
Total: 100%					

Note: Not all states included the same funding source categories in financial reporting data. Authors have aggregated data from each state into the above set of categories. With the understanding that the categorization is inexact from one state to the next and that categories vary substantially from state to state, these categories represent the authors’ best estimate for allocating revenue sources.

Sources: Michigan Department of Transportation Annual Financial Report, Wisconsin Department of Transportation Budget Trends, Minnesota Department of Transportation Funds Forecast, Colorado Department of Transportation Final Budget Allocation Plan, Pennsylvania Department of Transportation Annual Report

[†] Colorado passed legislation in 2009 creating new fees including a Road Safety Surcharge, Late Registration Fee, Daily Vehicle Rental Fee, and Oversize/Overweight Vehicle Surcharge
[§] Colorado passed SB 17-267 in 2017 to allow lease-purchase agreements of various State properties totaling approximately \$2 billion over four years to provide funds for transportation infrastructure projects.
^{*} Other revenues include (by state): CO - Driver’s license fees, various fines, tolls, and excise taxes on aviation fuel; PA - Lottery, tolls

COLORADO

Like Michigan and other peer states, Colorado relies heavily on fuel taxes and registration fees for long-term transportation funding. The State has been forced to take creative steps to continue to support transportation, as the legislature has failed to increase fuel taxes from a rate of 22 cents per gallon since 1991.¹⁰⁸ Colorado's Funding Advancements for Surface Transportation and Economic Recovery (FASTER) legislation, passed in 2009, created new motor vehicle fees, fines, and surcharges to fund road, bridge, and public transit projects. These revenue sources include a road safety surcharge assessed on every vehicle (\$16-39, depending on vehicle type), a late registration fee (\$25 per month, up to \$100), a daily vehicle rental fee (\$2 per day), and a surcharge for oversize/overweight vehicle permits (\$15-400, depending on vehicle size, vehicle weight, and duration of permit).¹⁰⁹ More recent transportation budget challenges have required one-time infusions of resources from the General Fund (SB 18-001, SB 19-262) as well as lease-purchase agreements on public buildings that function similarly to transportation revenue bonds (SB 17-267).¹¹⁰ Because these one-off sources have been inconsistent from year to year, funding percentages by category have fluctuated over time.

Considering the challenges outlined above, Colorado has been actively working toward creating new legislation designed to provide long-term dedicated funding for transportation. SB 21-260, passed in June 2021, raises funds through fiscal year 2031-2032 via a variety of new mechanisms. These sources include a road usage fee applied to fuel purchases (increasing from two cents per gallon to eight cents per gallon by 2028), per-use fees for rideshare services and retail delivery, and increases to an existing electric vehicle registration fee that ramp up over time to encourage continued short-term adoption of EVs.¹¹¹ One-time revenues from the Federal Coronavirus State Fiscal Recovery Fund as well as a mix of one-time and annual revenues from the General Fund will also be transferred to various accounts dedicated to transportation investment.¹¹² The full legislative package is projected to raise \$5.4 billion for transportation over the ten years between 2022 and 2032.¹¹³

MINNESOTA

Instead of a singular transportation fund, Minnesota's funding system consists of six separate funds: the Highway User Tax Distribution Fund (HUTD), Trunk Highway Fund (TH), County State Aid Highway Fund (CSAH), Municipal State Aid Street Fund (MSAS), Transit Assistance Fund (TAF), and the State Airports Fund (SAF). Revenue collected through the Motor Vehicle Sales Tax (MVST) and the Motor Vehicle Lease Sales Tax (MVLST) are allocated directly to public transit spending.¹¹⁴ Under statute (Minn. Stat. 297B.09), at least 40 percent of the revenue generated by the MVST must be apportioned to the TAF.¹¹⁵ The other 60 percent of revenues are placed in the HUTD fund.¹¹⁶ The revenue apportioned to the TAF is then divided between metropolitan transit agencies and Greater Minnesota transit. Currently, 90 percent of the MVST revenue apportioned to the TAF is allocated to metropolitan transit by way of the Twin Cities MPO and 10 percent to Greater Minnesota transit by way of MnDOT, representing 36 percent and 4 percent of total MVST revenues respectively.¹¹⁷ Additionally, 38 percent of revenues generated by the MVLST are allocated to the TAF, specifically to fund Greater Minnesota transit.¹¹⁸ These allocations, established in statute, commit Minnesota to providing funding for public transit.

PENNSYLVANIA

Pennsylvania stands out among Michigan's peer states for its relatively high level of historical commitment to public transit services. The State maintains a Public Transportation Trust Fund (PTTF) of more than \$1.5 billion, representing roughly 17 percent of the PennDOT budget.¹¹⁹ The PTTF is funded primarily through revenue transfers from Pennsylvania Turnpike tolls, state sales tax, and revenues from the state lottery fund. Like other states, PennDOT's major overall revenue sources also include state fuel taxes, state licenses and fees, transfers from the state General Fund, and various federal sources.¹²⁰ In a relatively uncommon arrangement, agreements linked to Pennsylvania's Act 3 of 1997 flex \$25 million annually to transit projects, the vast majority of which is revenues from the Congestion Mitigation and Air Quality (CMAQ) program.¹²¹

Due to anticipated funding gaps for future transportation investments and services, PennDOT commissioned a study to better understand short-term and medium-term risks and opportunities for the State that was released in late 2021. The study reviewed a variety of potential funding options, including sales tax; personal income, real estate, and property taxes; fuel/gas taxes; other taxes and fees; road user charges; and tolling.¹²² Given the substantial near-term anticipated revenue shortfalls, the study sought to identify sources within PennDOT's purview (i.e., that would not require legislative changes) that could realistically be implemented within two to four years; only bridge tolling and conversion of high-occupancy vehicle (HOV) lanes to high-occupancy toll (HOT) lanes qualified under this definition.¹²³ PennDOT suggests that increases in various sales taxes (e.g., motor vehicle, cigarette, liquor, hotel) and personal income taxes or the implementation of mileage-based user fees and per-trip rideshare fees may be viable longer-term strategies to address funding gaps.¹²⁴

WISCONSIN

In 2014, the State of Wisconsin passed the Wisconsin Transportation Fund Amendment. This amendment prohibits the State from diverting funds generated by transportation away from transportation uses.¹²⁵ The funds at hand include highway fees, gas taxes, vehicle registration, driver's license fees, aviation taxes, and property taxes on rail property.¹²⁶ Prior to the 2014 Wisconsin Transportation Fund Amendment, funds generated by transportation were diverted to other sectors.¹²⁷ This amendment passed partially due to the grassroots campaign under the name of "Vote Yes for Transportation" that promoted a constitutionally-protected transportation fund.¹²⁸ One caveat regarding the Wisconsin Transportation Fund Amendment is its lack of clarity in transportation appropriations. The amendment maintains funding for all transportation modes within the state and does not specify the amount allocated to public transit.¹²⁹ Wisconsin is the only state that funds every mode of transportation through a singular transportation fund.¹³⁰ Additionally, Wisconsin does not apply any General Fund revenues to the Transportation Fund.¹³¹ This may further limit the funding available for public transit. Although Wisconsin has the highest fuel tax among Midwestern states, its overall transportation-related fees and taxes total to less than any other Midwestern state.¹³² Wisconsin's unique method for transportation funding likely limits the capability to prioritize funding for public transit.

In 2021, lawmakers voted to reduce state funding for city public transit systems by 50 percent over the following two years.¹³³ This state funding reduction will impact local transportation departments and those who rely on them. However, Governor Tony Evers will be providing Milwaukee and Madison with \$25 million federal dollars for the two cities to spend on public transit.¹³⁴ This \$25 million is shared among the two cities and excludes other smaller municipalities. These federal funds were generated through pandemic relief funding from the American Rescue Plan Act (ARPA).¹³⁵ Although these federal funds will not be provided on an indefinite basis and will not fill all of the funding gaps necessary for full public transit service in Milwaukee, it will reduce the harm that state funding cuts will cause in the short term. The Governor played a key role in providing transportation funds when local public transit systems were struggling. Understanding the capabilities of government officials and the federal funds on hand will broaden the list of possibilities for funding.

EXPENDITURES OF STATE DOTs

In order to determine if the funding strategies applied in other states are effective for promoting transit, it is necessary to calculate the proportion of funding allocated to public transit. This section provides a breakdown of state DOT expenditures related to transit as compared to expenditures on all other uses. These comparisons reveal the extent to which transit funding is prioritized in Michigan and its peer states.

Table 8. State Department of Transportation Expenditures, Fiscal Year 2019

	Michigan (%)	Colorado (%)	Minnesota (%)	Pennsylvania (%)	Wisconsin (%)
Transit	4.8	9.3	7.6	22.8	4.1
All Other Uses	95.2	90.7	92.4	77.2	95.9
Total: 100%					

Sources: Michigan Department of Transportation Annual Financial Report, Wisconsin Department of Transportation Budget Trends, Minnesota Department of Transportation Funds Forecast, Colorado Department of Transportation Final Budget Allocation Plan, Pennsylvania Department of Transportation Annual Report

Note: Per Minn. Stat. 297B.09, 36 percent of total Motor Vehicle Sales Tax (MVST) revenues are allocated to Twin Cities metropolitan transit and are not reflected in the overall MnDOT transit expenditures. This spending was included in this calculation. If it were not included, the percentage of MnDOT's transit expenditures would decrease to 3.4 percent. Expenditures categories vary widely for each state. This table represents a distillation of expenditures with a focus on transit.

COLORADO

Colorado's financial support for public transit has been limited historically, but recent legislative changes may provide opportunities for change. The State generally has not provided funding for local transit operations, though CDOT funds and manages several intercity bus routes via its Bustang service, which started in 2018.¹³⁶ CDOT also administers several suballocated programs funded by both federal and State resources, including a variety of transit grants. These programs provide \$5 million annually for local transit grants, which are funded from the State's FASTER revenues and require a 20 percent local match.¹³⁷ Another \$10 million of the State's FASTER funds are earmarked for statewide, interregional, and regional transit projects.¹³⁸ Past General Fund transfers have been allocated to the Multimodal Transportation Options Fund, with 85 percent designated for local projects and 15 percent for statewide projects, each with a one-to-one matching guideline.¹³⁹

Colorado leaders are beginning to recognize the importance of public transit as a tool to combat climate change, decrease roadway congestion, and improve accessibility, a reality reflected in its future funding priorities. Of the \$5.4 billion in transportation funding anticipated from the recent passage of SB 21-260, \$134 million is earmarked for the electrification of public transit buses, with an additional \$453 million dedicated to the Multimodal Mitigation and Options Fund (MMOF).¹⁴⁰ Importantly, these MMOF resources are eligible for use to support transit operations.¹⁴¹ On top of these funds, the State is also providing \$115 million for its Revitalizing Main Street program, which funds improvements to pedestrian and bicycle infrastructure so that those using non-motorized modes can connect more easily and safely to transit.¹⁴² Only about 55 percent of the SB 21-260 funding is ultimately dedicated to highway and road projects, which stands in stark contrast with more traditional transportation investment strategies.

MINNESOTA

Minnesota offers a variety of mechanisms to fund public transit. As previously mentioned, Minnesota has established in statute an allocation of the MVST that requires 40 percent of MVST revenues to be distributed to the Transit Assistance Fund (TAF).¹⁴³ Furthermore, 90 percent of the funds allocated to the TAF from the MVST are allocated to metropolitan transit agencies and 10 percent to Greater Minnesota transit.¹⁴⁴ In addition to ensuring that MVST funds are allocated to public transit, there are statewide grants that can provide supplementary funding for specific uses. First of all, Minnesota offers rural public transit operating grants that provide support for ongoing operations of transit service over the course of one year.¹⁴⁵ Although this grant only applies for one year, it may provide rural transit providers with necessary funding to fulfill daily needs. Governments or organizations that operate public transit services are eligible to apply for this grant that provides financial assistance throughout 2022. Minnesota DOT also offers Rural and Intercity Bus Operating Grants. This grant provides funding for capital planning and operations to meet local needs.¹⁴⁶ For bus replacement, there is a separate Public Transit Vehicle Replacement Grant, which provides financial assistance to public transit service providers who are in need of replacement vehicles.¹⁴⁷ These replacements may occur between 2021 and 2025.¹⁴⁸ Finally, if a municipality or service provider is interested in a larger-scale project, they may apply for the Transit Facility, Large Capital, and Technology Grant.¹⁴⁹ These grants support non-vehicle capital projects greater than \$5,000 to occur between 2024 and 2025.¹⁵⁰ It is clear that Minnesota provides a wide range of funding opportunities for public transit in addition to the allocations mandated through statute.

PENNSYLVANIA

Pennsylvania spends nearly a quarter of its transportation funding on public transit, which is a much higher proportion than many other states. Based on the passage of Act 89 in 2013, State funds for public transit are provided via a variety of mechanisms. Operating funding for local transit agencies is formula-based and requires at least a 15 percent local match (or 5 percentage points more than the previous year's local match amount, whichever is lower).¹⁵¹ While the State previously provided both formula-based and discretionary funds for transit capital projects, it has shifted all capital funding to a discretionary basis.¹⁵² The State also offers resources for "Programs of Statewide Significance," which include special projects for certain regions to better support people with disabilities via transit as well as capital funding to support community transportation and shared-ride services.¹⁵³

Pennsylvania's prioritization of non-automotive transportation is apparent in other provisions of Act 89 that are not directly linked to transit. The Act created a new State Multimodal Fund along with a Deputy Secretary for Multimodal Transportation responsible for transit, aviation, rail, and ports.¹⁵⁴ Roughly half of the resources committed to the Multimodal Fund are distributed at PennDOT's discretion,¹⁵⁵ and PennDOT administers a grant program requiring a 30 percent local match for these funds.¹⁵⁶ Multimodal Fund discretionary resources are eligible for projects that:

- Include coordination of local land use with existing transportation assets to benefit communities;
- Enhance pedestrian infrastructure like lighting, sidewalks, and safe streetscapes;
- Improve connectivity or utilization of existing transportation assets; or
- Are in some way related to transit-oriented development.

WISCONSIN

Although Wisconsin's transportation funds all derive from a singular fund, there are opportunities to expand funding for public transit. The Biennial Budget Highlights Document provides a list and description of the local aid programs. One program, titled the Transit Assistance Program, distributes funds to public transit and ride share operators.¹⁵⁷ This program provides an annual increase of 2.5 percent in funds for the Paratransit Aid program.¹⁵⁸ Additionally, the Transit Assistance Program provides a \$250,000 increase in funds for the Transportation Employment and Mobility program.¹⁵⁹

Wisconsin offers a variety of grants, both for general public transit operations and specialized programs. The general public transit grants include the State Urban Mass Transit Operating Assistance and the Rural Transit Assistance Program.¹⁶⁰ On the other hand, specialized grant programs have been created to reach marginalized communities including Indigenous, elderly, and disabled populations.¹⁶¹ These funding sources could potentially be utilized by local transit agencies to support their operations, which often assist disabled and elderly people. In light of the 50 percent reduction in state public transit expenditures that will be occurring over the next two years, municipalities in Wisconsin could make use of other funding opportunities through various transit programs.

KEY POINTS OF THIS CHAPTER

- Revenue-Related Lessons
 - Peer states are already formally planning to maintain the long-term financial capacity required to support transportation infrastructure in light of growing EV adoption that will reduce gas tax revenues.
 - States have a variety of fund structures for managing transportation revenues, with different funding sources following different flows. Michigan's peers with relatively stronger public transit systems had specific funds with revenue streams dedicated to public transit expenditures.
 - Unique taxes and fees levied for transportation uses in peer states include: road safety surcharges (CO), daily vehicle rental fees (CO, MN, PA), and per-use rideshare fees (CO).
 - Creative short-term revenue sources include lease-purchase agreements on public buildings (CO) and state lottery funds (PA). Several states are using ARPA funds to support transportation investments, but these do not represent dedicated, long-term revenue sources.
 - Governor support for public transit in peer states has catalyzed the use of short-term funding to address pressing needs using pandemic-related funding.
- Expenditure-Related Lessons
 - Consistent with other states, there is limited funding for operational expenses in Michigan, while grants are available for capital projects. Funding formulas can be compared across states to determine a formula that meets the needs of transit infrastructure.
 - Several states have initiatives designed to fund transit for groups with unique needs that are more likely to be reliant on transit, including the elderly and those with disabilities.
 - Multiple states have grant programs to make investments in transportation infrastructure as a means of economic development. While Michigan has a similar fund, it is restricted to facilitating automobile accessibility, whereas other states focus on interconnectivity of bike and pedestrian infrastructure with public transit.

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6

***CONNECTING CLIMATE
CHANGE & PUBLIC TRANSIT***

The State of Michigan has recently made major commitments to reduce greenhouse gas emissions and achieve carbon neutrality over the next few decades. Although the transportation sector is recognized as a significant contributor to statewide emissions, current initiatives from the State and the Michigan Department of Transportation (MDOT) are not actively seeking to invest in public transit as part of addressing climate change. Connecting these topics through specific targets, measures, and policies could help advance progress in both, for the benefit of both the State and Michigan residents. Planning efforts by peer states may offer models for establishing goals and strategies that effectively use public transit to address climate concerns.

CONTEXT: MICHIGAN HEALTHY CLIMATE PLAN

In September 2020, Governor Whitmer issued an executive order committing Michigan to “pursue at least a 26-28 percent reduction below 2005 levels in greenhouse gas emissions by 2025,” it also establishes the MI Healthy Climate Plan as a roadmap for the State’s climate action for 2050.¹⁶² The State of Michigan’s Department of Environment, Great Lakes, and Energy (EGLE) published a final version of the MI Healthy Climate Plan in April 2022. The plan commits the State of Michigan to achieving carbon neutrality by 2050.

Although Governor Whitmer’s original executive order does not mention the transportation sector’s role in meeting the State’s emissions reduction targets, the MI Healthy Climate Plan does so explicitly. Transportation is called out as a “key focus area” for 2022 to 2030, with assigned goals and commitments. In terms of electrifying the transportation sector, the plan calls for implementing “enough charging infrastructure to support two million electric vehicles on

Michigan roads by 2030,” including “50 percent of light-duty vehicle sales, 30 percent of medium- and heavy-duty vehicle sales, and 100 percent of public transit vehicles and school buses” sold in 2030.¹⁶³

In addition, the plan speaks to the need for expanded transit and targeted solutions for mobility insecurity by increasing access to public transit by 15 percent annually, while enhancing micro mobility, first- and last-mile transit options, and pedestrian and bicycle infrastructure.¹⁶⁴ The plan specifically demonstrates the importance of public transit:

“Almost 8 percent of Michigan households have no vehicle at all, and that number more than doubles to 19 percent for renters. Nearly three out of every five jobs cannot be reached by public transit, meaning that these opportunities are not equitably accessible to all Michigan families. This is particularly true for non-white households, which make up 79 percent of transit riders. Public transportation is also the best transportation option — and in some cases the only viable one — for many seniors and Michiganders with disabilities.”¹⁶⁵

– MI Healthy Climate Plan



However, while the plan highlights the need for more investment in public transit, it lacks concrete goals or commitments to execute its improvement or expansion around the state. Instead, it focuses much of its attention on transitioning vehicles and fleets to electric. In contrast, the Transportation and Mobility workgroup of the Council on Climate Solutions within EGLE published a report in October 2021 that provides five concrete recommendations for MDOT.¹⁶⁶ Although three of the recommendations relate to electric vehicles and clean fuels, two of them focus specifically on public transit:¹⁶⁷

- Developing greenhouse gas (GHG) budgets for transportation plans and prioritizing projects that will cut climate pollution – like expanding transit
- Increasing the State’s investment in public transit by an amount great enough to support the mobility needs of the state’s residents

VEHICLE ELECTRIFICATION AND IMPLICATIONS IN MICHIGAN

As detailed previously, MI Healthy Climate Plan puts a heavy emphasis on vehicle electrification as a means of reducing transportation sector emissions. Along with these plans, recent national and statewide trends in electrification demonstrate public sector interest in and commitment to investing in transportation to address climate change. The combined economic and environmental case for electrification of public bus fleets is compelling and offers an avenue by which Michigan can address climate concerns while also investing in public transit.

GLOBAL BUS ELECTRIFICATION TRENDS

A push towards vehicle electrification has led to exponential growth of the electric bus fleet globally in the past few years. In fact, a report by Bloomberg New Energy Finance (BNEF) found that the electric bus fleet had grown about 32 percent in 2018 alone, representing the fastest-growing part of the electric vehicle market.¹⁶⁸ In North America, the electric bus market is predicted to see a Compounded Annual Growth Rate (CAGR) of about 27 percent between 2020 and 2025.¹⁶⁹ The majority of electric bus projects in the United States have been funded by the federal government through the Low or No Emission bus grant program.¹⁷⁰ As mentioned, in 2021 MDOT received over \$5 million from the Low or No Emission bus grant program on behalf of Thumb Area Transit in Huron County to replace an aging transit facility and maintain its new battery-electric bus fleet, including electric bus charging infrastructure.¹⁷¹

Although upfront capital costs remain much higher than for conventional internal combustion engine (ICE) buses, most of the literature globally points to the total cost of ownership becoming lower as time goes on due to savings from more efficient energy consumption and reduced maintenance.¹⁷² High upfront costs are mainly due to expensive battery prices and the need for charging facilities, while total costs are also increased by the need for disposal and recycling of batteries as well as the need for charging infrastructure.¹⁷³ However, electric bus life cycles extend six years longer than that of diesel buses.¹⁷⁴ This allows for financial savings through longer lasting buses on top of the savings on fuel costs.

In terms of benefits, reducing local and global emissions are the single biggest positive impact cities could see from transitioning their buses to electric. Electric buses produce significantly lower greenhouse gas emissions than diesel, diesel hybrid, and natural gas-powered buses. In fact, Environment America finds that

“replacing all of the country’s diesel-powered transit buses with electric buses could eliminate more than two million tons of greenhouse gas emissions each year,” significantly improving air quality of local communities and reducing climate change impacts.¹⁷⁵

ELECTRIFICATION IN MICHIGAN

The State of Michigan has addressed electrification in a variety of ways in recent years. The MI Healthy Climate Plan cites electrification as a potential economic development opportunity through job creation.¹⁷⁶ The plan discusses a statewide fleet transition to zero-emission vehicles by 2035 for light-duty vehicles and 2045 for medium- and heavy-duty vehicles.¹⁷⁷ Furthermore, the plan includes a goal that 100 percent of public transit vehicle sales be electric vehicles by 2030.¹⁷⁸ Michigan’s Response to Electrify America’s Zero Emission Vehicle (ZEV) Investment Plan also details goals of increasing the visibility of electrification technologies by establishing an all-electric mass transit system.¹⁷⁹

Michigan has the opportunity to be at the forefront of electrified transportation if applying it to the state’s public transit fleets. One way to promote this shift would be through offering grants for electrification. Other states that are focused on electrifying their transportation sectors are creating grants or incentives for electric vehicles.¹⁸⁰ For example, California’s Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project provides support for purchases of lower-emissions vehicles.¹⁸¹ Incorporating incentives or grants can make the transition to electric vehicles more attractive and affordable for transit operators.

THE NEED FOR CLIMATE-RELATED TRANSIT PERFORMANCE METRICS

The ability to maximize federal support for lowering carbon emissions will largely depend on the State’s efforts to measure, track, and commit to reducing emissions in transportation. Although the MI Healthy Climate Plan has time-bound and clearly defined indicators of success for vehicle electrification, it lacks such indicators for other modes of public transit that would further similar goals. Meanwhile, the Michigan Mobility 2045 Plan states a commitment to “reducing the proportion of single-occupancy passenger vehicle trips by enabling alternative modes of travel” through policy, without making it clear which policies or performance measures will be used to enact such change.¹⁸² In order to meet statewide goals for both climate change and multimodal transportation, Michigan needs a well-coordinated strategy establishing specific and quantifiable measures for reducing carbon emissions in transportation. Such a strategy will not come to fruition or bring about meaningful changes without clearer performance measures and goals.

MDOT currently collects data to report on the following public transit performance indicators for each transit agency in Michigan:¹⁸³

- **Total passengers**
- **Total eligible expense**
- **Total miles**
- **Total vehicle hours**
- **Cost/passenger**
- **Cost/mile**
- **Cost/hour**
- **Passenger/vehicle hour**
- **Passenger/vehicle mile**

The current focus on electrification technologies and goals is limiting the State's scope for advancing transportation technologies and climate change initiatives in Michigan. Implementing technologies to collect data on detailed, passenger- and climate-related performance metrics for public transit has substantial benefits for both the transit-riding public and planning organizations. According to a report sponsored by the National Cooperative Highway Research Program (NCHRP), potential benefits include greater "correlation between agency goals and those desired by the users and general public," opportunities for improving "accountability and reporting on performance and results to external or higher-level entities," and "informed decision-making by governing boards or bodies".¹⁸⁴



In 2011, the NCHRP released “A Guidebook for Sustainability Performance Measurement for Transportation Agencies” to aid transit agencies seeking information and resources to “implement and evaluate sustainability”.¹⁸⁵ The report offers guidelines for state DOTs and MPOs incorporating sustainability into short- and long-range planning through goals and performance measures. It recognizes the importance of how transit agencies define sustainability goals and the metrics tracking progress towards those objectives. Given the broad set of transportation actors – from government entities to advocacy organizations to transit agencies – sustainability performance measures are needed to support the work and coordination of different agencies and provide insight into overall progress.¹⁸⁶ Some recommended performance measures include:¹⁸⁷

- **Change in trips, vehicle trips, vehicle miles traveled (VMT), percent non-driver, tons of emissions per day**
- **Change in route or service miles of transit routes, population within 1 mile of transit**
- **Percent of maintenance equipment at each tier of emissions standards**
- **Percent of maintenance equipment retrofitted to meet latest EPA standards**

In order to collect data in the most effective and informative manner for advancing Michigan’s climate goals, MDOT, MPOs, and transit agencies need well-defined, time-bound goals for the transportation sector. Having MDOT staff members in either OPT or the Bureau of Transportation Planning that are experienced in tracking and reducing transportation emissions could help align decision-making and planning processes to meet the state’s commitments.

ADDRESSING CLIMATE CHANGE THROUGH PLANNING, POLICY, & FUNDING: LEARNING FROM PEER STATES

Peer jurisdictions for Michigan have undertaken a variety of planning strategies that illustrate effective ways to align efforts improving public transit and the pressing challenges of climate change. Model governments establish clear goals related to emissions reductions, fund initiatives in support of achieving emissions goals, and develop organizations and tools to track and evaluate performance against those goals. The following miniature case studies provide a high-level overview of efforts by other states to advocate for and implement public transit improvements as a useful instrument in addressing climate change.

COLORADO

GOALS: Considerable alignment across the branches of government and support from the broader public in Colorado have enabled the State to formulate a strong climate mitigation plan and codify it into law. Colorado’s Climate Action Plan to Reduce Pollution (HB 19-1261) was enacted in 2019, setting statewide goals to reduce greenhouse gas (GHG) emissions by 26 percent by 2025, 50 percent by 2030, and 90 percent by 2050 relative to emissions levels in 2005.¹⁸⁸ Transportation was identified as the sector contributing the most to emissions in the State’s subsequent Greenhouse Gas Pollution Reduction Roadmap, and while studies indicated that meeting the targets outlined by HB 19-1261 was feasible, doing so would require additional action.¹⁸⁹ Colorado consequently proposed several aggressive transportation-related rules in its pollution reduction roadmap that have been adopted, have been authorized, or were still under consideration by the legislature as of 2022:

▶ ***Transportation Commission Rule on pollution reduction planning:***

Under this rule adopted by the State Transportation Commission in 2021, the five Colorado MPOs and the Colorado Department of Transportation (CDOT) are required to meet specified GHG emissions reduction targets in 2025, 2030, 2035, and 2040. Regionally significant projects proposed by MPOs and CDOT must be reviewed and modeled to ensure that the projects contribute toward GHG emissions reduction goals. Where modeled projects do not reduce GHG emissions, funding for the following mitigation measures will be considered as alternatives:

- Addition of transit resources (namely infrastructure, service, and funding)
- Improvement of pedestrian and bike access and resources
- Emissions reductions on construction projects
- Encouragement of equitable transit-oriented development
- Improvement of first and last mile connections to transit
- Encouragement of more efficient vertical land use and parking

If CDOT or an MPO cannot demonstrate that target reduction levels are met even after factoring in mitigation measures, state and federal funds received by the entity in question must be used on projects that are projected to reduce GHG emissions.¹⁹⁰

▶ ***Employee Trip Reduction Program:***

This program encourages and incentivizes businesses and employers to offer options to make it easier for employees to reduce single-occupancy vehicle commuting (e.g., telecommuting)¹⁹¹

▶ ***Incentives for purchase of electric cars, trucks, and buses***

▶ ***Incentives for land use decisions by local governments that reduce VMT and GHG emissions***

ORGANIZATION: CDOT has recently adjusted its organizational model and hiring processes to better align its workforce with environmental goals and to increase emphasis on non-car modes of transportation.¹⁹² Some key highlights include the following:

- CDOT established the Office of Innovative Mobility (OIM) in 2019 to integrate multimodal efforts through the Division of Transit and Rail with plans supporting infrastructure for electrification and zero-emission vehicles. The OIM reports directly to the Executive Director of CDOT.
- The Division of Transportation Development (which focuses on planning, modeling, and research) has instituted a state-of-the-art air quality monitoring program while hiring GHG specialists and an expert in community partnership and engagement.
- Several CDOT regional offices have hired multimodal transportation specialists to support multimodal project planning and implementation.

TOOLS: CDOT has also developed new tools to support its personnel in pursuing the climate goals outlined above. Major initiatives include the following:¹⁹³

- CDOT has developed a transit emissions dashboard showing GHG emissions benefits from increased ridership and electrification of transit vehicles.
- CDOT is implementing modeling for air quality, PM2.5, and induced demand on major projects currently underway and expects to include these factors in future project reviews prior to approval.
- CDOT is developing a new statewide travel model using an activity-based framework, which allows for the inclusion of factors like induced demand and the benefits of active transportation in project evaluation.

MINNESOTA

GOALS: Minnesota’s climate change mitigation strategies originated with its passage of the Next Generation Energy Act in 2007, which set statewide goals of reducing GHG emissions across all sectors, including transportation. Statewide targets for emissions reductions relative to 2005 levels were 15 percent by 2015, 30 percent by 2025, and 80 percent by 2050.¹⁹⁴ Minnesota has since accelerated its goals to aim for a 45 percent reduction in annual emissions by 2030, with specific transportation initiatives to build out bus rapid transit and passenger rail systems to connect more people across the state with mass transit options and reduce car dependency.¹⁹⁵

In light of these targets, the statute governing the Minnesota Department of Transportation (MnDOT) enumerates 16 goals for the organization, including several specifically related to advancing sustainability and public health.¹⁹⁶ Increasing the share of trips taken using public transit, reducing GHG emissions, and ensuring that transportation planning is consistent with State environmental and energy goals are all mentioned directly. To monitor progress toward these overarching aims, MnDOT reports annually on a series of metrics that align with the priorities established in its annual strategic plan.¹⁹⁷ MnDOT priorities (with sample metrics and targets) include the following as of Spring 2022 (bold denotes a close linkage to public transit):

▶ *Reducing transportation carbon pollution*

- Transportation sector GHG emissions (30 percent reduction from 2005 levels by 2025)
- **Vehicle miles traveled** (target TBD)
- Electric vehicles as percentage of total light-duty vehicles (20 percent by 2030)

▶ *Leading by example through MnDOT sustainability efforts*

- Facilities GHG emissions (30 percent reduction from 2005 levels by 2025)
- Facilities renewable energy use (25 percent of MnDOT energy use by 2025)
- Water consumption (15 percent reduction from 2017 levels by 2025)
- Fleet GHG emissions (30 percent reduction from 2005 levels by 2025)
- Fleet electric vehicles (100 percent transition of MnDOT sedans and SUVs to zero-emission vehicles by 2030)
- Salt use (100 percent or less of decision model recommendation)
- MnDOT construction project GHG emissions (30 percent reduction from 2018 levels by 2025)

► *Supporting transportation that improves public health for all Minnesotans*

- **Complete streets** (90 percent of projects with identified need include bicycling improvements)
- **Frequency of biking/walking** (Increase percentage of people biking/walking a few times per week to 60 percent)
- **Transit trips** (At least 145-150 million boardings in Twin Cities by 2030; 17 million in Greater Minnesota by 2025)
- ADA curb ramp/sidewalk compliance (100 percent)
- Serious injuries and fatalities (<980 injuries, <225 fatalities by 2025)

► *Improving resilience of the transportation system*

- Culvert condition (<10 percent of state-owned culverts in poor or severe condition)
- Bridge condition (<2 percent of National Highway System bridges in poor condition)

ORGANIZATION: The generation of climate targets and associated plans to achieve them is facilitated by recent changes to Minnesota’s transportation governance structure. Several groups are influential in crafting the State’s environmental and sustainability policy related to transportation:

■ *Sustainability and Public Health Division (SPHD):*

MnDOT created the SPHD in 2019 to lead statewide public health efforts in transportation. This group reflects the nexus of transportation, climate change, and environmental justice, as goals and initiatives related to all three are closely intertwined.¹⁹⁸ This group is responsible for reporting on sustainability goals and initiatives (as outlined above), building tools and resources for MnDOT to incorporate climate vulnerability into decision-making, and coordinating action with other relevant stakeholders.¹⁹⁹

■ *Sustainable Transportation Steering Committee (STSC):*

The STSC is an internal MnDOT group created in 2016 to provide leadership, strategic direction, and oversight for high-priority natural resource issues and agency-wide environmental sustainability agency activities, including greenhouse gas mitigation, climate adaptation, and promoting public health and healthy communities.²⁰⁰ The STSC helps identify sustainable transportation priorities and performance indicators and facilitates agency wide understanding of and adherence to sustainable transportation policies, guidance, and direction.²⁰¹

■ **Sustainable Transportation Advisory Council (STAC):**

Because Minnesota was not on track to meet its transportation emissions reduction goals for 2025 and 2050, MnDOT established the STAC in mid-2020.²⁰² The STAC is an external organization responsible for making recommendations to the MnDOT Commissioner to help the agency reduce carbon pollution from transportation, with a specific focus on equity and environmental justice.²⁰³ The council is composed of roughly 17 appointees made by the MnDOT Commissioner along with ex-officio members from partner agencies (e.g., Xcel Energy) and the legislature.²⁰⁴ As an example of the type of work the STAC does, it advocated for a policy in 2021 that would require VMT reduction for all MnDOT-led projects and prioritize evaluation of alternatives that could meet VMT reduction goals via enhanced infrastructure for public transit and active transportation modes.²⁰⁵

TOOLS: MnDOT and partners have developed several useful tools to help decision-makers and the public evaluate data relevant to climate concerns:

- The MinnesotaGo Performance Dashboard displays key data by topic, including environmental impact²⁰⁶ and transit.²⁰⁷
- The Infrastructure Carbon Estimator (ICE) and Minnesota Infrastructure Carbon Estimator (MICE) are software tools developed by FHWA, Minnesota, and several other states to quantify GHG emissions for incorporation in the environmental review process for transportation-related projects.²⁰⁸ MnDOT began quantifying GHG emissions as part of its environmental review process in 2020.²⁰⁹

PENNSYLVANIA

GOALS: Pennsylvania's plans to address climate change are more modest than those of Minnesota and Colorado, but the State's goals still reflect the potential of public transit as a tool to address environmental degradation. The passage of the Pennsylvania Climate Change Act in 2008 committed the State to produce an inventory of GHG emissions and a recommended climate action plan every three years.²¹⁰ Based on these inventories and plans, Governor Tom Wolfe's Executive Order 2019-01 set targets of a 26 percent reduction in emissions by 2025 and 80 percent reduction by 2050 relative to 2005 levels.²¹¹ The 2021 Pennsylvania Climate Action Plan outlines pathways to achieving these targets, which include reductions in transportation-related emissions of approximately 24 percent and 76 percent relative to 2005 levels by 2025 and 2050, respectively.²¹² The plan lays out four strategic goals related to the transportation sector to reduce GHG emissions to the degree required by the plan, with trackable metrics for each:

▶ ***Increase fuel efficiency of all light-duty vehicles and reduce vehicle miles traveled for single-occupancy vehicles***

- VMT reduction: 3.4 percent by 2030, 7.5 percent by 2050²¹³
- Fuel efficiency: 20 percent increase between 2026 and 2050²¹⁴

▶ ***Implement the multistate medium- and heavy-duty zero-emission vehicle memorandum of understanding***

- 30 percent of new vehicle sales by 2030, 100 percent by 2050²¹⁵

▶ ***Increase adoption of light-duty electric vehicles***

- 20 percent of vehicle share by 2030, 70 percent by 2050²¹⁶

▶ ***Implement a low carbon fuels standard (LCFS)***

- 12 percent reduction in carbon intensity by 2030, 22 percent reduction by 2040²¹⁷

Two of Pennsylvania's transportation goals have specific links to public transit. Potential policies geared toward reducing VMT for single-occupancy vehicles mentioned in the plan include increasing public transit options and frequency of service, creating bus-only or shared bus and bike lanes, offering bike share or other last-mile services to increase the appeal of using public transit, and implementing land use and development policies that promote transit and active transportation modes in densely populated urban areas.²¹⁸ The adoption of the medium- and heavy-duty zero-emission vehicle memorandum of understanding assumes eventual electrification of transit buses, noting that this process is already underway across the country.²¹⁹ In addition to climate-related benefits, the plan also notes the public health and equity implications of these policies in terms of increased exercise opportunities, greater safety from vehicle crashes, increased accessibility for low- and moderate-income individuals, and reduced risk of health complications in communities near highways and commercial or industrial areas (which have a disproportionate number of BIPOC individuals and families).²²⁰

ORGANIZATION & TOOLS: Pennsylvania does not appear to have made changes to organizational structure or data tracking related to the link between climate and transportation. Given that the State believes its 2050 goals will require considerably more effort to achieve than its 2025 goals, it is possible that future adjustments within PennDOT and the broader executive branch may be required.

WISCONSIN

GOALS: Wisconsin's climate goals are especially salient for Michigan, as the states appear to be on similar timelines for ramping up climate action planning and policy making. Governor Tony Evers signed Executive Order 38 in 2019 setting a goal for all of the state's electricity to be produced using carbon-free sources by 2050 and affirming the State's commitment to achieving emissions reductions necessary to meet the 2015 Paris Climate Accord goals.²²¹ Shortly thereafter, the State established a Governor's Task Force on Climate Change by executive order, which issued a report in 2020 outlining pathways for Wisconsin to move toward carbon neutrality and environmental justice. The report includes four key strategies with action items related to the transportation sector:²²²

▶ ***Audit transportation planning and development from climate and environmental justice perspectives***

- Analyze and report carbon emission and environmental justice impacts associated with transportation projects and assets, including effects on VMT, transportation-related carbon emissions, and climate resilience

▶ ***Promote public transit and green public transit***

- Increase public transit funding via State budget
- Allow municipalities and regions to effectively coordinate and fund public transit systems
- Develop regional public transit plans
- Promote construction and use of high-speed rail and other long-distance public transit

▶ ***Support hybrid electric vehicles, electric vehicles, and associated infrastructure***

- Develop a plan that enables construction of cost-effective charging infrastructure and creates incentives for rapid EV adoption
- Ensure planning includes input from all key stakeholders and has a special focus on underserved areas (e.g., rural areas, lower-income urban areas)

► *Create safe, clean, and complete streets*

- Require the Wisconsin Department of Transportation (WisDOT) to incorporate Complete Street designs in all state roadway projects
- Restore eminent domain acquisition for pedestrian and bike trails
- Increase state funding for the Transportation Alternatives Program and direct a portion of funds to under-resourced communities and environmental justice communities
- Provide funding for bicycle programs and bike infrastructure in low-income communities

While these strategies do not set explicit targets or timelines for reducing emissions, improving public transit options, increasing EV adoption, or building out complete streets, they demonstrate clear encouragement for the study and creation of such goals.

WisDOT offered a section with high level goals related to balancing transportation needs with those of the environment in its Connect 2050 Plan draft released in December 2021. This section includes five objectives:²²³

- Develop a transportation system that avoids, minimizes, and compensates for environmental impacts
- Prioritize emissions reduction and alternative fuels to improve air quality
- Reduce waste and recycle materials during transportation projects
- Consider cultural, socioeconomic, and historic resources during the project development process
- Foster a safe and environmentally sensitive transportation system

Like the Governor’s Task Force on Climate Change report, the Connect 2050 Plan does not offer specific targets to achieve in pursuit of its objectives.

ORGANIZATION: In addition to setting high level goals related to the environment, Wisconsin’s Executive Order 38 also established the Office of Sustainability and Clean Energy (OSCE) to lead the State’s carbon reduction efforts.²²⁴ The OSCE is currently in the process of creating a Clean Energy Plan that addresses the environmental, economic, and social challenges inherent in transitioning to a clean energy economy and mitigating climate change.²²⁵ Transportation is included on the list of sectors that the plan will address, and OSCE is working with WisDOT in formulating its recommendations.²²⁶

TOOLS: Wisconsin does not appear to have developed new tools relevant to linking public transit with climate change. To achieve the goals outlined in its various plans, the State and WisDOT may be required to create such tools.

KEY POINTS OF THIS CHAPTER

- Although the transportation sector is recognized as a significant contributor to statewide emissions, current initiatives from the State and MDOT lack specific goals and commitments to actively invest in public transit as a strategy to address climate change.
- The combined economic and environmental case for electrification of public bus fleets is compelling and offers an avenue by which Michigan can address climate concerns while also investing in public transit. However, electrification should work in conjunction with public transit improvements.
- States that have had success in linking transit to climate change have strong alignment in terms of stated goals, organizational structures, and the tools used to analyze policies.
- Other states and state DOTs have established well-defined, time-bound goals and performance metrics for the transportation sector, particularly in relation to climate impacts (with personnel and tools to support effective analysis). These are all lessons that could be useful for the State of Michigan as it seeks to reach ambitious climate commitments.

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7

***PROMISING STRATEGIES
AS COMPILED BY NATIONAL
TRANSIT ORGANIZATIONS***

National organizations like the National Association of City Transportation Officials (NACTO) and the American Association of State Highway and Transportation Officials (AASHTO) conducting research on public transit have found many promising practices for maximizing financial and administrative support for public transit. In particular, as federal funding opportunities grow for transit, agencies at multiple levels should consider ways to make their processes as effective and efficient as possible. The following practices identify ways to increase the impacts of funding at local levels, adjust planning and decision-making processes, and serve the public through transit service and metrics.

HELPING FEDERAL FUNDING WORK BETTER AT THE LOCAL LEVEL

The Infrastructure Investment and Jobs Act (IIJA) contains provisions that would enable greater localized control over street projects that could benefit public transit expansion. For example, Section 11129 of IIJA grants cities authority to apply an approved design guide of their choice to federally funded projects on locally owned streets. When states administer federal funds to cities, they are neither required nor permitted to require cities to comply with state design standards or safety policy.²²⁷ Section 11206 requires MPOs to use 2.5 percent of their overall funding to develop and adopt complete streets policies, active transportation plans, transit access plans, transit-oriented development plans, or regional intercity rail plans. States must reserve 2.5 percent of State Planning and Research funds for the same purposes, though these policies do not have to be included in state or MPO spending plans.²²⁸ In addition to these provisions, IIJA's discretionary grant programs – such as Transit State of Good Repair grants, Rail Vehicle Replacement grants, and Low or No Emissions Bus Grants – could further transit goals in Michigan. The majority of the bill's funding will flow directly to state

transportation departments. These provisions and grant programs indicate the federal government's interest in enabling cities' efforts to upgrade their local public transit systems using federal dollars.

However, there remain significant challenges to utilizing federal funding more effectively at the city or MPO level, despite local demand. The following challenges, identified by Transportation for America, indicate a greater need for state-level technical assistance and streamlining for project delivery:

- ***Repetitive state-level reviews:***

City-initiated projects often undergo excessive, time-consuming reviews from state DOTs who control their funding. Transit projects are often among the most targeted, and typically do not undergo significant or positive changes despite intensive reviews.²²⁹ Cities cannot move a federally funded project forward without state DOT approval, even after meeting all FHWA requirements.²³⁰

- ***Transportation and infrastructure projects that generate few jobs and little economic activity:***

Because highway construction is highly mechanized, large multi-state companies can carry out projects with fewer local hires and no guarantees that any money will be reinvested in the community. In contrast, city transportation projects (such as adding paint or changing a curb line) typically employ crews of local residents, who spend money in local businesses, pay local taxes, and will ultimately be part of the transportation systems they help establish.²³¹

- ***Lack of city concurrence:***

State DOTs often withhold a significant portion of metropolitan area formula funding for their own projects, with little or no input from the jurisdictions the projects are in. This results in states spending sub-allocated funds on projects that conflict with local priorities.²³²

- **Lack of technical assistance from the State:**
The current absence of capacity-building expertise extended to cities limits their abilities to independently administer federal funding or projects with greater control.²³³

DOT & AGENCY STRUCTURE

The National Association of City Transportation Officials (NACTO) identifies a number of structural themes among state DOTs and transit agencies that tend to correlate with more effective project delivery. These are especially important considerations for taking greater advantage of new funding sources and addressing project-inhibiting processes. In general, NACTO finds that successful organizations have:

- **Defined and clear processes for implementation, and staff that understand their roles and responsibilities:**
Developing a clear process for project approvals, changes, and hand-offs, and creating opportunities for staff to meet early and often regarding projects can support well-defined implementation processes and responsibilities.²³⁴
- **Recurring or guaranteed funding sources so that staff spend less time chasing grants, and more time actually implementing:**
Consolidating grant management separately from project implementation and seeking private sector funding in the absence of consistent funding will enable staff to focus more on project delivery.²³⁵

- **A clear vision, strong political will, and defined time for what success means from individual projects to overall programs:**

Using time bound, direct output metrics and developing project measurement tools can shape the public process by quantifying project changes and benefits.²³⁶

TRANSIT PERFORMANCE METRICS

NACTO finds that cities that succeed at implementing transit improvements, and make their streets safer and more efficient for people, prioritize collecting and leveraging data that emphasizes rider experience and service quality.²³⁷ Effective performance metrics reflect the daily experience of transit riders, in addition to the needs and priorities of the state or local DOT. While every agency has an embedded set of practices for performance reporting, many stop at collecting standardized, vehicle-based data points that miss many of the most pressing needs for transit riders.²³⁸ Metrics can be re-evaluated and re-focused to prioritize mobility and accessibility surrounding transit, shifting the perspective to people and their movements rather than car traffic. New metrics also allow agencies to tell a better story about their public transit systems, even by simply using existing data in new ways.²³⁹ With increased availability and deployment of technology in transportation, data can be collected in ways that bring clearer targets and avenues for system improvements that benefit the people using them.

A report sponsored by the National Cooperative Highway Research Program (NCHRP) identifies the following best practices for state DOT use of transit performance measures:²⁴⁰

- Choose transit performance measures that can be **consistently evaluated over time**
- Select **measures that are meaningful** to the type of transit service being provided and the purpose of the transit service
- Choose measures that **show progress toward goals**
- **Seek input** from other state DOTs, transit agencies, and other partners when identifying measures
- Develop **data partnerships** with these entities
- Make use of **national research and studies** when identifying measures
- **Cooperate and coordinate** with transit agencies
- Use performance measures to **support qualitative evaluations** – either formally or informally
- Consider **hiring a staff person** to focus on performance measurement
- Tie transit performance measurement to **funding decisions**



STATE REVENUES & TRANSIT FUNDING

The American Association of State Highway and Transportation Officials (AASHTO) provides notable examples of advancing transit funding at the state level from across the nation:

- ***Mileage-based user fees:***

Several states – including Michigan – have shown a growing interest in charging drivers based on the number of miles they drive, rather than the gallons of fuel they consume. In 2015, Oregon launched the nation’s first real road usage charge program OReGO, designed to collect 1.5 cents per mile from up to 5,000 cars and light commercial vehicles and deposit the revenues in the state’s highway fund. The program has since been increased to 1.9 cents per mile, and is now open to an unlimited number of participants.²⁴¹ The federal FAST Act also created a \$95 million grant program for states to “demonstrate user-based alternative revenue mechanisms that utilize a user fee structure to maintain the long-term solvency of the Highway Trust Fund,” which may aid states in further exploring the potential of mileage-based fees instead of relying on diminishing motor fuel taxes.²⁴²

- **“Lockbox”**

AAs in Michigan, state law does not always prevent the diversion of transportation revenues to other areas of the budget. In order to protect funding for multimodal transportation, voters in Maryland and Wisconsin approved constitutional protections that establish “lockbox” measures on those funds. Legislatures in Connecticut, Delaware, and Illinois have also taken steps in this direction.²⁴³ The state is one of the only levels of authority that can take such measures to ensure that fewer or no earmarks and diversions are taking away revenue from alternative modes of transportation.

- **Cost savings in contract clauses**

Ohio law allows for contract clauses by which a contractor may propose a project change that, without impairing the project’s essential functions and characteristics, saves the DOT time or money. If the proposal is adopted, at least half the resulting savings must go to the contractor. In Oregon, competitive bidding must be used for public improvement contracts, but the director of transportation may exempt projects from this requirement if an alternative method results in cost savings or other public benefits.²⁴⁴ If states can offer these types of options to local and regional projects related to transit and multimodal infrastructure, it may add greater incentives for contractors and others to pursue transportation projects that save the DOT money and demonstrate more public benefits.

- **State formula or discretionary programs for transit:**

Some states allow their state aid formula distributions to be used for public transit or other projects as well as roads, while several others have separate statutory formulas or discretionary grant programs dedicated to providing transit assistance. In Mississippi, statutorily established committees, with DOT involvement, award discretionary grants to local entities for rail, port, airport, and transit projects through the state’s Multi-Modal Transportation Improvement Program.²⁴⁵ Having dedicated and specified funding programs for non-road and non-automotive projects is more reliable than transportation funds that do not make such provisions.



KEY POINTS OF THIS CHAPTER

- In addition to funding programs, state departments of transportation and legislatures have important roles in shaping decision-making processes and final project delivery. These internal processes between the state and other agencies are also crucial to ensuring Michigan can effectively invest in public transit to the benefit of the public.
- Many agencies have embedded practices for performance reporting that stops at collecting vehicle-based data points rather than rider-based data. Metrics can be re-evaluated to prioritize mobility and accessibility surrounding transit, shifting the perspective to people and their movements rather than traffic.
- Several states across the nation are passing laws that make greater protections and dedications for transit funding, and even offer ways to shift away from reliance on motor fuel taxes.

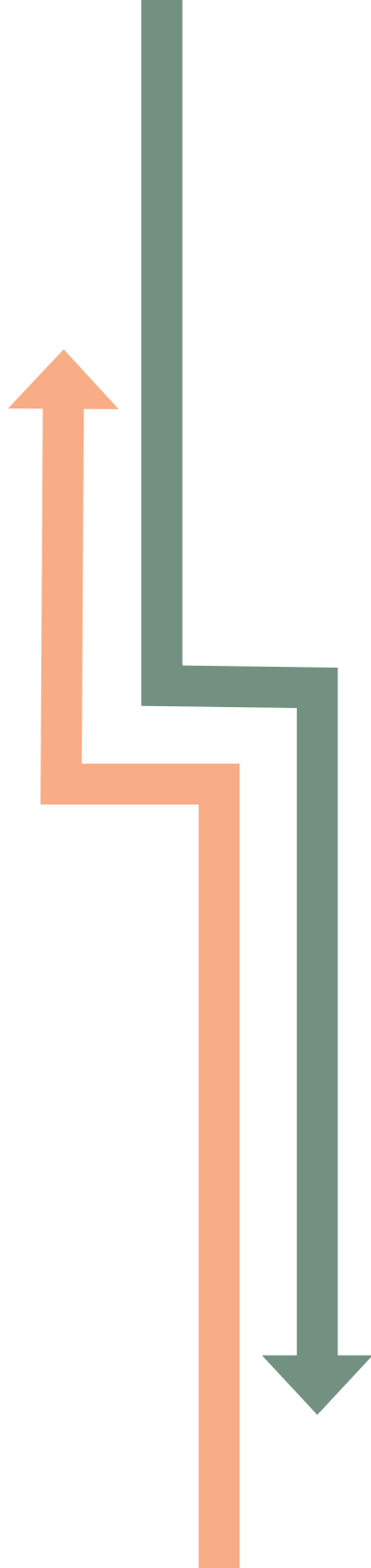
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8

RECOMMENDATIONS



By analyzing the current status of and constraints on state funding for public transit, exploring federal funding opportunities, comparing Michigan's funding practices to peer states, and examining some of the key transportation planning processes used by state and local governments, this report seeks to provide actionable guidance to increase investment in public transit in Michigan. Overall, our research suggests that legislation and public administration are the key levers upon which advocates should focus to drive meaningful change around public transit.

It is important for transit advocates to play a role in the legislative process because the Michigan Constitution and state laws dictate the amount of revenue collected for transportation purposes and to what extent those resources can be spent on public transit. While influencing legislation offers the possibility of substantial impact on transit funding, opportunities to do so are relatively uncommon and generally take many years. Working to shape the public administration of existing resources may provide a shorter-term approach for advocates to maximize the effectiveness of transit spending. Promoting the establishment of specific State climate and transportation goals, along with the coordination of various State and local government bodies on efforts that span environmental and transportation concerns, is a pathway for advocates to elevate the importance of transit in the policy-making conversation. Given that relevant state and local stakeholders expressed interest in understanding TRU's priorities during our research, we are hopeful that TRU can use our guidance to develop and communicate an effective and feasible policy agenda for public transit in Michigan.

TRANSPORTATION RIDERS UNITED (TRU) ADVOCACY RECOMMENDATION

1. ***Transportation Riders United (TRU) should establish and continue sharing the organization's vision for transit in Michigan through a specific list of priorities.***

TRU's priorities should have explicit goals (e.g., reliability, coverage, frequency, job access) and use performance metrics to identify the most impactful actions. The list should be made widely available to local agencies, Metropolitan Planning Organizations (MPOs), and other stakeholders in order to be introduced during key transportation planning processes, such as the Transportation Improvement Program (TIP) and the Long-Range Transportation Plan. These priorities could also be used to help public figures and politicians advocate for transit. Finally, as TRU hires a community engagement manager, this role could use this list of priorities and create a strategy for dissemination.

Based on our research, TRU's list of advocacy priorities might include:

- Removing earmarks from the Comprehensive Transportation Fund (CTF) to guarantee the 10 percent for non-road investment (see recommendation #2)
- Advocating for the Michigan Department of Transportation (MDOT) to increase transparency and accountability through the implementation of performance metrics (see recommendation #4)
- Making a stronger case for the connection between climate change and public transit (see recommendation #5)
- Increasing the MDOT Office of Passenger Transportation (OPT) resources to better support local transit agencies (see recommendation #7)
- Continuing to build knowledge and awareness of decision-making processes and outreach plans within MPOs and other relevant agencies that can be used as opportunities to advocate for increased coordination and incorporation of public transit elements.

LEGISLATIVE RECOMMENDATION

2. *The State Legislature should guarantee recurring funding sources for transit agencies that are protected from reappropriations even in the face of other budget needs.*

To do so, the Legislature should start by removing earmarks from the Comprehensive Transportation Fund (CTF) wherever possible through legislative act to ensure that the CTF receives the full 10 percent of the Michigan Transportation Fund (MTF) as intended by Public Act 51. This would result in an approximate increase of \$31.5 million per year in funding available for public transit.²⁴⁶

In the long term, the State should also consider revising the Constitution to allow for more than 10 percent of the MTF to be used for public transit. Currently, the Constitution states that no less than 90 percent of motor vehicle taxes be used exclusively for roads, streets, and bridges. There are two paths to changing the Michigan Constitution: through a Constitutional Convention and through ballot proposals prompted by voter petition drives.²⁴⁷

ADMINISTRATIVE RECOMMENDATIONS

3. *The Michigan Department of Transportation (MDOT) should continue conducting studies to explore alternatives to the motor fuel tax as vehicles become more fuel-efficient.*

Based on the experience of peer states, MDOT should conduct a formal study of potential new revenue sources with the aim of ensuring that transportation programs are sufficiently funded as electric vehicles become more common and gas tax revenues diminish. A broader evaluation of many potential revenue sources would naturally build upon OPT's ongoing exploration of road user charges, which is one of the revenue sources under consideration in several other states. After identifying viable alternative

ADMINISTRATIVE RECOMMENDATIONS

taxes to implement, the Legislature should change the funding formula as governed by Public Act 51 to include those revenues into the Comprehensive Transportation Fund (CTF), either directly or through the Michigan Transportation Fund (MTF). Because many of these revenue sources would not be considered fuel taxes or registration fees, the Legislature would likely have discretion to reserve more than 10 percent of such revenues on public transit or comprehensive transportation if enacted.

4. MDOT should increase transparency by encouraging and incentivizing local transit agencies to measure rider-oriented transit performance metrics.

These metrics would help inform passengers and elected officials, help transportation officials know if they are on track, and elevate MDOT's understanding of the status of transit in local agencies. Public transit performance metrics should reflect rider experience, such as the number of people with access to reliable transit service.²⁴⁸

5. MDOT's Office of Passenger Transportation should work closely with the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) Office of Climate and Energy to emphasize public transit as a strategy to reduce carbon emissions.

MDOT's involvement in the development and implementation of the MI Healthy Climate Plan and other future climate work is crucial to meeting the State's climate commitments by encouraging more investment in public transit in conjunction with efforts to electrify vehicles.²⁴⁹ During implementation of the plan, MDOT and EGLE can work together to pursue more concrete strategies to reach the plan's insufficiently defined goal of "increasing access to public transit by 15 percent annually."

ADMINISTRATIVE RECOMMENDATIONS

- 6. *MDOT should measure vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions associated with new projects to demonstrate the benefits of transit and potentially reduce car dependency.***

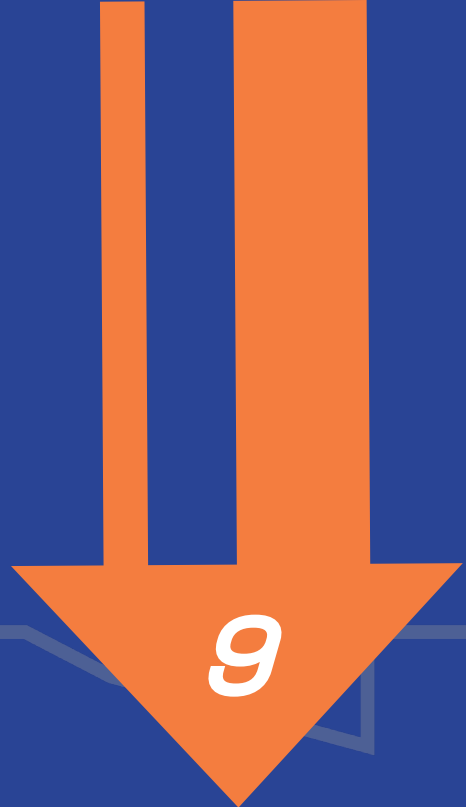
This would help MDOT set more actionable and community-informed goals for public transit in the Long-Range Transportation Plan and be better positioned to apply for federal grants. In the long run, measuring climate-related impacts would enable the implementation of policies like the recent Colorado Department of Transportation requirement that a project must demonstrate a reduction of GHG emissions in line with regional and state goals in order to use state or federal funding for that project.²⁵⁰ See Appendix D for examples.

- 7. *MDOT should create and fund an initiative within the Office of Passenger Transportation to help resource- and capacity-strapped transit agencies and MPOs access available federal funding.***

OPT provides crucial technical assistance to rural agencies, but funding and staff constraints prevent the office from providing the same assistance to small and large urban areas. A public transit funding coordination initiative or position would advance OPT's stated goal of extending more support to transit agencies across the state. Staff could help additional agencies apply for grants, increase awareness of flexible funding opportunities, and encourage and facilitate regional coordination on grants and project proposals, especially as the Infrastructure Investment and Jobs Act (IIJA) expands the pool of available discretionary grants for public transit.²⁵¹ Additional funding and/or staff could also permit OPT to improve tracking of rider-oriented performance metrics, as outlined in Recommendation 4.

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CONCLUSION

Public transit service and usage in Michigan lags behind peer states due to a historical lack of investment. The Michigan Constitution and transportation-related legislation restrict funding for public transit, prioritizing auto-oriented development at the expense of those who depend on transit and all who bear the brunt of the impacts of the climate crisis. The State of Michigan has an opportunity to advance its ambitious climate commitments by increasing investment in public transit across the state.

While this report primarily focused on researching public transit funding strategies within the purview of the State Legislature and agencies, there are other avenues for promoting transit that merit further research by TRU and other stakeholders. For example, local governments and transit agencies might implement innovative revenue-generating mechanisms to raise funds for transit operations or capital projects. On the state level, MDOT may be able to reduce local administrative barriers for transit projects, such as eliminating duplicative review processes. MDOT could also direct more research to transit and other alternatives to single-occupancy vehicles. Finally, MDOT could conduct internal audits to evaluate whether funding formulas and practices align with State priorities and plans.

Public officials and transit advocates have multiple opportunities to strengthen transit funding in Michigan, including enacting legislative change, increasing agency capacity to better leverage available federal grants and programs, identifying new revenue sources, and implementing new performance metrics. As a trusted advocate in the Detroit region, Transportation Riders United can inform the public about current constraints on transit funding, encourage legislators to protect State transit funds, advocate for stronger goals and transparent data collection on climate and transit rider-oriented metrics, and call for more transit projects in various transportation planning processes.



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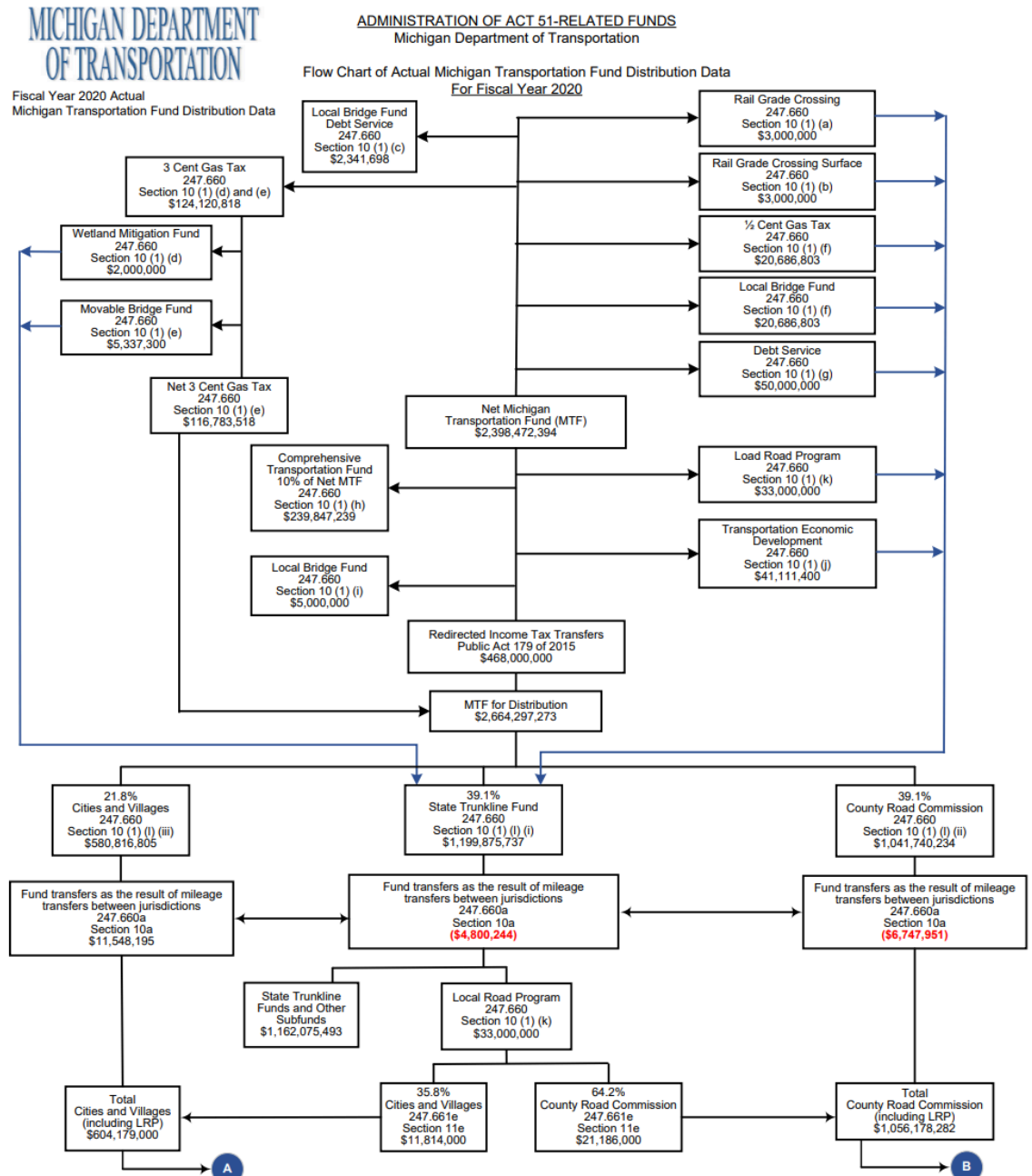
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APPENDICES

APPENDIX A: Updated and Detailed Structure of Michigan's Transportation Funds (Fiscal Year 2020)

Source: Doug A. Ringler. "Administration of Public Act 51-Related Funds - Michigan Department of Transportation." Office of the Auditor General, January 2022. <https://audgen.michigan.gov/wp-content/uploads/2022/01/r591041021-8975.pdf>.



* All dollar amounts based on actual cash basis distribution, including Local Road Program, for the fiscal year of October 1, 2019 through September 30, 2020.

APPENDIX B: Detailed Timeline of Michigan Transportation Legislation

Legislation	Funds Established Funding Sources	Supports Transit Funding	Restricts Transit Funding
Public Act 51 of 1951	--	Directs transportation revenue into special revenue funds, and directs how those funds are spent	--
Constitution of Michigan of 1963	--	--	At least 90% of motor fuel taxes (with some exceptions) must be used exclusively for the construction, financing, and maintenance of roads, streets, and bridges designed primarily for the use of motor vehicles
Public Act 438 of 1982	Comprehensive Transportation Fund (CTF)	CTF to be maintained in the State Treasury as a separate fund	--
Public Act 196 of 1986	Services changes (fares), state funds, federal funds, special assessments, income taxes, notes	Authorizes the formation of public transit authorities, establishes financing processes	--
Public Act 231 of 1987	Transportation Economic Development Fund (TEDF)	Financing of road and street projects that support economic growth	Can only be used for road improvement programs that stimulate job creation
Public Act 348 of 1988	--	--	Establishes an MTF earmark of not more than \$3 million for the rail grade crossing account
Public Act 223 of 1992 (Part 1)	--	Establishes regional bridge councils, establishes funding and allocation process to access bridge funds	Establishes MTF earmark of not less than \$3 million for local and critical bridge fund debt service
Public Act 223 of 1992 (Part 2)	Up to 10% of MTF to be distributed to CTF	--	--
Public Act 79 of 1997	--	--	Established an earmark of \$43 million for the State Trunkline Fund debt service, reallocated one cent of the gas tax for state bridge programs, reallocated revenue equal to 3 cents of the gas tax for distribution to state and local road agencies, \$3.5 million earmark from the MTF to TEDF
Public Act 117 of 1997	--	--	Reappropriated \$50 million from the CTF balance to the state, county road commissions, and cities and villages for road programs
Public Act 151 of 2003	--	--	Redirected \$10 million MTF funds from CTF to STF for fiscal year 2004-05 only
Public Act 384 of 2004	Local Bridge Fund/Program	--	Earmarks \$5 million of MTF revenue, earmarks one-half cent of the gas tax
Senate Bill 399 of 2004	--	--	Reduced CTF share of auto-related sales tax from 27.9% of 1% to 24.0% of 1% for two years
Senate Bill 1103 of 2005	--	--	Redirected \$10.0 million from CTF to General Fund/General Purpose

Legislation	Funds Established	Supports Transit Funding	Restricts Transit Funding
Senate Bill 839 of 2006	--	--	Redirected \$11.1 million from CTF to General Fund/General Purpose
Senate Bill 656 of 2007	--	--	Redirected \$10.27 million from CTF to General Fund/General Purpose, reflecting \$5.0 million from EO 2007-3 reduction, and agreement to lapse \$5.3 million from Soo Locks Fund
Senate Bill 1398 of 2008	--	--	Redirected \$5.0 million from CTF to General Fund/General Purpose
Public Act 135 of 2010 (Complete Streets)	--	Promotes non-motorized transportation in the state	Earmarks 1% of MTF funds to STF and to the counties, cities, and villages for construction or improvement of non-motorized transportation services and facilities
Public Act 160 of 2010	--	--	Redirected \$5.7 million from CTF to General Fund/General Purpose by taking a like amount from the Rail Infrastructure Loan Fund
Public Act 387 of 2012 (Regional Transit Authority Act)	--	Provides for regional transit authorities and public transit; prescribes powers and duties of related agencies, which include authorizing levies, providing issuance of bonds, and collecting taxes	--
Public Act 174 of 2015	An increase in the annual vehicle registration tax by around 20% per vehicle	--	--
Public Act 176 of 2015	An increase in the state gasoline and diesel taxes to 26.3 cents per gallon	--	--
Public Act 179 of 2015	An earmark of \$600 million in state income tax revenue for the MTF	--	For road repairs only
Initiated Law 1 of 2018 (Michigan Regulation and Taxation of Marijuana Act)	35% of marijuana excise directed to the MTF	--	For the repair and maintenance of roads and bridges
Public Act 140 of 2020	--	Allows department to engage outside consulting firm to conduct a feasibility study and strategic implementation plan on tolling Michigan highways	--
Public Act 38 of 2021	--	--	Redirected \$18.0 million from CTF to Transportation Administration Collection Fund

Source: Michigan Legislature. "Public Act MCL Search." Accessed May 4, 2022. [http://www.legislature.mi.gov/\(S\(syqwwsb3bc3si0i3yyn-doamm\)\)/mileg.aspx?page=MclIPASearch](http://www.legislature.mi.gov/(S(syqwwsb3bc3si0i3yyn-doamm))/mileg.aspx?page=MclIPASearch)

APPENDIX C: Transit-Related Strategies in Michigan Mobility 2045

Written by MDOT and adopted in November 2021, Michigan Mobility 2045 serves as Michigan's state long-range transportation plan for the next 25 years. Michigan Mobility 2045 aims to integrate all modes of transportation and federally required plans, ultimately informing transportation investments to enhance the state's social and economic prosperity. Together, Michigan Mobility 2045's "family of plans" consists of the long-range transportation plan; freight, rail, and active transportation plans; and transit strategy. Through the plan's collaborative research and stakeholder engagement sessions, MDOT compiled its findings and devised eight strategies to enhance Michigan's mobility.

FINDINGS

The plan accounted for the following components of Michigan's transportation network:

- 34,960 MDOT-owned lane miles;
- 92,950 locally-owned lane miles;
- Over 11,000 bridges more than 20 feet long;
- 3,600 miles of private- and state-owned freight and passenger rail corridors;
- 18 commercial airports;
- 219 licensed, public-use airports;
- More than 30 ports; and
- More than 80 transit providers that operate local and intercity buses, demand-response services, and ferries.

After evaluating the state's transportation network and collaborating with numerous transportation-, health-, technology-,

and economic development-centered organizations, MDOT found that Michigan's system of roads and bridges form a mature and established network. Findings also revealed that 88.6 percent of person miles traveled on Michigan's interstates and 88.5 percent of person miles traveled on Michigan's non-interstate National Highway System have reliable travel time.²⁵² Despite the mature network of roads and bridges, Michigan saw 1,083 traffic fatalities and 5,433 serious injuries across the state.²⁵³ The contrast between reliable, yet unsafe networks may be due in part to the historical underfunding of Michigan's transportation technology. Emerging technologies such as increased safety features and 5G-enabled infrastructure may enhance the transportation experience of Michigan residents.²⁵⁴

STRATEGIES

Michigan's current transportation network will require significant investment to meet the present and long-term needs of residents and businesses, projected to equal \$125 billion in 2020 dollars. Of this investment, \$123.5 billion will go toward preserving the state's roads and bridges that, if adequately funded over the next 25 years, could yield nearly 5,000 jobs to the Michigan economy.²⁵⁵ Findings from MDOT's research further suggest that these enhanced transportation conditions could be realized through promotion of the following strategies:

1. Prioritizing safety;
2. Managing resources responsibly;
3. Providing accessibility and mobility for all;
4. Supporting Michigan health;
5. Building resilience;
6. Working together;
7. Technology; and
8. Economic vitality.²⁵⁶

APPENDIX D: Summary of Michigan Mobility 2045 Strategies with Critiques and Suggested Metrics

MM2045 Strategy	Strategy Description	Critique/Suggestion	Suggested Metric
1. Prioritizing Safety			
1.1: Promote safe behaviors	Through campaigns and enforcement, encourage safe use of Michigan's transportation network.	Define safety goals and relevant behaviors that promote the well-being of transit operators and riders. How will public awareness campaigns be implemented? How will these behaviors be enforced, and by whom?	Speed limit Number of people killed or severely injured ²⁵⁷
1.2: Prioritize infrastructure and facilities improvements with proven safety benefits	Use data-driven methods to improve roads and other infrastructure.	Integrate transit ridership, racial equity, and climate change considerations into data collection and analysis. Specify what some of the countermeasures are.	Disparities in injury risk by socioeconomic status factors ²⁵⁸
1.3: Support and implement state-of-the-art safety technology solutions	Enhance research, development, and adoption of safety technology such as ADAS (advanced driver assistance systems).	Ensure public transit services are integrated in the development of this safety technology.	Number of people killed or severely injured ²⁵⁹ Rate of ADAS utilization
1.4: Collaborate with transportation partners and emergency medical and trauma services	Promote data sharing and collaboration between transit providers and public safety agencies.	Form a working group of stakeholders committed to public safety on transit services.	Frequency of contact among transit providers and public safety agencies
2. Managing Resources Responsibly			
2.1: Advance transportation asset management to optimize transportation investments	Monitor the conditions of Michigan's transportation network and transportation assets to inform fiscal planning and implementation.	Develop a centralized, statewide system for transit agencies to share their asset management plans and practices.	Frequency and quality of reporting
2.2: Streamline and improve data, data management systems, and processes	Bolster capacity to collect, store, and analyze data to improve efficiency, accountability, and transparency of Michigan's transportation partners.	Specify metrics to be used for evaluating "efficiency, accountability, and transparency." Develop protocol to integrate data into decision-making.	Frequency of engagement sessions among public and transportation partners Consistent, accurate, and accessible release of reports regarding data and decision-making processes

MM2045 Strategy	Strategy Description	Critique/Suggestion	Suggested Metric
2.3: Right-size Michigan's transportation network and systems	Assess Michigan's transportation infrastructure and redesign to better fit current and projected economic conditions; adapt infrastructure to meet the highest and best use of available assets.	Promote design and policy that prioritizes walkability, increased density, diverse land uses, and transit.	Annual report on planning and implementation of right-sizing projects, cataloging ongoing and future projects and trends. Report should prioritize best economic, climate, and transit use of assets

3. Providing Accessibility and Mobility for All

3.1: Improve the reliability of the transportation network and systems	Use technology and data (e.g., Mi-TIME, traffic signal detection) to reduce wait times and improve reliability	Prioritize development of traffic signal priority for public transit along corridors like Woodward, Michigan, and Gratiot ²⁶⁰	Excess Wait Time
3.2: Enhance the mobility of Michigan's residents and non-residents	Improve accessibility and equity in transportation networks for low-income persons, persons of all abilities, and those with limited transportation options; integrate land use and transportation to enhance economic conditions	<p>Conduct assessment on how MDOT will expand mobility options for low-income persons and persons of all abilities within next 12 months²⁶¹</p> <p>Provide details, timelines, and metrics for how MDOT will expand equitable access and encourage integration of land use and transportation policies²⁶²</p>	<p>Walkshed to transit stops</p> <p>Population or destinations served within ½ mile</p> <p>Safe crosswalks and walk/bike lane networks</p>
3.3: Pursue a statewide Mobility as a Service (MaaS) platform	Create a unified application that contains information about available transportation options, including trip planning, online booking, and mobile payment	<p>When considering app development, be sure to make this information available to those who cannot access certain technologies</p> <p>Provide details for how MDOT will fund MaaS²⁶³</p>	<p>Timeline and progress reports on app development</p> <p>Number of unique people who use the app</p>
3.4: Support the increased use of the passenger transportation system	Better fund and advertise public transit	Dedicate a separate funding source without earmarks	<p>Ridership growth</p> <p>Number of educational or advertising materials distributed</p> <p>Earmarks removed from Comprehensive Transportation Fund</p>
3.5: Define, measure, and improve equitable access	Increase equitable access to transit and relevant destinations by engaging the public and decision-makers	Specify how equity and accessibility will be incorporated in project selection and investment decisions	<p>Number of connections between communities</p> <p>Number of connections between key destinations</p>

MM2045 Strategy	Strategy Description	Critique/Suggestion	Suggested Metric
3.6: Develop projects that equitably meet community mobility needs	More directly incorporate community needs and desires into planning and development, encouraging complete streets, multimodal transportation, and health	Ensure there are adequate levels of funding to support community mobility needs, equity, and accessibility. Develop community advisory group that regularly meets with planning and transportation officials	Number of community engagement events Systematize receipt and review of public comments
4. Supporting Michigan's Health			
4.1: Participate in and contribute to initiatives to improve air quality and reduce emissions	Support expansion of electric public transit and other high-efficiency/ low-emission vehicles through collaboration with stakeholders	Promote health equity by addressing communities most adversely affected by poor air quality	Frequency of stakeholder meetings Number of high-efficiency/ low-emission vehicles with accompanying infrastructure Measurements of air quality (e.g., PM, ozone, diesel) Rates of cardiovascular disease (e.g., asthma, bronchitis COPD) by neighborhood
4.2: Support and implement approaches that preserve Michigan's natural resources	Reduce environmental impact of transportation projects and preserve natural resources (e.g., pollinator habitats, water) with ecologically-informed strategies	Conduct environmental impact assessment of current and future projects with respect to pollinator habitats and stormwater management; ensure appropriate funds are available	Area of preserved land or natural resources Number of administrative and legislative acts to ensure preservation
4.3: Foster collaboration between local transportation providers and public health interests	Expand transit services to provide equitable access to medical and health-related destinations	Assess health needs of municipality and ensure that transit routes accommodate current and projected needs	Frequency of stakeholder meetings Number of connections between residential areas and health-related destinations
4.4: Encourage healthy lifestyles	Encourage healthy lifestyles through equitable expansion of connected active transportation networks that are attractive, safe, and accessible for persons of all abilities	Revise zoning codes to allow for connected active transportation network and increased access to health-promoting spaces Assess and equitably invest in infrastructure (e.g., sidewalks, bike lanes) that allows people to engage in more active lifestyles	Percentage of sidewalk pavements in good condition

MM2045 Strategy	Strategy Description	Critique/Suggestion	Suggested Metric
5. Building Resilience			
5.1: Identify and address risks to Michigan's transportation network	Use data to assess vulnerabilities and risks, and improve infrastructure to increase resiliency	Apply equity to data collection and planning that protect the most vulnerable populations	Vulnerability report that shows the areas of the state most vulnerable to risks
5.2: Promote and research an implementation plan for transportation infrastructure protection, security, and emergency management	Improve stakeholder collaboration to increase infrastructure security and emergency management through cybersecurity enhancements	Prioritize climate change-related security efforts	Frequency of review Number of security incidents Mean time to detect/resolve Access management
5.3: Improve organizational resiliency	Make organizational improvements that prioritize recruiting and retaining employees by streamlining processes and systems	Partner with public educational institutions to recruit employees Ensure employees feel respected and validated	Number of employees recruited and retained Frequency of town hall and employee engagement meetings
6. Working Together			
6.1: Expand public sector partnerships and collaboration	Improve partnerships with local, regional, and national organizations, including public agencies and private industries that allow increased coordination, accessibility, and collaborative planning	When developing relationships with agencies, businesses, and organizations, be sure to include the perspectives of individual transit riders.	Frequency of partnership meetings Number of individuals representing unique partner organizations
6.2: Improve and expand relationships with private and nonprofit partners	Increase private funding to develop innovative transportation solutions	Private funding is important and necessary to transportation innovation, but increasing public funding is paramount	Number of public-private partnerships Private funds raised for transportation solutions
6.3: Ensure decision-makers and stakeholder groups reflect Michigan's character and integrity	Prioritize diversity, equity, inclusion, and justice in business practices, policies, procedures, and stakeholder relationships	Ensure MDOT's leadership and decision-makers and stakeholder groups reflect Michigan's population	Racial, ethnic, gender, sexual orientation, religious demographics Frequency of employee engagement sessions

MM2045 Strategy	Strategy Description	Critique/Suggestion	Suggested Metric
7. Technology			
7.1: Prepare for and enable widespread CAV adoption	Advance connected and automated vehicles (CAV) design and deployment through enhanced data infrastructure	Ensure that Internet capabilities are accessible to underserved communities Conduct safety assessments that account for pedestrians and cyclists	Consistent, accurate, and accessible release of reports regarding data and decision-making processes
7.2: Regularly evaluate new transportation technology and adopt those that best support Michigan's goals	Plan for and promote evolving transportation technologies to increase mobility, reliability, and accessibility of transit services	Provide that new technologies are environmentally conscious and accessible to all transportation users	Ridership growth Total person throughput Number of people killed or severely injured
7.3: Promote standards-based approaches to network technology and deployment	Equitably share standardized and coordinated transportation technology with transit operators, local governments, and other stakeholders	Place special emphasis on diverse and representative stakeholders, including communities of color, rural communities, aging populations, and persons of all abilities	Number of transit operators using standardized methods
8. Economic Vitality			
8.1: Promote freight service, infrastructure improvements, and intermodal connectivity	Improve freight reliability and economic benefits through enhanced infrastructure, intermodal connectivity, and optimized operations	Consider how public transit could reduce freight bottlenecks and improve environmental impact of freight services	Total freight throughput Economic activity related to freight service
8.2: Continue to partner in transit-oriented development projects	Support local communities' access to economic opportunities with transit-oriented development	Evaluate current TOD projects and their environmental and economic impact. Identify relevant strategies that can be improved. Implement findings into future projects	Economic activity related to transit-oriented development Environmental impact analyses Walkshed to transit stops
8.3: Continue to be a leader in innovative transportation technology and education partnerships	Improve economic opportunities through entrepreneurship, academic leadership, and equitable growth	Form a working group composed of stakeholders from each field (i.e., entrepreneurship, transportation, technology, academia, and economics) to devise best strategies, practices, and implementation methods	Population or destinations served within ½ mile Frequency of stakeholder meetings Amount of financial and resource investment in entrepreneurship

APPENDIX E: Regional Planning Processes

TRANSPORTATION IMPROVEMENT PROGRAMS

In Michigan, 13 metropolitan planning organizations (MPOs) develop transportation improvement programs (TIPs) every four years. The amount of transit-related projects that are included in the TIP is largely dependent on the capital and operations needs of transit agencies over the four-year TIP period. Transit agencies themselves are responsible for internally prioritizing projects and submitting them to the MPO for inclusion.²⁶⁴ TIPs are also, therefore, indicators of transit agencies' and MPOs' abilities to pursue and obtain federal funding opportunities.

Each MPO develops its TIP with other regional decision-making entities to act with greater coordination and meet all federal requirements. In Southeast Michigan, SEMCOG works with Federal Aid Committees (FAC), the Transportation Coordinating Council (TCC), and Executive Committee to develop, propose, and approve projects that are consistent with the 2045 Regional Transportation Plan (RTP), and contribute to achieving federal Transportation Performance Measure targets.²⁶⁵ Members of these committees typically include MDOT staff as well.

FACs were established to link the MPO's regional view with local knowledge in developing and prioritizing projects. Members consist of local officials and staff of the county, city, and village governments within the FAC area. These transportation professionals are selected because their agencies own the transportation assets and know the local transportation conditions and needs best. Each FAC recommends a list of projects for the four-year TIP period based on regional policies, local needs, and funding constraint targets.²⁶⁶

The lists of recommended projects are reviewed and analyzed by SEMCOG staff, forwarded to SEMCOG's TCC for its recommendation, and then sent to SEMCOG's Executive Committee for approval. Once SEMCOG and MDOT have approved the TIP, it is reviewed by FHWA, FTA, and the U.S. Environmental Protection Agency for concurrence with federal regulation. Projects in the TIP become eligible for federal funding after these agencies approve. Scheduling changes and adjustments to estimated costs, scoping, and anticipated budgets occur as projects move towards implementation. FACs are responsible for recommending changes for review by SEMCOG.²⁶⁷

To be eligible for the SEMCOG TIP, projects must address RTP policies and be consistent with RTP's outcomes and performance measures.²⁶⁸ Projects included in the TIP are made available for public comment and subject to analysis that demonstrates they are fully funded by reasonably available financial resources, conform to Clean Air Act requirements, and that the costs and benefits of the projects are evenly distributed throughout the region.²⁶⁹

An MPO receives the State of Michigan's priorities for the state-owned portion of the regional transportation system through MDOT's rolling Five-Year Transportation Plan (5YTP). Projects in the 5YTP that are within the four-year TIP period are added to the MPO TIP and managed through the amendment and administrative modification processes, as appropriate. As with local projects, state trunkline projects become official once approved by the Executive Committee. Once all state and local projects are approved in the new TIP, it is then incorporated into the State Transportation Improvement Program (STIP) and projects can begin to be implemented.²⁷⁰

REGIONAL CONDITIONS AND PERFORMANCE MEASURES

The following factors are those considered in Michigan's statewide planning process as established in the Federal Transportation Equity Act for the 21st Century (TEA-21), the Moving Ahead for Progress in the 21st Century Act (MAP-21), and the Fixing America's Surface Transportation Act (FAST Act) of 2015 in regards to transportation projects:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase safety and security of the transportation system for motorized and non-motorized users.
3. Increase security of the transportation system for motorized and non-motorized users.
4. Increase accessibility and mobility options available to people and for freight.
5. Protect and enhance the environment, promote energy conservation, and improve quality of life.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operations.
8. Emphasize preservation of the existing transportation system.
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance travel and tourism.²⁷¹

Implementing new and expanded services or modernizing equipment for public transit could help address many of these objectives. The Michigan Mobility 2045 Plan plainly states that "the most important investments are to increase the frequency and span of services," and that "directing more operational and capital funding toward transit will especially benefit Michigan's lower-

income and disadvantaged communities."²⁷² However, acquiring the additional capital and operating funds to do so remains a major challenge for regional transit in many areas of the state. Support for transit in Southeast Michigan lags behind almost every other U.S. region of similar size and economy; Southeast Michigan spent about \$67 per capita in transit services in 2016, which is significantly lower than peer regions, even those with lower populations.²⁷³

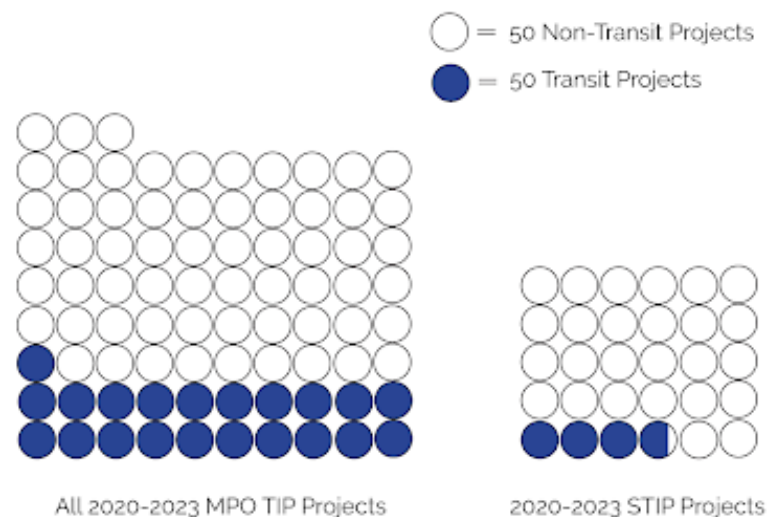


Figure. Comparison of Transit Projects and Non-Transit Projects Reflected in the 2020-2023 STIP and MPO TIP Plans

Sources: Battle Creek Area Transportation Study TIP 2020-2023, Bay City Area Transportation Study TIP 2020-2023, Genesee County Metropolitan Alliance TIP 2020-2023, Grand Valley Metro Council TIP 2020-2023, Kalamazoo Area Transportation Study TIP 2020-2023, Macatawa Area Coordinating Council TIP 2020-2023, Midland Area Transportation Study TIP 2020-2023, Region 2 Planning Commission TIP 2020-2023, Saginaw Metropolitan Area Transportation Study TIP 2020-2023, Southeast Michigan Council of Governments TIP 2020-2023, Southwest Michigan Planning Commission TIP 2020-2023, Tri-County Regional Planning Commission TIP 2020-2023, West Michigan Metropolitan Transportation Planning Program TIP 2020-2023, STIP 2020-2023.

Each transit agency creates individual Transit Asset Management (TAM) plans identifying assets and condition evaluation approaches that best fit the system. TAM plans track the asset conditions of rolling stock, equipment, and facilities while establishing routines for systematically managing operations, maintenance, and capital investments. TAM plans are also developed every four years, and updated by the MPO to incorporate capital expenditures that leverage federal funding into the TIP.²⁷⁴ The Useful Life Benchmark (ULB) and general condition of buses, equipment, and facilities are the major factors determining TIP funding for regional transit.

MDOT develops a State Transportation Improvement Program (STIP) listing all surface transportation, transit, and multimodal projects funded with federal aid. It includes projects from the 5YTP, statewide, and rural projects located outside of MPO boundaries. The STIP encompasses 14 documents, including 13 individual MPO transportation improvement programs (TIPs), and one statewide non-MPO transportation improvement plan (STIP).

While the STIP references MPO TIPs, specific projects from each agency within an MPO are represented on that MPO's TIP and MPOs have responsibility for the public involvement process of their plans. The STIP also contains information on federal requirements for state and metropolitan planning, statewide transportation goals, and a detailed financial plan.

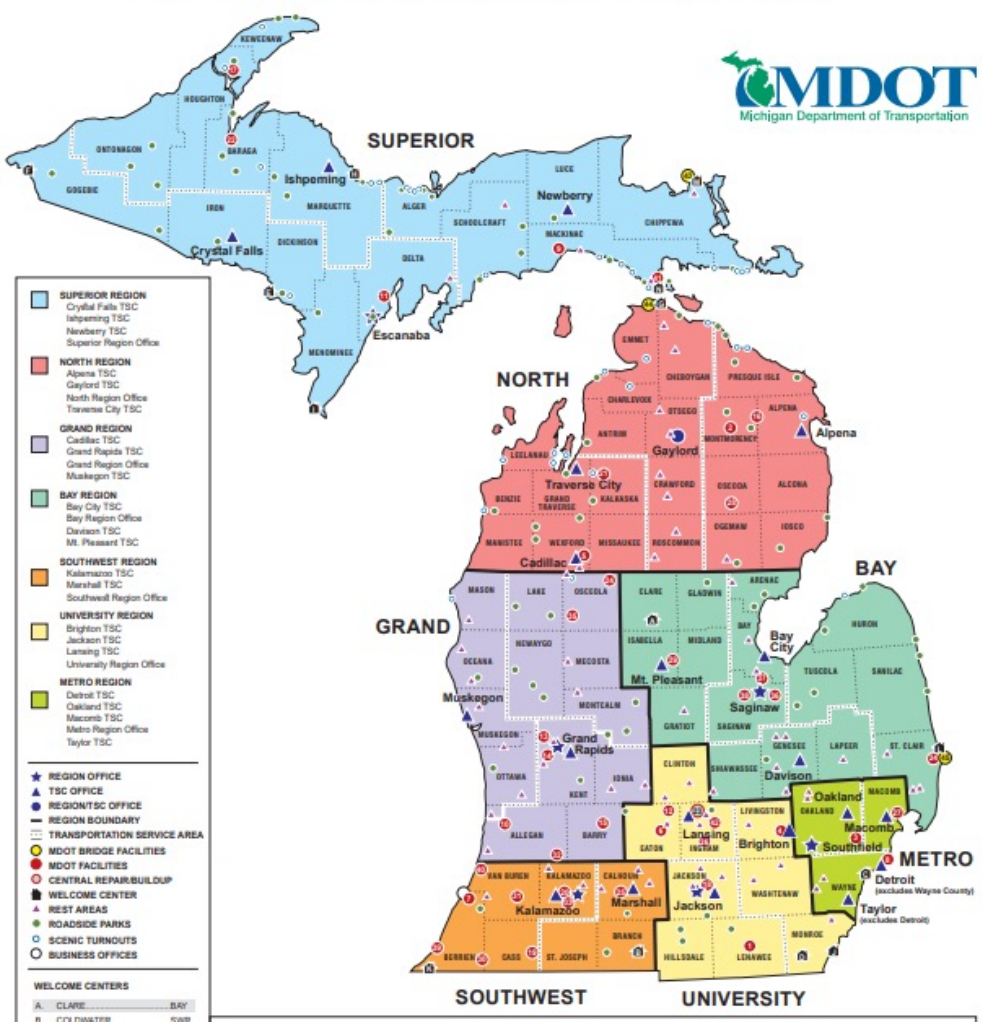
Figure. Comparison of Transit Projects and Non-Transit Projects Reflected in the 2020-2023 STIP and MPO TIP plans

APPENDIX F: Maps of Metropolitan Planning Areas in Michigan and MDOT Regional Service Areas and Facilities

Maps from MDOT (2021) and MDOT 2019 STIP Public Participation Plan.



MDOT Regional Service Areas and Facilities



APPENDIX G: List of Interviews

#	Name	Organization	Position	Date
1	Andrea Brush	Michigan Department of Transportation (MDOT)	Transportation Services Section Manager, Office of Passenger Transportation (OPT)	03/25/2022
2	Ben Stupka	WSP USA	Supervising Planner	02/15/2022
3	Clark Harder	Michigan Public Transit Association (MPTA)	Executive Director	03/18/2022
4	Dusty Fancher	Michigan Strategy Group	Transit Lobbyist	03/18/2022
5	Gautam Mani	Federal Highway Administration	Community Planner, New York Division	03/23/2022
6	Gustavo Serratos	City of Detroit	Complete Streets Project Manager	02/15/2022
7	Jean Ruestman	Michigan Department of Transportation (MDOT)	Administrator, Office of Passenger Transportation (OPT)	03/14/2022
8	Jim Ashman	Michigan Department of Transportation (MDOT)	Transportation Specialist, Bureau of Transportation Planning	03/14/2022
9	John Egelhaaf	Southwest Michigan Planning Commission (SWMPC)	Executive Director	03/29/2022
10	Julia Roberts	Western-Washtenaw Area Value Express (WAVE)	Executive Director	03/10/2022
11	Kim Gallagher	Southwest Michigan Planning Commission (SWMPC)	Senior Transportation Planner	03/29/2022
12	Ryan Buck	Washtenaw Area Transportation Study (WATS)	Director	02/15/2022
13	Sam Krassenstein	City of Detroit	Chief, Infrastructure Planning	02/15/2022
14	Tim Hoeffner	Quandel Consultants	Senior Consultant	03/21/2022
15	Trevor Brydon	Southeast Michigan Council of Governments (SEMCOG)	Planner III, Transportation Planning and Programming	04/07/2022
16	William Hamilton	Michigan House Fiscal Agency	Fiscal Analyst	02/18/2022

ENDNOTES

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253. Michigan Department of Transportation.
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257. National Association of City Transportation Officials, "Making Transit Count: Performance Measures That Move Transit Projects Forward."
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262. Owens, Megan.
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264. Southeast Michigan Council of Governments, "Transportation Improvement Program (TIP) for Southeast Michigan, FY 2020-2023."
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270. Southeast Michigan Council of Governments.
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