Financial Analysis

Introduction

The GVMC Plan consists of the FY2014-2017 Transportation Improvement Program (TIP) and the 2040 Metropolitan Transportation Plan (MTP). The TIP is a subset of the MTP and contains the short-range list of road and transit projects communities and agencies plan to implement over a four-year period. The MTP contains the TIP and also projects that will most likely be implemented from FY2018 through FY2040. Therefore, this transportation plan covers a period of 26 years. The TIP and MTP list of projects are required to be fiscally constrained; that is, the cost of projects listed in the TIP and MTP cannot exceed the amount of funding "reasonably expected to be available" during that time. The financial plan is the section of the MTP that documents the method used to calculate funds reasonably expected to be available and compares this amount to proposed projects to demonstrate that the MTP is fiscally constrained. The financial plan also identifies the costs of operating and maintaining the transportation system within GVMC.

Sources of Transportation Funding

The basic sources of transportation funding are motor fuel taxes and vehicle registration fees. Both the federal government and the State of Michigan tax motor fuel, the federal government at $0.184 per gallon on gasoline and $0.244 per gallon on diesel and Michigan at $0.19 per gallon on gasoline and $0.15 per gallon on diesel. Michigan also charges sales tax on motor fuel, but this funding is not applied to transportation. The motor fuel taxes are excise taxes, which mean they are a fixed amount per gallon. The amount collected per gallon does not increase when the price of gasoline or diesel fuel increases. Over time, inflation erodes the purchasing power of the motor fuel tax.

The State of Michigan also collects annual vehicle registration fees when motorists purchase license plates or tabs. This is a very important source of transportation funding for the state. Currently, roughly half of the transportation funding collected by the state is in the form of vehicle registration fees.

Cooperative Revenue Estimation Process

Estimating the amount of funding available for the 26 year MTP period is a complex process. It relies on a number of factors, including economic conditions, miles travelled by vehicles nationwide and in the State of Michigan, and federal and state transportation funding received in previous years. Revenue forecasting relies on a combination of data and experience and represents a "best guess" of future trends.

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

Highway Funding Forecast--Federal

Sources of Federal Highway Funding

Federal transportation funding comes from motor fuel taxes (mostly gasoline and diesel). Receipts from these taxes are deposited in the Highway Trust Fund (HTF). Funding is then apportioned to the states. Apportionment is the distribution of funds through formulas in law. The current law governing these apportionments is Moving Ahead for Progress in the 21st Century (MAP-21). Under this law, Michigan receives approximately $1 billion in federal transportation funding annually. This funding is apportioned through a number of programs designed to accomplish different objectives, such as road repair, bridge repair, safety, and congestion mitigation. A brief description of the major funding sources follows.

National Highway Performance Program (NHPP): This funding is used to support condition and performance on the National Highway System (NHS) and to construct new facilities on the NHS. The National Highway System is the network of the nation's most important highways, including the Interstate and US highway systems. In Michigan, most roads on the National Highway System are state trunk lines (i.e., "I-," "US-," and "M-" roads. However, MAP-21 expanded the NHS to include all principal arterials (the most important roads after freeways), whether state or locally owned. As a result of this change, local agencies within GVMC will receive approximately $27.97 million through NHPP through FY2040.

Surface Transportation Program (STP): Funds for construction, reconstruction, rehabilitation, resurfacing, restoration, preservation, or operational improvements to federal-aid highways and replacement, preservation, and other improvements to bridges on public roads. Michigan's STP apportionment from the federal government is evenly split, half to areas of the state based on population and half that can be used in any area of the state. Over the 26 year period GVMC will receive approximately $313.25 million, which will be used by cities, villages, and county road commissions. STP can also be flexed (transferred) to transit projects.

Highway Safety Improvement Program (HSIP): Funds to correct or improve a hazardous road location or feature or address other highway safety problems. Projects can include intersection improvements; shoulder widening; rumble strips; improving safety for pedestrians, bicyclists, or disabled persons; highway signs and markings; guardrails; and other activities. The State of Michigan retains all Safety funding and uses a portion on the state trunk line system, distributing the remainder to local agencies through a competitive process. Local agencies within GVMC are projected to receive around $36.15 million in HSIP funding between FY2014 and 2040, based on past awards. However, Safety funding has been substantially increased nationwide under MAP-21, so the region may receive Safety funding in excess of the estimate.

Congestion Mitigation and Air Quality Improvement (CMAQ): Intended to reduce emissions from transportation-related sources. MAP-21 has placed an emphasis on diesel retrofits, but funds can also be used for traffic signal retiming, actuations, and interconnects; installing dedicated turn lanes; roundabouts; travel demand management such as ride share and vanpools; transit; and non-motorized projects that divert non-recreational travel from single-occupant vehicles. The State of Michigan has allocated funding to GVMC based on population. MDOT uses half of the funding for CMAQ-eligible projects on the state trunk line system; the other half is distributed by GVMC to eligible projects. Traditionally, GVMC has divided local funding evenly between highway and transit projects. Changes brought about by MAP-21 may require a reexamination of the distribution formulas. GVMC's share of this funding is estimated to be approximately $68.9 million over the 26 year period, based on funding targets issued by MDOT.

Transportation Alternatives Program (TAP): Funds can be used for a number of activities to improve the transportation system environment, including (but not limited to) non-motorized projects, preservation of historic transportation facilities, outdoor advertising control, vegetation management in rights-of-way, and the planning and construction of projects that improve the ability of students to walk or bike to school. The funding will then be split, 50% being retained by the state and 50% to various areas of the state by population, much like the STP distribution. GVMC's share of this funding is estimated to be approximately $23.67 million over the 26 year period and will be distributed to local agencies on a competitive basis.

Base and Assumptions Used in Forecast Calculations of Federal Highway Funds

Each year, the targets (amount GVMC is expected to receive) are calculated for each of these programs based on federal apportionment documentation and state law. Targets can vary from year to year due to many factors, including how much funding was actually received by the Highway Trust Fund, the authorization (the annual transportation funding spending ceiling), and the appropriation (how much money is actually approved to be spent). Targets for fiscal year 2013, as provided by MDOT, are used as the baseline for the forecast. The Financial Work Group of the MTPA developed a 2% per year federal revenue growth rate for the FY 2014-2017 TIP period. For the MTP it was determined that FY2018 and FY2019 would have no growth then increasing to 2.39% annually from FY2020 through FY2040. If targets for the 2014-2017 near term TIP years are known (such as NHPP), those amounts were used without adjustment. While this is less than the 5%

growth rate over the past 20 years, the decrease in motor fuel consumption (due to less driving and higher-MPG vehicles) and the economic downturn and restructuring experienced by the nation in general and Michigan in particular made assumptions based on long-term historical trends unusable. Table 1 contains the federal transportation revenue projections for the 2014-2040 MTP period.

Table 1. Federal Highway Transportation Revenue Projections for the 2014-2040 MTP (Millions of Dollars).

FY	STPU	STPR	NHPP	CMAQ	Bridge	HSIP	TAP	TOTAL
2014	$8.84	$0.80	$0.79	$2.55	$1.57	$1.02	$0.67	$16.23
2015	$9.02	$0.81	$0.81	$2.55	$1.60	$1.04	$0.67	$16.51
2016	$9.20	$0.83	$0.82	$2.55	$1.63	$1.06	$0.69	$16.79
2017	$9.38	$0.85	$0.84	$2.55	$1.66	$1.08	$0.71	$17.07
2018	$9.38	$0.85	$0.84	$2.55	$1.66	$1.08	$0.71	$17.07
2019	$9.38	$0.85	$0.84	$2.55	$1.66	$1.08	$0.71	$17.07
2020	$9.60	$0.87	$0.86	$2.55	$1.70	$1.11	$0.73	$17.42
2021 - 2025	$51.58	$4.65	$4.61	$12.76	$9.30	$5.95	$3.90	$92.60
2026 - 2030	$58.05	$5.24	$5.18	$12.76	$10.30	$6.70	$4.39	$102.61
2031 - 2035	$65.32	$5.89	$5.83	$12.76	$11.59	$7.53	$4.94	$113.87
2036 - 2040	$73.51	$6.63	$6.56	$12.76	$13.04	$8.48	$5.55	$126.54
TOTAL:	$313.25	$28.26	$27.97	$68.90	$55.59	$36.15	$23.67	$553.79

Part II. Highway Funding Forecast—State Funding

Sources of State Highway Funding

There are two main sources of state highway funding: the state motor fuel tax and vehicle registration fees. The motor fuel tax, currently set at 19 cents per gallon on gasoline and 15 cents per gallon on diesel, raised approximately $935.1 million in fiscal year 2013. Like the federal motor fuel tax, this is also an excise tax that doesn't increase as the price of fuel increases, so over time, inflation erodes the purchasing power of these funds. Approximately $902.2 million in additional revenue is raised through vehicle registration fees when motorists purchase their license plates or tabs each year. The state sales tax on motor fuel, which taxes both the fuel itself and the federal tax, is not deposited in the Michigan Transportation Fund. Altogether, approximately $1.9 billion was raised through motor fuel taxes, vehicle registrations, heavy truck fees, interest income, and miscellaneous revenue in FY 2013.

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

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

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

Base and Assumptions Used in Forecast Calculations of State Highway Funds
The base for the financial forecast of state funding is the FY2013 distribution of MTF funding as found in MDOT Report 139. This report details distribution of funding to each eligible Act 51 agency in the state. Adding all of the distributions to cities, villages, and county road commissions at GVMC provides an overall distribution total for the region. That amount was approximately $62.5 million in FY 2013.

The Financial Work Group predicted an increase of 0.4% in state revenues for fiscal years 2014-2017 increasing to 2.16% annually during the FY2018-2040 time period. Table 2 shows the amount of MTF funding cities, villages, and road commissions within GVMC are projected to receive during the FY2014-2040 period, based on the agreed-upon rates of increase.

Table 2. Projected MTF Distribution to Act-51 Agencies for Highway Use, FY 2014 through FY 2040 (Millions of Dollars)

Fiscal Year(s)	Amount
2014	$62.8
2015	$63.0
2016	$63.3
2017	$63.5
2018	$64.9
2019	$66.3
2020	$67.7
2021 - 2025	$361.3
2026 - 2030	$402.1
2031 - 2035	$447.4
2036 - 2040	$497.8
TOTAL	$2,160.2

State funding is projected to grow much more slowly than federal funding during the 26 year period. This will have two effects on the region's highway funding. First, available funding for operations and maintenance of the highway system will most likely not keep pace with the rate of inflation, leaving less money for a growing list of maintenance work. Secondly, the federal highway funding will grow at a greater rate than non-federal money to match it. For those federal transportation sources requiring match, this means that some funding will go unused, despite the demand.

Part III. Highway Funding Forecast—Hybrid State/Federal funding

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

- TEDF Category A: Highway projects to benefit targeted industries;
- TEDF Category C: Congestion mitigation in designated urban counties (Kent County only);
- TEDF Category D: All-season road network in rural counties (Ottawa County only);
- TEDF Category E: Forest roads; and
- TEDF Category F: Roads in cities that are located in rural counties.

TEDF Category B no longer exists. Categories A and F are awarded on a competitive basis, and Category E is not awarded for GVMC. Therefore, this discussion will be limited to Category C and Category D.

Both programs are blends of state and federal funding. Act 51 specifies that $36.8 million of each year's MTF receipts be directed to the Transportation Economic Development Fund. The federal portion of TEDF was formerly derived from the Equity Bonus program, but this was discontinued under MAP-21. The State of Michigan has instead funded the TEDF Category C and D programs with additional Surface Transportation Program funding. (Also known as STP Flex, this funding was included with the STP dollar amount in table 1).

Base and Assumptions Used in Forecast Calculations of Hybrid State/Federal Highway Funds
The base year used to calculate the TEDF Category C and TEDF Category D is FY2013. The federal amounts are increased by the agreed-upon MTPA/Financial Workgroup factors. However, the state portion is a fixed amount set in Act 51. The forecast assumes no change in Act 51 during the 26 year period, so the state portion is not increased.

Table 3. Projected Transportation Economic Development Fund (Categories C and D)

FY2014-2040 (Millions of Dollars).FY	State Portion	TOTAL
2014	$0.99	$0.99
2015	$0.99	$0.99
2016	$0.99	$0.99
2017	$0.99	$0.99
2018	$0.99	$0.99
2019	$0.99	$0.99
2020	$0.99	$0.99
2021 - 2025	$4.94	$4.94
2026 - 2030	$4.94	$4.94
2031 - 2035	$4.94	$4.94
2036 - 2040	$4.94	$4.94
TOTAL	$26.68	$26.68

Part IV. Highway Funding Forecast—Local Funding

Sources of Local Highway Funding

Local highway funding can come from a variety of sources, including transportation millages, general fund revenues, and special assessment districts. Locally funded transportation projects that are not of regional significance are not required to be included in the TIP or MTP. This makes it difficult to determine how much local funding is being spent for roads within GVMC. Additionally, special assessment districts and millages generally have finite lives, so an accurate figure for local transportation funding would require knowledge of what millages and special assessment districts were in force in each year of the TIP/MTP period. Given that

there are two counties and 40 cities, villages, and townships within GVMC, this level of accuracy is difficult to achieve.

Base and Assumptions Used in Forecast Calculations of Local Highway Funds
The current TIP covers fiscal years 2014 through 2017. The current TIP, plus FY 2013 from the previous TIP, were queried for all projects with funding codes indicating that local funding was or will be used. Local funds programmed by transit agencies were removed, as were advance construct funds. Advance construct (AC) means the agency uses its own money to build the project, and then pays itself back in a future year with federal funding. Because of the way AC projects are shown in the TIP, counting them exaggerates the amount of local funding actually used. When this was done, the five-year annual average of local funding totaled about $6 million. It's highly unlikely that there will be increases in local funding over the four-year TIP period, so the actual programmed figure for FY 2014 was used, and then $6 million was used for each year through FY 2017. A total of $24 million in local funding is expected to be available over the four-year TIP period. However, it is nearly impossible to predict the amount of local funding available over the entire 2014-2040 period, so these funds are not included in this analysis.

Highway Funding Forecast - MDOT

The state of Michigan maintains an extensive network of highways across the state and within the GVMC Region. All highways with an "I," "M," or "US" designation, such as I-96, US-131, or M-6 is part of this network, which is known as the State Trunkline System. The portion of the State Trunkline System in West Michigan is comprised of over 1,024 lane-miles of highway, hundreds of bridges and culverts, signs, traffic signals, safety barriers, sound walls, and other capital that must be periodically repaired, replaced, reconstructed, or renovated. The agency responsible for the State Trunkline System is the Michigan Department of Transportation (MDOT). The amount of funding projected by MDOT to be available for system preservation activities (such as road repaving, rehabilitation, or reconstruction) is shown in Table 4.

Base and Assumptions used by MDOT in its Highway Funding Forecast
MDOT Statewide Transportation Planning Division analyzed historical state highway revenue and historical federal obligations. State revenue and federal revenue growth rates were calculated. The revenue growth used in the long range revenue forecast for the near term has virtually flat rates to reflect the current economic conditions. For some years the state forecast assumes additional revenue through a variety of mechanisms to match federal aid. In order to take a conservative approach with the federal and state revenue forecasts beyond the near term, 90% of the 10 year average growth rates were used. The resulting rates beyond the near term are: federal 2.39% annual growth, and state 2.16% annual growth.

Total estimated federal revenue: $29.8 billion
Total estimated state revenue: $26.3 billion

Revenue available for Capital outlay
Debt service, non-capital uses and routine maintenance are deducted from the estimated federal and state revenue. The resulting FY2014-2040 total estimated revenue available for highway capital outlay is $34.3 billion (in future year dollars).

Methodology for MPO Allocation of Capacity Improvement/New Road Dollars
The trunkline capacity improvement and new road (CI/NR) projects in the Long Range Revenue Forecast are in the 2014-2018 Five-Year Transportation Program, have earmarks or are on corridors of National Significance. They were reviewed and vetted by MDOT Leadership. The revenue remaining after accounting for the CI/NR projects is available for the preservation program. Additional committed CI/NR commitments will be shown in future year revenue projections or as Illustrative Projects if funding is not committed at this time.

Methodology for MPO Allocation of Highway Program Preservation Dollars

A ten-year history (2004-2013) of highway capital program investments (excluding CI/NR) was compiled. Each MPO's share was calculated by dividing the MPO investment by the total statewide investment over the ten year time frame. Next, the FY2014-2040 total estimated revenue for preservation was multiplied by each MPO share of historic investments. The result is FY2014-2040 total estimated revenue for preservation for each MPO.

Based on this methodology the GVMC area will receive 4.8% of the preservation funding available in the forecast period for a total of $1.4 billion. This amount includes trunkline road and bridge rehabilitation and reconstruction, Capital Preventive Maintenance, CMAQ, Traffic/Safety and related preservation projects. Projected resources available for highway preservation and bridge projects in the portion of the State Trunkline System in West Michigan, FY2014-2040 (millions of Dollars) are shown in Table 4 below.

Table 4. Long-Range Preservation Revenue Forecast, 2014-2040

Fiscal Year(s)	Amount
2014	$45.87
2015	$42.36
2016	$39.94
2017	$39.61
2018	$36.81
2019	$38.33
2020	$36.89
2021-2025	$235.90
2026-2030	$265.34
2031-2035	$289.71
2036-2040	$345.62
Total:	$1,416.38

Part VI. Discussion of Innovative Financing Strategies--Highway

A number of innovative financing strategies have been developed over the past two decades to help stretch limited transportation dollars. Some are purely public sector; others involve partnerships between the public and private sectors. Some of the more common strategies are discussed below.

Toll Credits: This strategy allows states to count funding they earn through tolled facilities (after deducting facility expenses) to be used as "soft match," rather than using the usual cash match for federal transportation projects. States have to demonstrate "maintenance of effort" when using toll credits—in other words, they must show that the toll money is being used for transportation purposes and that they're not reducing their efforts to maintain the existing system by using the toll credit program. Toll credits have been an important source of funding for the State of Michigan in the past because of the three major bridge crossings and one tunnel crossing between Michigan and Ontario. Toll credits have also helped to partially mitigate the funding crisis in Michigan, since insufficient non-federal funding is available to match all of the federal funding apportioned to the state.

State Infrastructure Bank (SIB): Established in a majority of states, including Michigan. Under the SIB program, states can place a portion of their federal highway funding into a revolving loan fund for transportation improvements such as highway, transit, rail, and intermodal projects. Loans are available at 3% interest and a 25-year loan period to public entities such as political subdivisions, regional planning commissions, state agencies, transit agencies, railroads, and economic development corporations. Private and nonprofit corporations developing publicly owned facilities may also apply. In Michigan, the maximum per-project loan amount is $2 million. The Michigan SIB had a balance of approximately $12 million in FY 2011.
Transportation Infrastructure Finance and Innovation Act (TIFIA): This nationwide program, significantly expanded under MAP-21, provides lines of credit and loan guarantees to state or local governments for development, construction, reconstruction, property acquisition, and carrying costs during construction. TIFIA enables states and local governments to use the borrowing power and creditworthiness of the United

States to finance projects at far more favorable terms than they would otherwise be able to do on their own. Repayment of TIFIA funding to the federal government can be delayed for up to five years after project completion with a repayment period of up to 35 years. Interest rates are also low. The amount authorized for the TIFIA program in FY 2014 nationwide is $1.0 billion.

Bonding: Bonding is borrowing, where the borrower agrees to repay lenders the principal and interest. Interest may be fixed over the term of the bond or variable. The amount of interest a borrower will have to pay depends in large part upon its perceived credit risk; the greater the perceived chance of default, the higher the interest rate. In order to bond, a borrower must pledge a reliable revenue stream for repayment. For example, this can be the toll receipts from a new transportation project. In the case of general obligation bonds, future tax receipts are pledged.

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

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

Public-Private Partnerships (P3): Funding available through traditional sources, such as motor fuel taxes, is not keeping pace with the growth in transportation system needs. Governments are increasingly turning to public-private partnerships (P3) to fund large transportation infrastructure projects. An example of a public-private partnership is Design/Build/Finance/Operate (DBFO). In this arrangement, the government keeps ownership of the transportation asset, but hires one or more private companies to design the facility, secure funding, construct the facility and operate it, usually for a set period of time. The private-sector firm is repaid most commonly through toll revenue generated by the new facility. Sometimes, as in the case of the Chicago Skyway and the Indiana Toll Road, governments grant exclusive concessions to private firms to operate and maintain already-existing facilities in exchange for an up-front payment from the firm to the government. The firm then operates, maintains, and collects tolls on the facility during the period of the concession, betting that it will collect more money in tolls then it paid out in operations costs, maintenance costs, and the initial payment to the government.

Part VII. Highway Operations and Maintenance

Construction, reconstruction, repair, and rehabilitation of roads and bridges are only part of the total cost of the highway system. It must also be operated and maintained. *Operations and maintenance* is defined as those items necessary to keep the highway infrastructure functional for vehicle travel, other than the construction, reconstruction, repair, and rehabilitation of the infrastructure. Operations and maintenance includes items such as snow and ice removal, pothole patching, rubbish removal, maintaining the right-of way, maintaining traffic signs and signals, clearing highway storm drains, paying the electrical bills for street lights and traffic signals, and other similar activities, and the personnel and direct administrative costs necessary to implement these projects. These activities are as vital to the smooth functioning of the highway system as good pavement.

Federal transportation funds cannot be used for operations and maintenance of the highway system. Since the TIP and MTP only include federally-funded transportation projects (and non-federally funded projects of regional significance), they do not include operations and maintenance projects. While in aggregate, operations and maintenance activities *are* regionally significant (individual projects do not rise to that level). However, federal regulations require an estimate of the amount of funding that will be spent operating and

maintaining the federal-aid eligible highway system over the FY 2014-2040 MTP period. This section of the Financial Plan provides an estimate for GVMC and details the method used to estimate these costs.

The Statewide operations and maintenance annual budget is approximately $275 million in FY 2014 for the state trunk line highway system (roads with "I-," "US-," and "M" designations). This amount varies annually. The Grand Region's component of the total is approximately $22 million per year. Of that, the estimated expenditures in the GVMC MPO area, for operations and maintenance activities is approximately $11.0 million. ITS/WMTOC costs are not included in these amounts, and the $275 million does not include road and bridge CPM, CSM, rehabilitation, reconstruction and/or bridge replacement projects, new roads or capacity improvement/modernization projects, which are listed separately in the TIP/MTP. Since MDOT's operations and maintenance funding comes from state motor fuel taxes (the Michigan Transportation Fund), the agreed-upon rate of increase for state funds (0.4% annually) was applied to derive the operations and maintenance costs for FYs 2015-2017, increasing to 2.16% annually from 2018 through 2040.

Local communities' and agencies' costs to operate and maintain their portions of the federal-aid highway system were estimated through surveys of the two county road commissions. By determining the total lane mileage of all roads and total lane mileage of federal-aid eligible roads under each respondent's jurisdiction, it was possible to derive an estimated local per-lane-mile operations and maintenance expenditure. This was then applied to the total lane mileage of federal-aid eligible roads within GVMC to get a region-wide total for FY 2013. The assumption in this case is that local communities and agencies are spending every available operations and maintenance dollar, so funds expended equal funds available. Much of local agencies' operations and maintenance funding comes from the Michigan Transportation Fund, so the agreed-upon rate of increase for state funds (0.4% annually) was applied to derive the operations and maintenance costs for FYs 2014 through 2017, then increasing to 2.16% annually from 2018 through 2040. MDOT and local operations and maintenance funding available is summarized in Table 5.

Table 5. Projected Available Highway Operations and Maintenance (O&M) Funding, Federal-Aid Eligible Roads, FY 2014 through FY 2040 (Millions of Dollars).

FY	MDOT	Local Agencies	Total
2014	$11	$8.07	$19.07
2015	$11.04	$8.10	$19.14
2016	$11.09	$8.13	$19.22
2017	$11.13	$8.17	$19.30
2018	$11.37	$8.34	$19.71
2019	$11.62	$8.52	$20.14
2020	$11.87	$8.71	$20.58
2021 - 2025	$63.31	$46.43	$109.74
2026 - 2030	$70.45	$51.67	$122.11
2031 - 2035	$78.39	$57.49	$135.88
2036 - 2040	$87.23	$63.98	$151.21
TOTAL	$378.50	$277.60	$656.10

Part VIII. Highway Commitments and Projected Available Revenue

The MTP must be fiscally constrained; that is, the cost of projects programmed in the TIP/MTP cannot exceed revenues "reasonably expected to be available" during the 26 year period. Funding for core programs such as NHP, STP, HSIP, and CMAQ are expected to be available to the region based on historical trends of funding from earlier, similar programs in past federal surface transportation laws. Likewise, state funding from the Michigan Transportation Fund (MTF) and the hybrid state/federal programs, Transportation Economic Development Fund Categories C and D, are also expected to be available between FY 2014-2040. Funds from other programs are generally awarded on a competitive basis and are therefore impossible to predict. In these

cases, projects are not amended into the TIP or MTP until proof of funding availability (such as an award letter) are provided. Funds from federal competitive programs are not included in the revenue forecast.

All federally-funded projects must be in the TIP/MTP. Additionally, any non-federally funded but regionally significant project must also be included. In these cases, project submitters demonstrate that funding is available and what sources of non-federal funding are to be utilized.

Projects programmed in the TIP/MTP are known as *commitments*. As mentioned previously, commitments cannot exceed funds reasonably expected to be available. Projects must also be programmed in year of expenditure dollars, meaning that they must be adjusted for inflation to reflect the estimated purchasing power of a dollar in the year the project is expected to be built. The MTPA/Financial Work Group has decided on an annual inflation rate of 4% for projects over the MTP period. This means that a project costing $100,000 in FY 2014 is expected to cost $104,000 in FY 2015, $108,160 in FY 2016, and $112,486 in FY 2017 and so on. Since the amount of federal funds available is only expected to increase by 2% from 2014 through 2017 and then no growth for 2018 & 2019 then a 2.39% per year thereafter, and state funds by only 0.4% per year over the four-year TIP period and 2.16% thereafter, this means that less work can be done each year with available funding.

Table 6 is known as a fiscal constraint demonstration. The demonstration is provided to the Michigan Department of Transportation, the Federal Highway Administration, and the Federal Transit Administration in order to show that the cost of planned projects does not exceed the amount of funding reasonably expected to be available over the 26 year MTP period. This is a summary. To see a detailed list of projects, please refer to Chapter 17.

Table 6. Summary Fiscal Constraint Demonstration for the FY 2014 through FY 2040 MTP Period (Millions of Dollars).

Table Number/Fund Source	Funding Amount Available	Amount Programmed	Net Balance
Table 1 – Federal Revenue	$553.79	-	-
Table 2 – MTF	$2,160.2	-	-
Table 3 – TEDF Category C & D	$26.68	-	-
Table 4 – Preservation Revenue	$1,416.38	-	-
Table 5 – O & M Funding	$656.10	-	-
Total	$ 4,813,150,000.00	$ 4,813,150,000.00**	$ 0.00

*Net Balance = Available funding less cost of programmed projects. A positive net balance means that available funding exceeds programmed project cost, a negative balance means that programmed project costs exceed available funding, and a zero net balance indicates that programmed project costs equal available funding. **See Transportation Project list, Chapter 17.

Part IX. Transit Financial Forecast—Federal

Sources of Federal Transit Funding
Federal revenue for transit comes from federal motor fuel taxes, just as it does for highway projects. Some of the motor fuel tax collected from around the country is deposited in the Mass Transit Account of the Highway Trust Fund (HTF). As of the start of fiscal year 2013 (October 1, 2012), the balance of the federal Mass Transit Account was $2.49 billion. Federal transit funding is similar to federal highway funding in that there are several core programs where money is distributed on a formula basis and other programs that are competitive in nature. Here are brief descriptions of some of the most common federal transit programs.

Section 5307: This is the largest single source of transit funding that is apportioned to Michigan. Section 5307 funds can be used for capital projects, transit planning, and projects eligible under the former Job Access Reverse Commute (JARC) program (intended to link people without transportation to available jobs). Some of the funds can also be used for operating expenses, depending on the size of the transit agency. 1% of funds received are to be used by the agency to improve security at agency facilities. Distribution is based on formulas

including population, population density, and operating characteristics related to transit service. Urbanized areas of 200,000 in population or larger receive their own apportionment. Areas between 50,000 and 199,999 population are awarded funds by the governor from the governor's apportionment.

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

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

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

Section 5339, Bus and Bus Facilities: Funds will be made available under this program to replace, rehabilitate, and purchase buses and related equipment, as well as construct bus-related facilities. Each state will receive $1.25 million, with the remaining funding apportioned to transit agencies based on various population and service factors.

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

Base and Assumptions Used in Forecast Calculations of Federal Transit Funds
The base for the federal portion of the transit financial forecast is the amount of federal funding each transit agency received in the region in FY 2013, the first year of MAP-21. It was determined (by the MTPA Financial Workgroup) to keep revenues at the FY2013 levels for FY2014 and 2015. For FY2016 through 2019, the annual growth rate will be 1.65% (90% of the 5 year average). Beyond FY2019, the annual growth rate will be 3.68% (90% of the 10 year average). Table 7 shows the federal transit forecast for the FY2014-2040 MTP period.
Table 7. Federal Transit Revenue Projections for the transit agencies in the GVMC area FY2014-2040 MTP (Millions of Dollars).

FY	Sec 5307	Sec 5310	Sec 5311	Sec 5339	Total
2014	$8.7	$.44	$0.00	$.99	$10.17
2015	$8.7	$.44	$0.00	$.99	$11.17
2016	$8.9	$.45	$0.00	$1.01	$10.34
2017	$9.0	$.45	$0.00	$1.02	$10.51
2018	$9.2	$.46	$0.00	$1.04	$10.69
2019	$9.3	$.47	$0.00	$1.06	$10.86
2020	$9.7	$.48	$0.00	$1.10	$11.26
2021 - 2025	$54.0	$2.70	$0.00	$6.12	$62.83
2026 - 2030	$64.7	$3.24	$0.00	$7.33	$75.27
2031 - 2035	$77.5	$3.88	$0.00	$8.78	$90.18
2036 - 2040	$92.9	$4.65	$0.00	$10.52	$108.04
Total	$352.7	$17.66	$0.00	$39.94	$410.30

Part X. Transit Financial Forecast—State

Sources of State Transit Funding
The majority of state-level transit funding is derived from the same source as state highway funding: the state tax on motor fuels. Act 51 stipulates that 10% of receipts into the MTF, after certain deductions, is to be deposited in a subaccount of the MTF called the Comprehensive Transportation Fund (CTF). This is analogous to the Mass Transit Account of the Highway Trust Fund at the federal level. Additionally, a portion of the state-level auto-related sales tax is deposited in the CTF. Distributions from the CTF are used by public transit agencies for matching federal grants and also for operating expenses. Approximately $162 million was distributed to the CTF in FY 2013.

Base and Assumptions Used in Forecast Calculations of State Transit Funds
The base for calculations of state transit funds is the amount transit agencies in the GVMC area received in FY 2013. For state match funds, the MTPA Financial Workgroup determined that the growth rate will be the same as the federal growth rates as discussed above. The state-level CTF distributions to the GVMC transit agency is shown in Table 8, broken down by state match and state operating.

Table 8. State Transit (CTF) Revenue Projections *in the GVMC* area for the 2014-2040 MTP (Millions of Dollars).

FY	Sec 5307 State Match	State Match for JARC-Type Projects	Sec 5310 (Sen/Dsbld) Cap State	Sec 5339 Bus & Bus Facilities (State)	Local Operating (addl. CTF)	Total
2014	$1.75	$0.00	$.09	$.20	$12.60	$14.6
2015	$1.75	$0.00	$.09	$.20	$12.60	$14.6
2016	$1.78	$0.00	$.09	$.20	$12.60	$14.7
2017	$1.80	$0.00	$.09	$.20	$12.60	$14.7
2018	$1.83	$0.00	$09	$.21	$12.60	$14.7
2019	$1.87	$0.00	$.09	$.21	$12.60	$14.8
2020	$1.94	$0.00	$.10	$.22	$12.64	$14.9
2021 - 2025	$10.80	$0.00	$.54	$1.22	$63.93	$76.5
2026 - 2030	$12.94	$0.00	$.65	$1.47	$65.12	$80.2
2031 - 2035	$15.50	$0.00	$.78	$1.76	$66.33	$84.4
2036 - 2040	$18.60	$0.00	$.93	$2.10	$67.57	$89.2
Total	$70.54	$0.00	$3.53	$8.00	$351.17	$433.2

The third column of Table 7, State Match for JARC-Type Projects, shows the maximum amount of match that the state will provide to transit agencies using some of their Section 5307 funding for projects eligible under the Job Access and Reverse Commute program. ITP does not have any funding from either the Federal Transit Administration or state for this program. This program was a stand-alone under the old SAFETEA-LU law, but has been folded into the Sec 5307 program under MAP-21. JARC projects are intended to connect persons without an automobile to job opportunities in many parts of the region.

Part XI. Transit Financial Forecast—Local

Sources of Local Transit Funding
Major sources of local funding for transit agencies include fare-box revenues, general fund transfers from city governments, and transportation millages. All transit agencies in the GVMC area collect fares from riders.

This fare-box funding totaled approximately $12.5 million in 2013. ITP collected a millage of approximately $14.2 million in 2013.

Base and Assumptions Used in Forecast Calculations of Local Transit Funds
The base amounts for fare-box, general fund transfers, and millages are derived directly from ITP The Rapid. Presuming that transit agencies spend all money that they receive each year, this data can be used for revenue projections as well. In addition, the agencies provide data on other miscellaneous funding, such as advertising and contracts (Table 9). The local amounts include fare-box receipts, general fund transfers, millages, and miscellaneous income.

Table 9. Local Transit Revenue Projections in the GVMC area for the 2014-2040 MTP Period (Millions of Dollars).

FY	Amount
2014	$40.1
2015	$42.1
2016	$42.8
2017	$43.5
2018	$44.2
2019	$45.0
2020	$46.6
2021 - 2025	$260.2
2026 - 2030	$311.7
2031 - 2035	$373.5
2036 - 2040	$447.4
Total:	$1,697.2

Part XII. Discussion of Innovative Financing Strategies--Transit

Sources of funding for transit are not limited to the federal, state, and local sources previously mentioned. As with highway funding, there are alternative sources of funding that can be utilized to operate transit service. Bonds can be issued. (See discussion of bonds in the "Innovative Financing Strategies—Highway" section.) The federal government also allows the use of toll credits to match federal funds. Toll credits are earned on tolled facilities, such as the Blue Water Bridge in Port Huron. Regulations allow for the use of toll revenues (after facility operating expenses) to be used as "soft match" for transit projects. Soft match means that actual money does not have to be provided—the toll revenues are used as a "credit" against the match. This allows the actual toll funds to be used on other parts of the transportation system, thus stretching the resources available to maintain the system.

Part XIII. Transit Capital and Operations

Transit expenditures are divided into two basic categories, capital and operations. *Capital* refers to the physical assets of the agency, such as buses and other vehicles, stations and shelters at bus stops, office equipment and furnishings, and certain spare parts for vehicles. *Operations* refers to the activities necessary to keep the system operating, such as driver wages and maintenance costs. Most expenses of transit agencies are operations expenses.

Data on capital and operating costs was provided directly from ITP. The four-year average split (from previous TIPs) is 34.7% capital and 65.3% operations for ITP-The Rapid within GVMC. It is assumed that this basic split will continue for the FY 2014 - 2040 MTP period. It is also assumed that the transit agencies are spending all available capital and operations funding, so that the amount expended on these items is roughly equal to

the amount available. Table 10 shows the amounts estimated to be available for transit capital and operations during the FY 2014 - 2040 MTP period.

Table 10. Anticipated amounts for transit agencies in the GVMC area to expend on transit capital and transit operations for the 2014-2040 MTP (Millions of Dollars).

FY	Capital	Operations	Total
2014	$10.71	$40.0	$50.71
2015	$10.21	$40.0	$50.21
2016	$16.45	$40.66	$57.11
2017	$23.99	$41.33	$65.32
2018	$11.64	$42.01	$53.66
2019	$18.93	$42.71	$61.63
2020	$14.95	$44.28	$59.23
2021 - 2025	$142.62	$257.68	$400.30
2026 - 2030	$170.86	$308.71	$479.58
2031 - 2035	$204.70	$369.85	$574.56
2036 - 2040	$245.24	$443.10	$688.35
Total:	$870.31	$1,670.34	$2,540.65

Part XIV. Transit Commitments and Projected Available Revenue

The MTP must be fiscally constrained; that is, the cost of projects programmed in the MTP cannot exceed revenues "reasonably expected to be available" during the 26 year MTP period. Funding for core programs such as Section 5307, Section 5339, Section 5310, and Section 5311 are expected to be available to the region based on historical trends of funding from earlier, similar programs in past federal surface transportation laws. Likewise, state funding from the Comprehensive Transportation Fund (CTF), and local sources of revenue such as fare-box, general fund transfers, and millages, are also expected to be available during the FY 2014 - 2040 MTP period. Funds from other programs are generally awarded on a competitive basis and are therefore impossible to predict. In these cases, projects are not amended into the MTP until proof of funding availability (such as an award letter) is provided. Funds from federal competitive programs are not included in the revenue forecast.

All federally funded projects must be in the MTP. Additionally, any non-federally-funded but regionally significant project must also be included. In these cases, project submitters demonstrate that funding is available and what sources of non-federal funding are to be utilized.

Table 11 shows the summary financial constraint demonstration for transit. The demonstration is provided to the Michigan Department of Transportation, Federal Highway Administration, and Federal Transit Administration in order to show that the cost of planned projects does not exceed the amount of funding reasonably expected to be available over the FY 2014 - 2040 MTP period.

Table Number/Fund Source	Funding Amount Available	Table 10 - Capital & Operations	Net Balance
Table 7 – FTA Revenue	$410.30	-	-
Table 8 – State Revenue	$433.2	-	-
Table 9 – Local Revenue	$1,697.2	-	-
Total	$2,540.7	$2,540.65	$.05

Part XV. Analysis of Funding and Needs

While the previous tables have shown fiscal constraint (i.e., that programmed funds do not exceed available revenues) the fact remains that the needs of the transportation system substantially outweigh the funding available to address them. A brief discussion of highway funding illustrates the problem.