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103 YEARS OF UNCOMPROMISING POLICY RESEARCH

Evaluating Michigan's Options to Increase Road Funding

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Evaluating Michigan's Options to Increase Road Funding

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Key Takeaways

1. In 2015, Michigan enacted a funding package that will eventually generate $1.2 billion annually for state and local road projects. Even after it is fully implemented, the state will continue to be plagued with poor road conditions.
2. Resources to address our current road needs can come from three main sources: increasing dedicated taxes, diverting existing state revenues, and/or borrowing. Each choice presents its own set of advantages and obstacles.
3. Michigan taxpayers will be well served if reforms: disentangle motor fuels from the Sales Tax, prudently use all available resources for this funding priority, use bonding authority judiciously, and address how revenues are distributed and employed.

Summary

Michigan's roads are in relatively bad shape and without an infusion of new resources they are destined to deteriorate further. In 2018, only 77 percent of state operated roads were graded in "good" or "fair" condition. By 2025, that number is expected to drop below 50 percent (see **Chart A**). Facing worsening conditions, a $1.2 billion road funding package was enacted in 2015, with half the money coming from increased taxes and the other half diverted from the General Fund. While the state began collecting an additional $600 million in fuel taxes and registration fees in Fiscal Year (FY)2017, the full $600 million diversion from the General Fund will not be realized until FY2021.

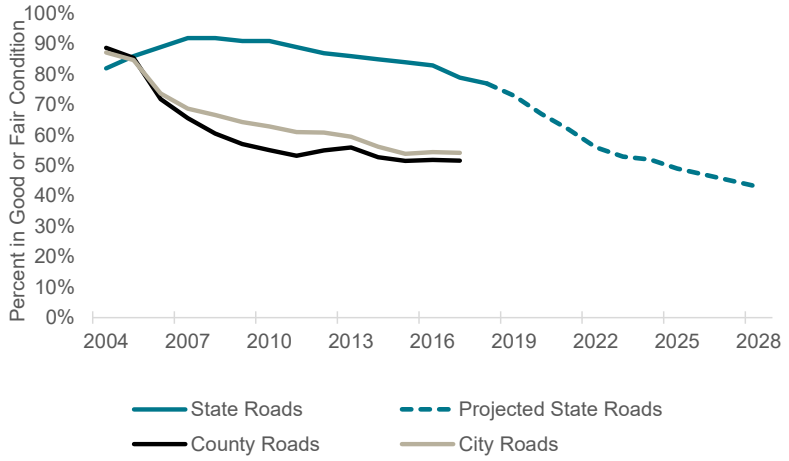
In the interim, road funding needs have grown. The 21st Century Infrastructure Commission estimated that road infrastructure needs $2.2 billion annual funding beyond the 2015 package to bring most roads up to at least fair condition. The Senate Fiscal Agency recently released a report that says even that might be an underestimate, as the state has continued to underinvest in roads since that report.

The vacuum created by the lack of road funding is being filled by other costs. The Road Improvement Project estimates that Michigan's poor roads cost drivers $562 a year on vehicle maintenance, as well as the costs of lost time in congestion and road-related accidents. Michigan needs to "fix the damn roads."

Additional road funding can come from three main sources: new taxes, diverting existing state revenues, and/or borrowing. Each track presents its own set of advantages and obstacles.

Chart A

Past and Projected Michigan Road Conditions 2004-2028



Note: This chart combines Charts 1 and 13 from the body of the report.

Source: House Fiscal Agency and the Michigan Transportation Asset Management Council.

Transportation Taxes

Road-related tax revenues – primarily motor fuel taxes ($1.4 billion in FY2018) and motor registration fees ($1.3 billion) – are deposited into the Michigan Transportation Fund (MTF) and distributed based on Public Act 51 of 1951 (Act 51). The Michigan Department of Transportation (technically the State Trunkline Fund, or STF) receives 39.1 percent, county road commissions receive 39.1 percent, and city and village road commissions receive the remaining 21.8 percent.

Despite being the state's largest source for road funding, the fuel tax has a long-term structural problem. Cars are becoming more fuel efficient; new vehicles averaged 13.1 miles per gallon in 1975, while new cars in 2017 averaged 25.2 miles per gallon. Fuel tax collections will decline long-term without continuous rate increases. From FY1997, when the state raised the Gas Tax from 15 to 19 cents per gallon, to FY2016, the year before the fuel tax was raised from 19 to 26.3 cents per gallon, collections per 10,000 miles traveled declined 12 percent (see **Chart B**). Over the long term, the fuel tax rate would have to be raised faster than inflation to maintain funding levels.

Motor vehicle registration fees have fared much better. Revenues nearly quadrupled from FY1983 when the fee structure changed to their peak amount in FY2004, from $237.7 million to $935 million. During the same period, fees only increased 30 percent.

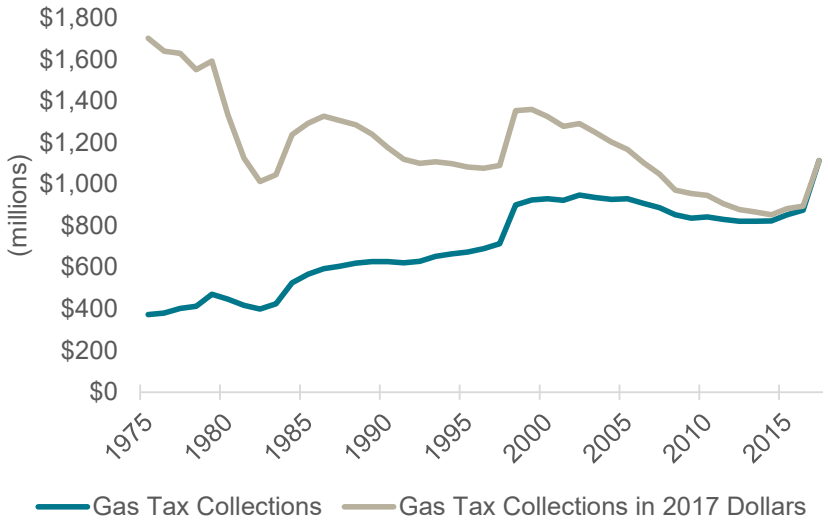
As a result of the 2015 tax law changes, Michigan has one of the highest fuel tax rates, and one of the highest registration fees. Yet state road spending is towards the bottom of the national rankings. Michigan motor vehicle registration fee revenues per capita ranked 14th highest in the nation prior to the 20 percent increase scheduled by the 2015 road funding package. While the state's motor fuel tax rate ranks 19th highest in the nation, the total of all taxes paid at the pump raises Michigan to 5th highest. Part of the issue is that motor fuel is included in the base of the Sales Tax. Revenue from that tax does not go to roads. A small portion of the tax goes to public transit projects, but the lion's share goes to schools and revenue sharing.

Diverting Revenues

Rather than raise new revenues to fund roads, policymakers could opt to divert existing revenues. The 2015 road funding package diverts resources that had been destined for the General Fund, the state's main discretionary account. However, funding diversions will reduce funding available for other state functions. The Senate Fiscal Agency estimates that only $5.25 billion of the $11 billion General Fund is truly discretionary; this includes the current allocation for roads. When the 2015 road package is in full effect in FY2021, this will represent more than five percent of the General Fund.

Chart B

Gasoline Tax Revenues, FY1975-FY2017

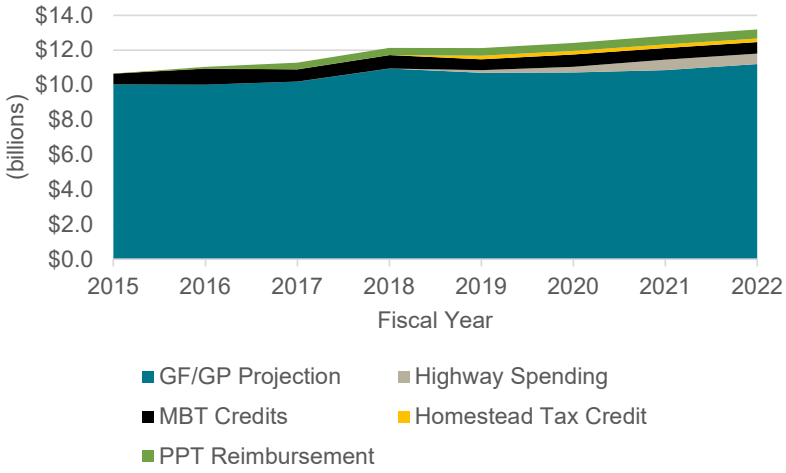


Source: Annual Report of Michigan's Treasurer; Citizens Research Council calculations.

Over the short term, General Fund growth will be limited. In fact, the General Fund is not projected to exceed FY2018 levels until FY2022 (see **Chart C**). One way to free up General Fund resources without making drastic cuts is to increase the proportion of higher education spending coming from the School Aid Fund. Currently, about 62 percent of the $1.6 billion higher education budget comes from the General Fund.

Chart C

General Fund Revenue Growth and Projections FY2015-FY2022



Sources: House Fiscal Agency, Senate Fiscal Agency, and Michigan Treasury

Alternatively, some of the funds could come from disentangling fuel purchases from the Sales Tax. If fuels were exempted from the Sales Tax, the legislature could increase the fuel tax an equivalent amount without increasing prices at the pump. The total revenue this could generate fluctuates depending on the rate set; but based on a $.154 Sales Tax on gasoline and a $.164 Sales Tax on diesel, a fuel tax increase to replace the Sales Tax could raise nearly $900 million annually. Policymakers would likely seek to backfill the reduced Sales Tax revenues to hold schools and local governments harmless.

What about Borrowing?

The state could borrow to finance road improvements through general obligation bonds or through State Trunkline Fund (STF) bonds.

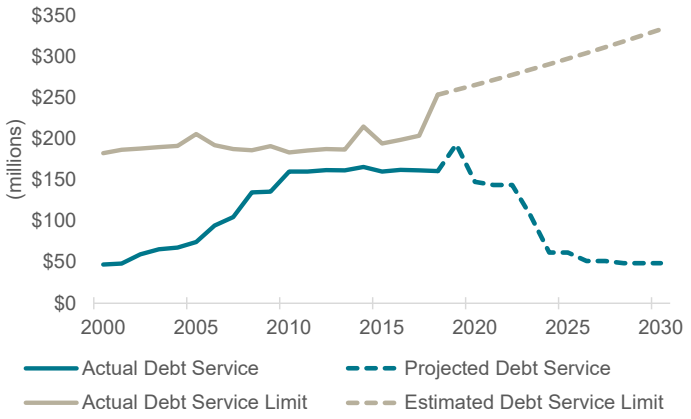
STF bonds are revenue bonds; they are backed by transportation-dedicated revenues. The Michigan Constitution of 1963 allows the legislature to authorize transportation bonds. Through Act 51, the legislature has delegated this authority to the State Transportation Commission (STC). The STF must maintain a 2-to-1 coverage ratio by state law; however, current STC policy requires at least a 4-to-1 coverage ratio. While STF borrowing has been limited in recent years, the Michigan Department of Transportation (MDOT) is still making $160 million in debt service payments annually from borrowing incurred almost 20 years ago (see **Chart D**). Based on current revenues and state restrictions, the state could not sell more than $1 billion STF bonds at the current time.

This option could be used to fix only a small portion of the road system, albeit a significant portion. STF bonds only benefit state roads; new bond issuances would not go towards county or city/village roads.

General obligation bonds function quite differently. They are authorized separately, and are backed by the full faith and credit of the state, meaning payments are constitutionally required to be appropriated before other programs are funded. General obligation bonds also require a vote of the people to be approved, limiting the legislature's ability to issue bonds. The state

Chart D

Actual and Projected STF Debt Service Payments FY2000-FY2030



Note: Projected debt service includes debt service payments owed on Strategic Fund bonds for the I-75 Improvement Project (see **Box** on page 15).

Source: Michigan Department of Transportation, Michigan Comprehensive Annual Financial Report, and Citizens Research Council calculations.

does not have any specific limitations to the amount that can be borrowed this way, though debt service payments will directly compete with General Fund obligations. General obligation bond proceeds would be distributed at the legislature's discretion.

Borrowing can finance a rebuild of state roads, or other large-scale reconstruction that would otherwise take several years. This can quicken the timeframe of projects, and bring the economic benefits of road reconstruction sooner. It also serves as an economic stimulus, by increasing the demand for construction work in the state. While there are benefits, borrowing can hamstring the state long term. Without new revenues, increased borrowing will reduce the state's ability to maintain road conditions in the long term. It also would export the costs of road improvement to future generations; while road conditions improve immediately, the construction costs are paid over two to three decades.

Distributive Considerations

Act 51 plays a significant role in the efficiency of state road funding. MDOT is only responsible for about 10,000 miles of road; county road agencies are responsible for about 90,000 miles, while city and village road agencies are responsible for about 21,000 miles. Despite being a small fraction of the total system, state roads are responsible for more than 50 percent of all travel.

While state, county, and city/village road systems are all in poor shape, the local road agencies are largely beholden to the state for resources to care for their roads. Beyond distributions from Act 51, counties and cities can only raise money through property taxes or a city income tax.

In addition to a general lack of resources being made available for road care, the revenue distribution in Act 51 is rather inefficient. It does not consider road usage or condition. Although all three types of road agencies clearly have needs, it has been years since the formula dividing the funds among them has been revised. Nor have the methods for dividing county or municipal funds been revised. Division of the funds among the local road agencies is primarily based on road miles, population, and vehicle registrations. These rudimentary measures do not begin to address funding to the highest levels of need. Rural areas contain 69 percent of roads, yet represent 29.8 percent of road usage.

Grounding Principles When Considering Road Funding Options

Despite an enhancement of road funding in 2015, the systems needs are quickly outpacing current resources. The cause of the problem is relatively simple: the state has underinvested in road maintenance, and a significant portion of state roads are on the cusp of deteriorating beyond fair condition. Even as the 2015 road funding package improves Michigan's resources, the phase-in of revenues delays the investment in roads and the overall funding is still not adequate.

The unfortunate truth is that finding additional dollars to fund the state's roads is not an easy problem to solve. Michigan has one of the highest fuel tax levies and the most expensive registration fees in the nation; but state road spending per mile traveled is towards the bottom. Additional use of the state's limited General Fund dollars will not improve the roads without new revenues or steep cuts elsewhere. Fixing the roads will require choices that reflect policy priorities and political realities.

Here are some principles that should be reflected in any broad funding package.

* Taxes collected at the pump are distributed differently in Michigan than in other states. While most people intuitively tie taxes levied at the pump to road funding, fuels are subject to the Sales Tax and those collections are used to fund schools and make revenue sharing payments. The disentanglement of motor fuels and the Sales Tax should be a priority. Exempting motor fuels from the Sales Tax and increasing fuel tax rates an equal amount would make taxation on motor fuels more transparent and promote the user fee approach engrained in road funding in Michigan.

* If policymakers decide improving the state's road infrastructure is indeed a high priority, policy should reflect that reality. The identification of resources to direct at this issue should not be restrained by past use. However, funding for priorities is zero-sum. Let's not solve this problem by creating new problems.

* Bonds can be an effective tool when making road improvements, but are not a panacea. In the past, the state issued bonds without providing sufficient revenue to repay the debt and maintain road conditions. When looking for funds to fix the roads, policymakers should treat bonds for what they are: an instrument to finance large-scale projects, rather than as a way to increase funding for short-term maintenance. If used improperly, debt service payments can limit the ability to maintain road conditions, and Michigan roads will revert back to current conditions.

* The distribution of tax revenues should better reflect road condition and usage. The current Act 51 allocation ignores road capacity, which is a true indicator of costs, and road usage, which is a key driver of degradation. It does not direct funds to the roads in the poorest condition. If funding does not reflect the realities on the ground, increases will have less of an effect on road condition, while some road agencies will be over-funded. Reform of Act 51 should accompany efforts to raise new revenues.

* Raising revenue to actually fix the roads, whether through cutting spending in other state programs or increasing road user fees, will require a significant investment from the state. Boosting funding in small amounts, or for short periods of time, will mean new construction and maintenance will not be maintained as efficiently. If the legislature chooses to increase funding, those increases should be sufficient to reconstruct roads to high standards and maintain them throughout their life cycles. Partial measures and kicking the can down the road will not create a lasting improvement in Michigan's road conditions.

Road infrastructure becomes more expensive to fix as it degrades, and a significant portion of Michigan's roads are close to falling into 'poor' condition. Making a decision on how to finance roads will not be easy, but is a decision that cannot be put off any longer.

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Evaluating Michigan's Options to Increase Road Funding

Introduction

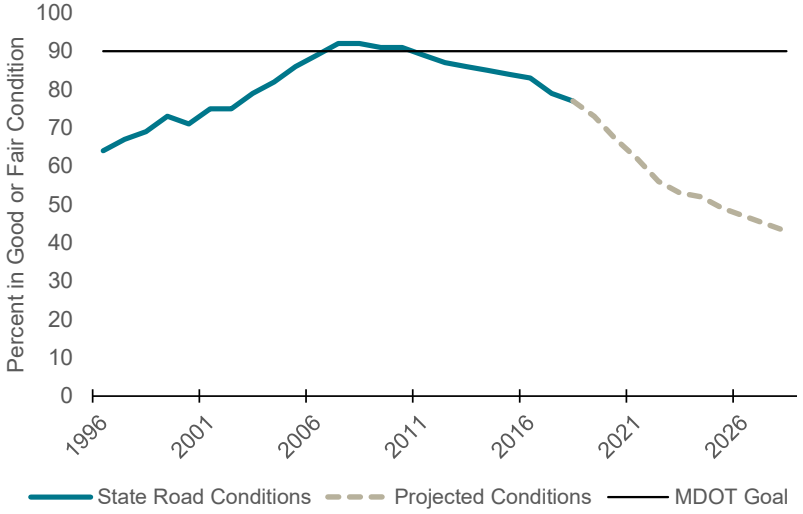
Michigan has been dealing with poor road conditions for some time. By 2015, the condition of roads in Michigan had begun to deteriorate rapidly. Funding was not enough to reverse this trend. To address the situation, state policymakers agreed to infuse an additional $1.2 billion annually into transportation infrastructure; $600 million annually from increasing on-going transportation taxes (vehicle registration and fuel taxes) was provided starting in 2017, while $600 million was re-directed to highway purposes annually from state Personal Income Tax revenue (originally slated for deposit in the state General Fund).[a] The Personal Income Tax allocation was phased in, beginning with $175 million in Fiscal Year (FY)2019 and gradually increasing to $600 million in FY2021 and thereafter.

Despite the increase in funding, there is little evidence the 2015 funding package solved the state's problem. While the state has yet to see the full benefits of the $1.2 billion in funding from the 2015 package, the new revenues are not expected to go far enough to address the state's road funding needs.

The 21st Century Infrastructure Commission, created by Governor Snyder to evaluate the necessity and cost of infrastructure repairs, estimated the state would need an additional $2.2 billion annually to bring most high-use roads to at least fair condition.[1] This estimate was based on road needs in 2016; the Senate Fiscal Agency estimates that funding has fallen more than $1 billion below needs each year, and the $2.2 billion estimate understates the current funding gap.[2] The Michigan Department of Transportation (MDOT) had previously set a pavement condition goal of keeping 90 percent of the roads in "good" or "fair" condition. Only 79 percent of state roads met that threshold in 2017.[3] Even worse, the condition of a large portion of those roads are soon to be downgraded. More than one-half of state trunkline roads are projected to be graded below fair condition by 2025 (see **Chart 1**).[4]

Chart 1

Past and Projected Michigan Trunkline Road Conditions, 1996-2028



Source: House Fiscal Agency.

Michigan seems to be dealing with a bit of déjà vu with its road problems. Twenty years ago, Michigan faced similar challenges. More than 30 percent of roads were in poor condition in 1997, and state road spending adjusted for inflation was 25 percent below the peak level reached more than 10 years earlier.

The Build Michigan II package, adopted in 1997, was designed to remedy that problem. The main components consisted of an increase in the state Gas Tax (from 15 cents per gallon to 19 cents per gallon) and the issuance of $1 billion in bonds from 2001 to 2003 pledging future state and federal revenues. The state is still paying off the Build Michigan II bonds and will not retire all the bonds until 2022. With the increased

a Only in government is the replacement of a series of one-time appropriations with the commitment of annual appropriations for the same purpose considered to be an increase in funding. Michigan appropriated between $285 million and $402 million in the fiscal years prior to enactment of the 2015 package, appropriated nothing for roads in the first fiscal year after enacting the package, and has yet to appropriate the full $600 million (or even match the $402 million appropriated in FY2016), but we still consider the package to have increased funding for roads.

state investment the state eventually reached MDOT's goal of 90 percent of roads in good or fair and was able to maintain the goal through 2010.

The initial push to reach the 90 percent goal may have been successful, but the debt service payments required to pay off the bonds ate into the state's ability to keep state roads in good condition. State transportation bond payments more than tripled; from $50 million annually in 2000 to $160 million by 2010. Additionally, the revenue provided through the increased Gas Tax was not enough to offset reductions in the amount of gasoline purchased due to fuel-efficient vehicles and an overall reduction in miles driven due to the 2008 recession.

Troubled infrastructure brings more serious problems than simple inconvenience to the motoring public. Poorly kept roads can increase vehicle maintenance costs, create safety hazards for those driving, and adds economic costs to businesses. An analysis by The Road Improvement Program (TRIP), a non-profit surface transportation research organization, estimates that the average Michigan driver pays $562 annually in repair costs due to the state's poor roads.[5]

With that background in mind, state policymakers must now decide how to finance enhanced road improvements. Realistically, government has only three levers to bolster road finances: increase existing taxes or authorize new taxes, redirect other state funds, or borrow against future revenues.

The 2015 road package, borne largely out of the political reality of the moment, used a combination of tax increases and diverting money that would have otherwise gone to the state's General Fund.

As a result of those statutory changes, Michigan drivers are taxed at one of the highest rates at the pump nationally and pay high registration fees, yet state spending per mile traveled is towards the bottom nationally. With General Fund (the most likely place to go to tap existing revenues) resources committed to new obligations and only modest revenue growth projected, there is not much room for increased diversions.

This has led to discussions of a new round of state borrowing to address road funding needs.

The state has moved away from transportation borrowing over the last decade. While only $600 million in State Trunkline Fund (STF) debt remains, payments on that debt will remain above $100 million annually through FY2022. Increased borrowing can provide a significant influx of dollars immediately, but the experience from the early 2000s shows that there can be a long-term effect on how much annual funding is available after obligating resources to make the required debt service payments.

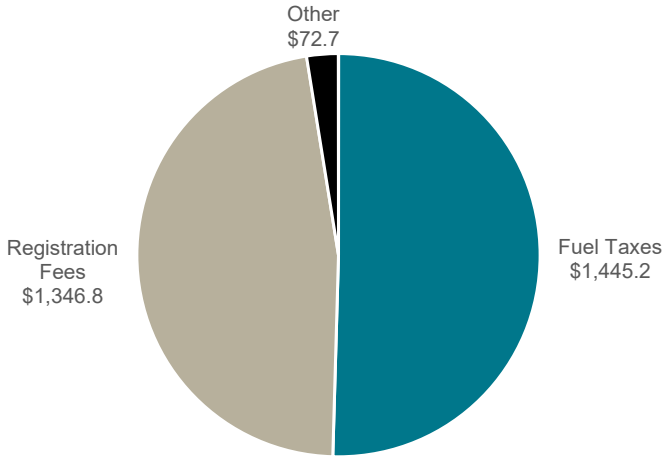
Michigan clearly needs to "fix the damn roads". But where to find the money to do so is not as clear.

Option One: Increase Transportation Taxes

While Michigan levies other minor highway-user taxes, motor fuel taxes and vehicle registration taxes are the primary revenue source for highways. The Michigan Constitution dedicates these taxes to the Michigan Transportation Fund (MTF) to be exclusively used for transportation purposes (see **Chart 2**).

Chart 2

Dedicated MTF Revenues by Source (millions), FY2018



Source: Michigan Department of Transportation.

Michigan Transportation Fund revenue, after deducting amounts for certain administrative processes and other purposes, is divided among state and local road agencies. Revenues are divided based on Public Act 51 of 1951 (Act 51) with 39.1 percent going to county road commissions, 21.8 percent to cities and villages, and 39.1 percent to MDOT (technically the State Trunkline Fund). Additional federal aid dollars supplement this spending, though those programs are targeted and do not go through the formula.

Prior to the 2015 road funding package, Michigan road spending was well below the national average. Michigan ranked 42nd nationally at $373 for every 10,000 vehicle miles traveled.[b] This was significantly lower than the national rate of $541 (see **Appendix 1**). Michigan is likely to increase its national position in these rankings as spending rises with the 2015 road funding package, but the state will still be below the national average. These rankings do not account for current road conditions or the relative road needs in each state, and thus are not a perfect measure for evaluating spending.[6]

Most state spending goes to maintenance and ongoing programs – like repaving and rebuilding roads and managing winter conditions. Over the last decade, Michigan has spent relatively little expanding road capacity; in fact, state road capacity increased by less than 500 lane miles from 2007 to 2017.[c] This is less than two tenths of one percent of the state's total lane miles. MDOT's Five-Year Program, which outlines the organization's spending plans from FY2015 to FY2019, projects spending $15 million on new capacity from a nearly $6 billion budget.[7]

Fuel Taxes

While the fuel tax has been an effective funding source historically, increases in vehicle fuel efficiency have cut into the amount of gasoline that is purchased, thus creating revenue-raising problems. Unlike a sales tax, which is charged as a percentage of the total sale, fuel taxes are charged based on the number of gallons sold. The amount of gas tax collected does not change with the price of a gallon of gasoline at the pump.

Increases in fuel efficiency have come at the expense of transportation revenues. In 1975, new vehicles averaged 13.1 miles per gallon; in 2017, new vehicles average 25.2 miles per gallon.[8] From the 1997 rate increase until the 2015 funding package took effect,

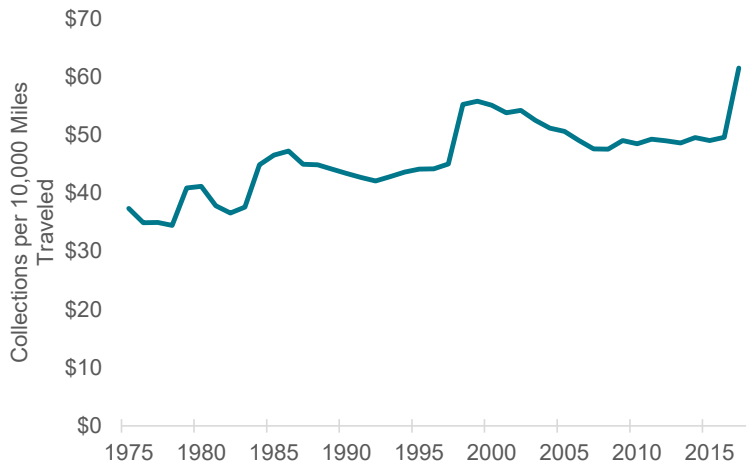
b Dollars per vehicle mile traveled is used here because it best accounts for state spending relative to usage. Because roads deteriorate primarily from use and weather conditions, estimates like total spending, spending per capita, and spending relative to personal income do not correlate strongly with degradation. While vehicle miles traveled is not a perfect substitute, it best catches road use and is thus a better proxy for spending needs.

c Lane miles are the total number of miles on a road times the number of lanes.

collections from Michigan's Gas Tax declined relative to the number of miles traveled. Revenues peaked in FY1999 at about $56 per 10,000 miles traveled in the state, then declined to levels below $50 per 10,000 miles. This trend is born out between fuel tax rate increases; revenues on a per mile basis consistently decline in years when a tax rate hike does not occur (see **Chart 3**).

Chart 3

Michigan Gasoline Tax Collections per 10,000 Miles Traveled, 1975-2017



Source: Michigan Office of Highway Safety Planning and Citizens Research Council calculations.

This trend might seem great for consumers as tax collections have historically declined when the rate stays flat. It is not so good for maintaining roads, as revenues have remained stagnant (if not declining) when rates have been held constant. In fact, when factoring for inflation, total gasoline tax revenues almost halved from 1975 to 2016 (see **Chart 4**). After the Gas Tax rate increased by 7.3 cents, collections were about two-thirds the levels they were in 1975 when adjusted for inflation.

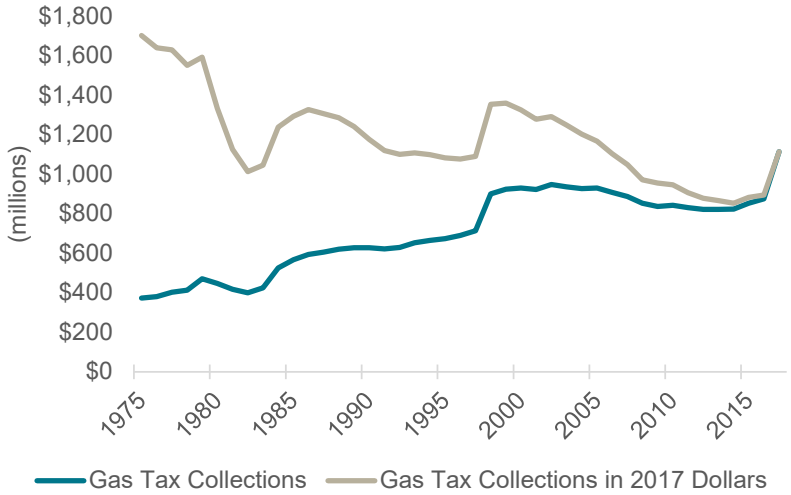
State policymakers have been reluctant to adjust fuel tax rates to maintain purchasing power. Michigan fuel tax rates have been adjusted fairly infrequently. The increase in 2017 was only the second change in the last three decades, but it was the single largest rate increase in the state's history.

In addition to raising the fuel tax rate, the 2015 road funding package also provides automatic future rate adjustments. Beginning in 2022, the tax rate will increase by the rate of inflation or five percent, whichever is less. In the long term, this will keep per-gallon revenues tied to inflation; but it does not account for the declines related to increased fuel efficiency (and thus decreased fuel consumption). If the trend of reduced gasoline consumption continues, revenues will still decline.

Following the 2017 tax rate increase, Michigan's current 26.3 cent per-gallon fuel tax is the 19th highest rate for gasoline and 23rd highest rate for diesel. While the per gallon tax rate is in the middle of the pack nationally, Michigan is one of the few states that also levies its Sales Tax on motor fuel purchases. Factoring in the six percent state Sales Tax (and the $.00875 Environmental Protection Fee), the total taxes paid at the pump pushes Michigan's national rank to 5th highest and more than 50 percent (18 cents per gallon) higher than the national average (see **Appendix 2**). When the

Chart 4

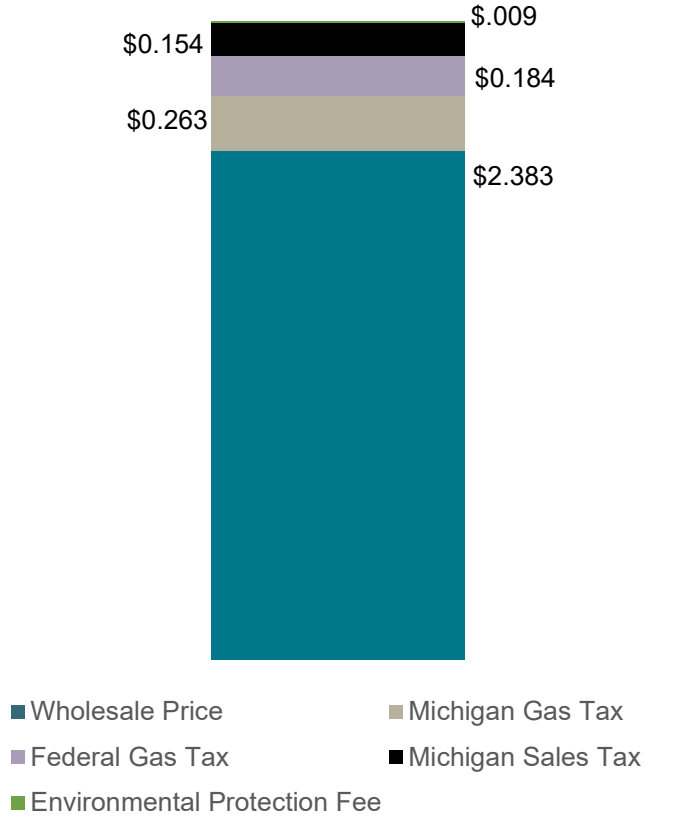
Gasoline Tax Revenues, FY1975-FY2017



Source: Annual Report of Michigan's Treasurer; Citizens Research Council calculations.

Chart 5

Gas Tax Breakdown at $2.99 Pump Price



federal 18.4 cents per gallon fuel tax is added, Michigan drivers pay 6.11 cents in taxes for every gallon of gasoline at a pump price of $2.99 (see **Chart 5**).[d]

State constitutional earmarking provisions prevent Sales Tax revenues collected on motor fuel purchases from funding roads. A small portion of the Sales Tax levied on fuel is dedicated to the Comprehensive Transportation Fund (which funds public transportation programs), while the majority of revenues are directed to the School Aid Fund and state revenue sharing. As a result, more than one-third of the total state taxes collected on fuel purchases does not go towards road spending in Michigan. Despite taxing fuel at one of the highest rates, Michigan roads see a below average rate of return from overall fuel taxation (ranked 46th per capita nationally).

Distributive effects are an important part of the fuel tax discussion. The fuel tax acts as a user fee; those who purchase gasoline are mostly using it for surface transportation. As one's use of state highways and roads increase, the amount of gasoline or diesel purchased will go up proportionally. Given that roads deteriorate with use, there is some merit to the user fee approach.

Fuel taxes can be regressive because they are charged by the gallon and do not factor in the consumer's ability to pay. Lower income drivers end up paying a significantly larger share of their overall incomes in gas taxes than higher income drivers for the same amount of fuel consumed. Since personal vehicles, and the gas to fuel them, are a necessity for many households (in this transit deficient state), the 2015 road funding package expanded the Homestead Property Tax Credit, a credit against an individual's Michigan Personal Income Tax liability. This helped take some of the economic sting out of the higher fuel tax rates. The credit generally targets low income households to assist them with paying their property taxes.

While increasing the excise tax on gasoline and other fuels above the 2015 rate increase remains an option, it is important to remember that a continued increase of the price at the pump could cause Michiganders to drive less, offsetting some of the expected revenue growth. The revenue raised per cent is also relatively minor in context of the transportation budget. The Senate Fiscal Agency projects that the state will collect $1.2 billion in fuel taxes, or roughly $46 million for each cent levied on the gasoline tax.[9] To raise the additional $2.2 billion estimated in the 21st Century Infrastructure Commission report, the Gas Tax would have to be increased another 47.8 cents per gallon.

Registration Fees

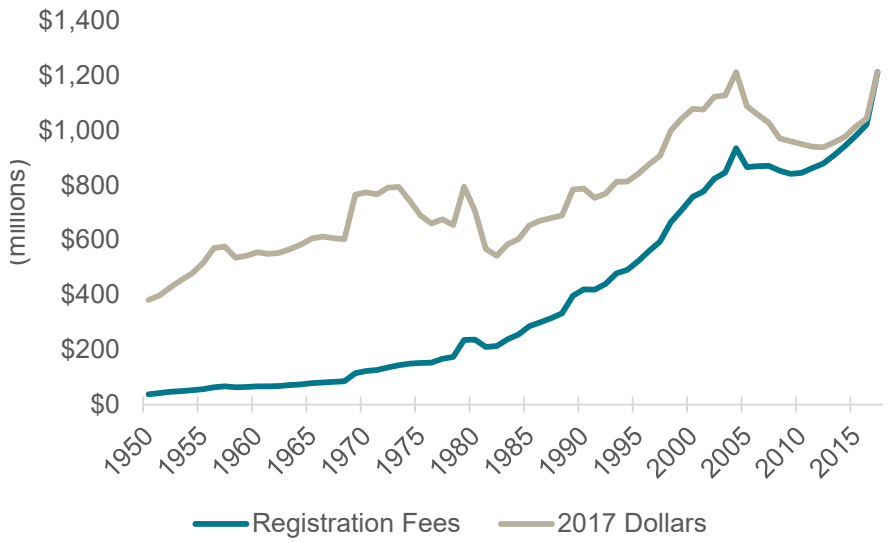
Vehicle registration fees are the other major component of transportation funding in Michigan. Annually, Michigan drivers pay a fee based on the age and list price of the vehicle (for most newer vehicles). Registration fees are a type of user charge; however, its linkage to highway use is less direct than the per-gallon fuel tax.

d Because Michigan Sales Tax calculations are set based on the wholesale price once a month, the total amount paid can be volatile in states that use a sales tax. These calculations were based on August 2018 fuel tax rates. Michigan's sales on wholesale prices are updated monthly, based on the average sale price of a gallon from 2 months prior, so in the case of this analysis prices are from June 2018.

Since the restructure of Michigan's registration fees in 1983,[e] revenues have generally increased from year to year (see **Chart 6**). The recent registration fee revenue decline reflects a tumultuous economic climate. From FY2004 to FY2009, collections declined from $935 million to $841 million. Collections have rebounded as the economy improved, with FY2017 revenues reaching the inflation-adjusted FY2004 peak.

Chart 6

Registration Fee Revenues, FY1950-FY2017



Source: The Annual Report of the Treasurer and Citizens Research Council Calculations.

Michigan is one of only seven states that bases registration fees on the suggested retail price of the vehicle.[10] Twenty-five states charge a flat per-vehicle rate, 13 states levy a fee based on vehicle weight, three states use a vehicle's age as the basis of the tax, while Missouri's fee is based on a vehicle's horsepower and Washington's fee is based on a number of variables. Using a vehicle's price as the basis for its tax allows Michigan registration fee collections to grow with the increase in vehicle prices over time. Michigan's system also takes into account drivers' ability to pay, as those who purchase higher valued vehicles are charged more.

Because Michigan has one of the higher tier pricing structures, the state collects revenues at a relatively high rate relative to the national average. In 2016, prior to the 20 percent registration fee hike, Michigan's collections from registration fees ranked 6th nationally, and on a per-capita basis ranked 14th (see **Appendix 3**). When nationwide data becomes available for years that include the increased registration fees, Michigan could be ranked in the top 10 in per-capita collections.

Michigan levies a separate annual fee (in addition to standard vehicle registration tax) on hybrid and electric vehicles. The rationale behind the fee is that these vehicle owners consume less fuel than other vehicle owners, or in some cases no fuel at all. The fee is designed to make up for the foregone fuel taxes that these owners would otherwise pay. The $47 annual fee for a hybrid vehicle is equivalent to about 179 gallons of gas consumed at current prices. Fully electric vehicles are charged $135 annually, equivalent to the tax levied on approximately 513 gallons of gas at current prices. These fees approximate the average miles traveled per vehicle in Michigan.

Michigan fees are among the highest in the nation after the 2015 increase; it is one of the few states with a top-10 ranking in fuel taxes and registration fees. While increasing state transportation taxes is an option, doing so would make driving in Michigan more expensive.

Reimagining Transportation Revenues

With fuel taxes on a long-term decline, and the need for road funding continuing to rise, the state should examine other long-term road revenue options.

e Prior to 1983, registration fees were charged based on vehicle weight.

The state currently raises very little from tolls. Increasing the use of tolls on bridges and roads could be part of a package to increase revenue for systems. One major restriction to the use of toll roads is that federal law prohibits states from applying new tolls to existing interstate lanes.[11] This alone limits potential revenue generation from tolls.

Michigan has other issues when it comes to tolling. Michigan is a peninsula; other than (primarily commercial) traffic moving from Canada to other states, drivers are not driving through Michigan to get to other places. As a result, revenues from tolls would primarily come from Michigan residents. Toll roads can also be somewhat regressive, as they are a flat user fee, which can be burdensome on low-income users. Finally, adding tolling infrastructure would be costly and inconvenient for drivers. Ultimately, these problems make tolling an unlikely solution for generating significant new revenues.

Another potential consideration is utilizing a Vehicle Miles Traveled (VMT) fee, or a flat charge based on the number of miles driven each year. These fees work similarly to fuel taxes but they are not tied to fuel efficiency, thus eliminating the downward pressures on revenues. Part of the downside is that these fees have yet to see widespread development; only one state has gone beyond using a pilot program for VMT fees.[12] A primary concern is the loss of privacy that can occur with the state either tracking driving patterns or taking actions to validate self-reporting of miles traveled each year. Such a fee structure would also work best if implemented by many or all states because drivers do not constrain travel to one state.

The International Fuel Tax Agreement (IFTA) is a collaborative program between the 48 continental states and some Canadian provinces that use a VMT formula to more accurately distribute fuel tax collections from commercial inter-state carriers. Carriers operating un-

Federal Dollars at a Premium

Federal dollars play an important role in state road funding. More than $1.3 billion, or about 27 percent of all transportation spending in Michigan, comes from federal assistance. Like federal dollars for most programs, funding is not discretionary; instead, dollars are drawn in for specific purposes. Routine maintenance of roads, for example, is not covered by federal money.[i]

Federal dollars are authorized through various programs under the Fixing America's Surface Transportation (FAST) Act, which is funded by the federal 18.4 cent per gallon Gas Tax and 24.4 cent per gallon Diesel Tax. The amount appropriated each year is capped at a level determined by statute; for FY2019, that amount is set at $42.4 billion. That money is then distributed based on a formula.

There is not extra federal money the state can draw down through additional matching spending.[ii] Under the FAST Act, which is authorized through FY2020, Michigan should not expect an increase in federal dollars to help improve state roads. Unless there is a radical shift in the allocation of Highway Trust Fund (HTF) resources with the next reauthorization, there is little reason to expect that to change.

Compounding that issue, federal revenues are facing issues similar to Michigan's transportation funding. As discussed above, increased fuel efficiency has put downward pressure on federal fuel tax collections. Congress last raised the federal fuel tax rate in 1993, and instead has opted to replace depleting revenues with discretionary federal dollars.[iii] As a result, HTF spending growth has exceeded the HTF revenue growth, making it less likely meaningful federal increases will occur without a significant change in the program.

i Senate Fiscal Agency. (2018). "Michigan's Economic Outlook and Budget Review." Accessed from: http://www.senate.michigan.gov/sfa/Publications/BudUpdates/EconomicOutlookDec18.pdf

ii William Hamilton. House Fiscal Agency. "Memorandum: Allocation of Federal Aid to Local Road Agencies." April 11, 2018. http://www.house.mi.gov/hfa/PDF/Transportation/Federal_Allocation_to_Local_Road_Agencies_Memo_April18.pdf

iii Robert Kirk and William Mallet. Congressional Research Service. "Funding and Financing Highways and Public Transportation." January 11, 2018. https://fas.org/sgp/crs/misc/R44674.pdf

der the IFTA track how many miles their vehicles travel in each state and where fuel is purchased. Then fuel tax revenues are distributed to each jurisdiction based on road use, rather than where gas is purchased. It has worked effectively on a commercial level, though there are many implementation issues that would have to be answered before the program could function at the individual state level.

One final consideration is changing the structure of state fuel taxes. If tax rates were charged on a percentage basis, rather than as a fixed amount per gallon of fuel consumed, revenues would increase along with fuel prices. This can resolve the problem of the current fuel tax, as collections could go up as fuel prices increase with inflation to counteract the decline in use.[13] It would, however, impose more volatility into collections, as gas prices are not as predictable as gas consumption.[f]

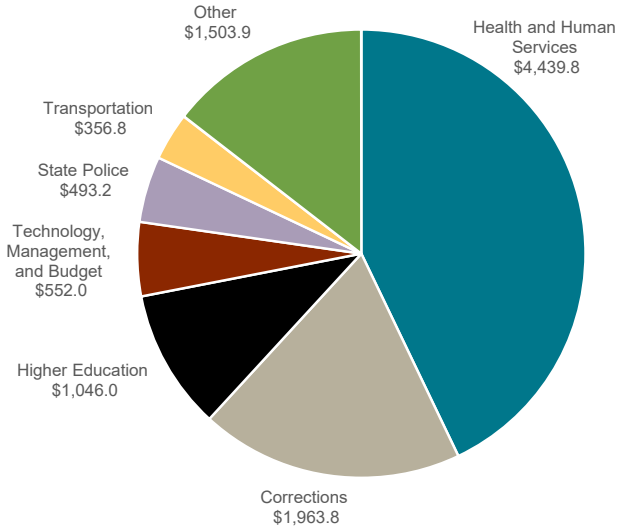
Option Two: Redirect Existing State Revenues

Policymakers could seek to redirect resources within the state budget to road funding as an alternative to raising transportation revenues. While the Michigan budget is $56 billion, the majority of those revenues are dedicated to specific purposes, either by the state constitution, statutory law, or the federal government. Because of this, the legislature has the most flexibility with the General Fund – General Purpose account (General Fund), the roughly $11 billion account that is comprised of unrestricted funds.

Chart 7 shows the breakdown of where General Fund dollars are allocated in FY2019. Almost half of the budget goes to the Department of Health and Human Services, which administers the bulk of large state and federal public assistance programs like Medicaid, and is the organization primarily responsible for public health. The Department of Corrections is the second largest beneficiary, receiving nearly $2 billion to administer the state's prison system. About $1 billion goes to state universities, $550 million to the Department of Technology, Management, and Budget, and $500 million to the State Police. The Department of Transportation receives $360 million. All other programs, including the operating budgets for the Michigan Legislature, Executive Office, the state courts, the Department of Attorney General, and other state agencies make up the remaining $1.5 billion.

Chart 7

General Fund Allocation (millions), FY2019



Source: Senate Fiscal Agency

f For a more in-depth evaluation of a sales tax on motor fuel, see our previous report *What If Michigan Had Enacted A Price Based Gasoline Tax In 1997?* on our website: https://crcmich.org/PUBLICAT/2010s/2011/note201102.pd

For much of the recent past, General Fund dollars have only been appropriated to the MTF on an as-needed basis. The state made appropriations from the General Fund for Build Michigan II in FY1997 and Build Michigan III from FY2000 to FY2002, but did not use General Fund dollars for transportation for a decade after those appropriations. In recent years, that has changed as state lawmakers have pledged ongoing General Fund dollars to roads with the 2015 funding package (see **Table 1**). Since FY2012, the state has allocated nearly $2 billion in General Fund dollars or diversions to the MTF, including $564 million for FY2019 ($150 million associated with the planned phase-in of the 2015 package).[g]

Diverting Existing Money

Finding options for making additional large-scale diversions from the General Fund may be a challenging endeavor. Despite the seemingly large pool of money that the state spends, the $600 million planned allocation to the MTF starting in FY2021 will represent more than five percent of the state's discretionary account.

Many programs in the state budget are commitments that must be paid (like payments on state debt), are required to help run state services (like funding for Michigan State Police and corrections facilities), or are used to draw down significant federal dollars to the state (like the Healthy Michigan Plan and other Medicaid spending). These existing commitments make it difficult to cut particular programs. When factored together, the Senate Fiscal Agency estimates that only about $5.25 billion of the state General Fund budget is fully discretionary.[14] Based on this estimate, the $600 million the state will spend on roads in FY2021 will take up more than 10 percent of the truly discretionary dollars.

Recent policy actions have slowed the long-term growth in the General Fund. Due to existing diversions, such as the promised MEGA tax credits, required reimbursements to local governments from lost personal property taxes as part of the 2014 state-level reforms, and funding for the 2015 road package, projections have General

Table 1

Non-Dedicated Funds Directed to the MTF, FY2000-FY2019 (millions)

	2000	2001	2002	2012	2013	2014	2015	2016	2017	2018	2019
GF Allocations to MTF	$100.0	$35.0	$35.0	$ 0.5	$-	$221.3	$271.5	$373.5	$ 9.8	$205.0	$300.0
Revenues Redirected to MTF	$-	$-	$-	$-	$100.0	$230.0	$-	$-	$-	$-	$264.0
Total Aid to MTF	$100.0	$ 35.0	$35.0	$ 0.5	$100.0	$451.3	$271.5	$373.5	$ 9.8	$205.0	$564.0

Source: House Fiscal Agency

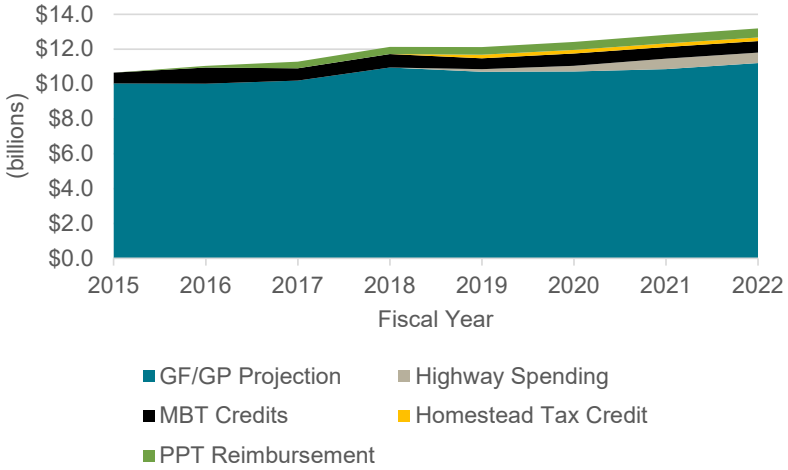
The combination of the 2015 transportation package and recent Personal Income Tax earmarking changes will effectively provide $468 million in General Fund resources to the MTF in FY2020. Beginning in FY2021, a total of $600 million will be redirected annually from the General Fund to roads. The diversion of General Fund resources to roads, in conjunction with other obligations, reduces growth in the General Fund that would have occurred, limiting the fund's ability to address other state priorities.

g This includes supplemental appropriations made in December 2018; the original allocation was $300 million, but this increased with extra revenues from higher Income Tax collections and with how the legislature dealt with revenue adjustments due to the *Wayfair* decision (see **Box** titled "*Wayfair* and Road Funding" on page 10 for more details).

Fund revenues below FY2018 levels until FY2022 (see **Chart 8**). With each of these policies, it was assumed revenue growth over several years would be sufficient to pay for the diversions, cutting the growth prospects of the General Fund. Cumulatively, they are tying up all new revenue from growth of the economy. Projections from the January 2019 Consensus Revenue Estimating Conference show General Fund revenue to be below $11 billion through 2022. Because General Fund revenue is not expected to grow in any significant capacity, any new diversions will compete with resources from other discretionary priorities.[h]

Chart 8

General Fund Revenue Projections, FY2015-FY2022



Sources: House Fiscal Agency, Senate Fiscal Agency, and Michigan Treasury

One possible way to free up General Fund dollars for roads is to transfer a larger share of the burden of higher education spending to the School Aid Fund. If the legislature increased the proportion of state appropriations to universities financed by the School Aid Fund, more discretionary General Fund dollars would be available for roads. About 62 percent of the approximately $1.6 billion state appropriation for higher education comes from General Fund sources. Unless this revenue were backfilled with other dollars, it would create a zero sum budget environment between K-12 education, the community college system, and the higher education system. If such a change were made, it should be accompanied with a strategy to hold school funding harmless.

h For more information on the state's budget crunch, see our previous paper *Challenges Ahead in Balancing the State Budget* on our website: https://crcmich.org/challenges-ahead-in-balancing-the-state-budget/

Wayfair and Road Funding

Historically, Supreme Court precedent limited the ability of states to collect sales tax of online purchases to stores that were physically located in the state. With its ruling in *South Dakota v. Wayfair, Inc.* (*Wayfair*), the courts expanded the types of online purchases a state could tax to include any organization that does a significant amount of business in the state.[i] For Michigan, these changes increased state revenues by more than $200 million per year beginning in FY2019.[ii] The majority of that money is earmarked to the School Aid Fund (SAF), but the legislature saw an opportunity to increase revenues for other priorities.

The Michigan Constitution directs around 73 percent of Sales Tax revenues to the SAF. The changes due to *Wayfair* will raise SAF revenues by $149 million in FY2019 and by $173 million in FY2020. Even though the legislature cannot redirect those dollars, other revenue sources deposited to the SAF are set by statute. To get around the constitutional revenue restriction, the legislature redirected $149 million of Personal Income Tax revenues from the SAF to the MTF and the Renew Michigan Fund in FY2019, with the redirect increasing to $173 million in FY2020.

i Citizens Research Council. (2018). "New Treasury Rules Aim to Increase Online Sales Tax Compliance, Revenue." Accessed from:. https://crcmich.org/new-treasury-rules-aim-to-increase-online-sales-tax-compliance-revenue/

ii Senate Fiscal Agency. (2018). "Michigan's Economic Outlook and Budget Review." Accessed from: http://www.senate.michigan.gov/sfa/Publications/BudUpdates/EconomicOutlookDec18.pdf

We Have $1 Billion in the Rainy Day Fund. Why Not Use That?

The state has more than $1 billion saved up in the Countercyclical Budget and Economic Stabilization Fund (BSF), the state's rainy day fund. The BSF is part of the state's cash reserves and withdrawals must be appropriated annually before the funds can be spent, although there are no restrictions on how the money is used. After emptying the account during the state's economic downturn in the early 2000s, Michigan finally started building up the account over the last decade. Some might suggest that the state should put the money to use instead of letting it sit there.

The rainy day fund balance is about equal to where it was in 2001 when Michigan's single state recession began. At that time, the state went through the majority of that money in less than a year. While the current level of reserves would be enough to stabilize the state during a mild recession, it would not last long if it were used to maintain spending levels in the face of deep budget cuts. It is uncertain when the next recession will be. The current national recovery will become the longest on record after July. Even though economic signs are showing continued growth, the next recession is likely close. Given the already tenuous nature of the General Fund discussed before, slashing state savings prior to a recession would likely necessitate deeper cuts in the next recession.

Additionally, rainy day fund dollars would not go very far in improving Michigan roads. The 2015 road funding package will yield $1.2 billion of annual funding once it is fully in effect. By the end of the current fiscal year, the state is projected to have $1.15 billion in the rainy day fund. Using rainy day fund dollars would be equivalent to doubling the 2015 package for one year, but then the extra dollars would be gone. If current spending is insufficient, rainy day fund dollars will do very little to improve the roads over the long term.

For more information on the state's rainy day fund, see our previous paper *Preparing the State of Michigan's Budget for the Next Recession*, on our website: https://crcmich.org/preparing-the-state-of-michigans-budget-for-the-next-recession/.

Change School Aid Fund Earmarking

Rather than use General Fund revenues to increase road funding, the legislature has recently opted to divert resources designated for the School Aid Fund. Revenue sources that are not constitutionally dedicated to the School Aid Fund can be re-directed by statute. This was done in 2018. With the increase in Sales Tax revenues due to the *Wayfair* decision the legislature reduced the Personal Income Tax earmarked to the School Aid Fund. This effectively freed up resources to be redistributed to roads while holding harmless overall School Aid Fund Resources (see **Box** titled "*Wayfair* and Road Funding" on page 10).[15]

A different approach would remove motor fuels from the Sales Tax base, thus creating greater opportunity to increase motor fuel taxes and have resulting revenues flow to road improvements. The Sales Tax on motor fuels currently generates an estimated $894 million a year.[16] By exempting gasoline from the Sales tax and levying an additional Gas Tax at an equivalent rate, the state could raise new revenue for roads without increasing the pump price of gasoline. It would be desirable with such a policy decision to backfill the School Aid Fund and to add to state revenue sharing funding with revenues from other taxes to make up for the revenue decline caused by the shrunken tax base.

A Third Alternative? Borrowing

While increasing transportation taxes and redirecting existing revenue have been the preferred options to address road conditions in recent years, they both operate on a pay-as-you-go system by increasing the amount of on-going funds. A short-term option is to raise resources through borrowing to make more funding available, accelerating road construction. The state has constitutional authority to issue both revenue-dedicated transportation bonds and state general obligation bonds to pay for road improvements.

In general, governments use bonding to help finance larger scale projects so they do not have to wait for years to accumulate sufficient funds. Bonding can make sense when building a significant amount of new roadway, like the M-6 bypass on the south side of Grand Rapids or the Mackinac Bridge, or when a major reconstruction is needed, like the upcoming I-75 rebuild in Oakland County.

The state has reduced its reliance on borrowing, particularly highway debt. Since 2007, the STF has issued less than $100 million in new bonds, although it has refinanced existing bonds to accrue savings. At its peak in FY2009, the state's outstanding highway debt was $2.26 billion. At the end of FY2018, the state owed $1.2 billion (see **Chart 9**).

Michigan's general obligation debt reached its peak in FY2013 at just over $2 billion, but has declined by about 25 percent (just under $500 million) since.[17] The majority of the state's general obligation debt was borrowed to finance loans to local school districts (just over $800 million) which are counted differently from other bond issues, and from bonds sold for environmental programs like the Clean Michigan Initiative (about $275 million).

State Bonding Authority in Michigan Law

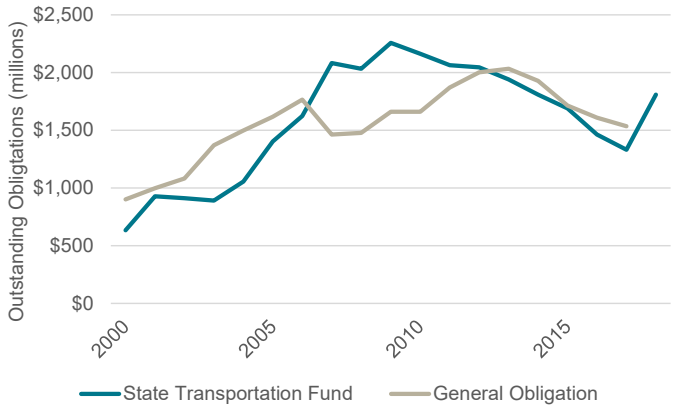
The Michigan Constitution outlines two processes for any long-term borrowing. General obligation borrowing, authorized by Article IX, Section 15, is backed by the full faith and credit of the State of Michigan, meaning that debt is backed by an unconditional guarantee that the state will pay it back. These payments are the first prioity in the state budget.[18] To issue general obligation bonds requires approval from a two-thirds majority of the Michigan House of Representatives and the Senate, and a majority vote of the people in a referendum. The state has not issued this type of debt for roads.

Article IX, Section 9 of the state Constitution allows for transportation bonding to be authorized solely by the legislature.[19] Unlike the general obligation bonds, transportation bonds are not backed by the full faith and credit of the state, but are instead tied to dedicated revenue sources. The Michigan legislature has delegated this authority to the State Transportation Commission (STC)[i] in Public Act (PA) 51 of 1951.[20]

PA 51 provides the STC with two types of borrowing authority: borrowing backed by pledging a portion of constitutionally-dedicated revenue (motor fuel and motor vehicle registration taxes) and federal anticipation bonds that are backed with promised federal dollars and are counted separately for STF borrowing limits. The STC also can issue refund bonds, which refinance existing debt, if the savings would result in at least a three percent reduction in the present value on the debt. The law restricts debt service to half of

Chart 9

Michigan Outstanding STF and General Obligation-Bond Debt, FY2000-FY2018



Source: Michigan Department of Transportation

i The State Transportation Commission is a body within the Michigan Department of Transportation. The commission is comprised of six members, who are each appointed by the governor to three-year terms. The term expirations are staggered, so that two members' terms expire each year. No more than three members at a time can represent the same political party.

the previous year's constitutionally-dedicated revenue. Because STF borrowing comes from funds dedicated for the state road system, STF bonds solely benefit roads under MDOT jurisdiction, meaning county or municipal road systems would not benefit if the state sold bonds in this way.

Borrowing to Fix Roads

Debt financing of transportation projects has the primary advantage over a pay-as-you-go approach by providing funds immediately when they are needed, rather than having to wait until money is available. Roadway infrastructure does not face a linear aging curve; it deteriorates slowly near the beginning of its life cycle, then rapidly towards the end. Investments in the middle of the life cycle can prevent or delay the need for major spending later when road conditions have deteriorated. Postponing spending can significantly increase the overall spending required to maintain highway conditions.[21] Bonding can also save the state on projects if construction prices grow at a faster rate than the interest rates being offered for borrowing.

The largest problem with borrowing occurs when ongoing transportation dollars become bogged down in debt service payments. This is particularly true of large infrastructure investments to repair a broken system. Unless the state increases funding along with borrowing, once bond money dries up state investment into roads will be lower than it was before bonds were issued. In Michigan's experience with bonding for roads, money to pay bond debt has reduced dollars available to the state systems. If road conditions are worsening with current revenue levels, improved conditions due to new borrowing would not be sustainable as the state would have less money to invest in ongoing maintenance.

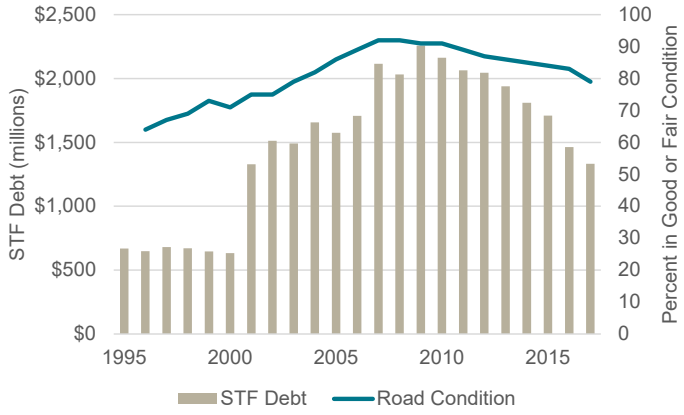
Michigan is already feeling this effect; **Chart 10** shows the relationship between state road conditions and outstanding STF bonds. While the 1997 fuel tax increase slightly helped improve road conditions, it was not until Build Michigan II bonds became available that state road conditions began to improve at a rapid rate.

The most recent wave of borrowing began in earnest in FY2001, when the state more than doubled its debt; it sold $308.2 million in state bonds and $400 million in federal anticipation bonds.[j] Conditions improved as the state continued to borrow money in the following years: additional bonds were sold from 2002 to 2009 totaling almost $1.4 billion.[k,22] With the influx of bond proceeds, road conditions peaked in 2007 and stayed above MDOT's 90 percent goal for four years.

Since then, the STF has not increased borrowing to supplement revenues.[l] The aggregate condition of roads began deteriorating in 2011, about two years after the most recent major bond issuance. Even with increased revenues from the 2015 funding package, conditions are expected to worsen with current resource levels. It is important to note that increases in state borrowing alone may not be sufficient to improve Michigan's roads over the long term. In fact, if resources are not increased to maintain conditions, it could lead to larger problems several years later due to reduced regular maintenance.

Chart 10

STF Outstanding Debt and Road Conditions FY1995-FY2017



Source: House Fiscal Agency and State of Michigan Comprehensive Annual Financial Report.

j Federal anticipation bonds are not included in **Chart 9, Chart 10, Chart 11, or Table 2**. While they represent an influx of capital, the revenue streams do not directly come from STF dollars, so they do not count towards the debt service coverage ratio.

k These include issues take out in 2002 ($200 million in federal anticipation debt), 2004 ($186 million in STF), 2006 ($245 million in STF), 2007 ($485 million in federal anticipation debt), and 2009 ($282 million in federal anticipation debt).

l In 2011, the state took out $91 million in bonds, but those funds were primarily used for the Blue Water Bridge program.

Borrowing Policy

State Trunkline Fund

Legal restrictions constrain how much debt the STF can assume. Michigan law limits principal and interest debt service payments to 50 percent of constitutionally-dedicated revenue sources (primarily fuel taxes and registration fees) from the previous year.[m]

The statutory restriction is limited further by long-standing State Transportation Commission policy that stipulates a 4-to-1 debt service coverage ratio. This policy effectively caps debt service payments at 25 percent of allotted revenues from the previous fiscal year. For example, in FY2018 the STF was able to spend $253.7 million on debt service payments based on the $1.015 billion in constitutionally dedicated revenue collected in FY2017. Commission policy also requires that the repayment period should not exceed the life of the improvements, which can range anywhere from 10 to 30 years.

Given current transportation revenues and state limits, there is little current capacity for additional STF borrowing. The state has not taken out new STF debt since 2009, and payments have remained relatively constant at about $160 million annually. More recently, Michigan issued Strategic Fund bonds, technically not STF borrowing, to finance a major reconstruction project on part of I-75 in metro Detroit. The STF will still make contractual payments to indirectly pay off these bonds. Given the current maximum 4-to-1 coverage ratio, the STF is able to make about $250 million in debt service payments, providing about $60 million per year in additional capacity under current debt service amounts (though this does not factor ongoing program needs). While interest rates and the length of borrowing are factors to consider, the $60 in debt service capacity would be sufficient to finance approximately $1 billion in new borrowing in the current rate environment with a 30-year term. This equates to about two years of the funding directed to the STF under the 2015 road package.

Debt service coverage is restricted to constitutionally dedicated sources. Any revenue redirected from the General Fund to the MTF, and any new statutory, non-transportation related revenue sources directed to roads, are not eligible to be used for debt service under Act 51. The only way to increase revenues eligible for debt service, and thus the amount that can be borrowed, is to increase fuel taxes and registration fees. However, because of the MTF statutory allocations to the Comprehensive Transportation Fund and local road agencies, and the required debt service coverage ratio, only about 9 cents of every new dollar in MTF revenue is available to finance STF borrowing.

Although the STC has some legal capacity to increase borrowing, practical considerations could limit future increases in STF bonds. Current levels of ongoing funding are, as discussed above, unable to maintain existing road conditions. Bonds could increase the money that can be spent on a one-time basis, but they would reduce the amount of recurring funds for several years, further limiting the state's capacity to maintain road conditions.

General Obligation

The state has more capacity to take on general obligation bonds, but taking out significant bonds leveraged against General Fund revenues would limit bonding capacity to deal with the state's other General Fund priorities. Because they would be covered by the full faith and credit of the state, they would be the first priority among General Fund allocations, reducing the availability of discretionary dollars for the foreseeable future on a dollar-for-dollar basis.

m This excludes certain types of debt service payments, particularly those from refunded bonds (these are bonds that have been re-financed, and are being paid off with money from a refund bond that does count against the total owed) and those from expectation bonds (those which are financed by promised federal dollars, so projects can begin before federal money comes in).

The I-75 Improvement Project: A Unique Approach

Although the STF has not used bonds to finance projects since 2009, MDOT entered a contractual obligation that will essentially function as department borrowing in 2018.

MDOT is testing a new approach to major undertaking improvements with the I-75 Improvement Project Segment 3 construction. Rather than using a traditional contracting method, the department has entered a Public-Private Partnership (P3) contracting a private organization to design, build, finance, and maintain the rebuild of the interstate (from 8 Mile Road to 13 Mile Road) in metro Detroit. As part of this arrangement, the contractors will be responsible for not only designing and building the project, but also for maintaining road conditions for a defined contractual period.[i]

This type of project has many benefits. Primarily, it allows the department to spread costs over a 30-year period as the contractor is under contract for a longer period of time. The agreement also allows the department to fast-track completion of the construction without using significant revenues in the short term. With shorter construction times and a faster date of completion, the economic benefits of the project could be realized faster. It also allows MDOT to place risks of the project design phase back on the contractors, which means extra care will be given to the design phase of the project.

This type of project also has risks. The unique financing nature of the project means there is more financial risk for the state. As part of the financing, the Strategic Fund issued $610 million in bonds; the STF is technically not responsible for paying back the debt, but has contractual obligations for the entire 30-year term that will functionally serve as bond payments. Because of the unique nature of this financing scheme, the Strategic Fund bonds were graded a Baa2 by Moody's – a lower score than STF bonds are typically graded, increasing the interest rate on the bonds.

Under this structure, the contractual obligation does not technically count as STF debt in the way a department-issued bond would. Payments under this agreement will not show up under STF debt service coverage, yet they will be considered as such since it is a contractual agreement that otherwise operates similarly to the department debt-financing the project.

[i] Michigan Department of Transportation. (2017). "Accelerating the Delivery of the I-75 Modernization Project." Accessed from:. https://www.michigan.gov/documents/mdot/I-75_Modernization_Acceleration_Handout_599921_7.pdf

Current Borrowing Capacity

At the end of FY2018, outstanding STF debt totaled $597.4 million.[n,23] The vast majority of the outstanding debt resides in bonds that are close to maturity; all but two of those bond issues are scheduled to reach maturity by the end of FY2023. Six issues account for almost $370 million (62 percent) of that outstanding total. After FY2023, projected debt service payments will drop below $20 million annually (see **Table 2**). In addition, debt service on the I-75 project will cost more than $29 million annually until FY2024, when payments increase to $42 million annually. Even though the STF has limited borrowing capacity in the immediate term, considerable capacity will be freed up by the end of FY2023 (see **Chart 11** on page 17).

General obligation debt service is expected to follow similar trends throughout the 2020s, with all general obligation debt expected to be paid off in FY2034 (see **Chart 12** on page 17).

Table 2

Debt Service and Coverage Projections in millions, FY2018-FY2045

	2018	2019	2020	2025	2030	2035	2040	2045
STF Bond Debt Service	$160.8	$160.7	$118.4	$19.6	$ 6.4	$ 6.4	$-	$-
I-75 Corridor Debt Service	$-	$32.5	$29.2	$42.2	$42.4	$42.6	$42.9	$39.0
Total Debt Service (line 1 + line 2)	$160.8	$193.2	$147.6	$61.8	$48.8	$49.0	$42.9	$39.0
Estimates of Total Debt that may be Incurred under STC Policy	$253.7	$259.5	$265.5	$297.4	$333.3	$373.4	$418.4	$468.7
Estimates of Unused Debt Service (line 4 - line 3)	$92.9	$66.3	$117.9	$235.7	$284.5	$324.4	$375.5	$429.7

Source: Michigan Department of Transportation, Michigan Comprehensive Annual Financial Report, and Citizens Research Council calculations.

Note: Estimated debt service limit is calculated using MDOT's long-term growth rate estimate of 2.3 percent, and are not official projections.

Financial Considerations of Borrowing

Borrowing can bring forward construction timelines, but that efficiency comes at a price. Like any long-term debt, the state pays interest on money that is borrowed. This rate is based on the bond rating that applies to the specific borrower; STF and general obligation bonds are graded on separate terms. Bond ratings are typically set by three major rating agencies, with AAA being the highest. Both general obligation bonds and STF bonds in Michigan are rated fairly well, between AA and AA+ (or equivalent) by the three largest rating agencies.[24] While the general obligation bond rating is towards the middle of the pack relative to other states, Michigan's ratings are still considered strong and improved during the last round of borrowing.

Over the last decade, STF bond series that have been issued or refinanced have had average interest rates anywhere from 4.5 to 5 percent. However, interest rates can vary over time; typically, rates increase as the economy is strong and decrease under weaker investment conditions. Even though these fluctuations can seem relatively small, changes in interest rates can mean the difference of several million dollars over the life of a bond.

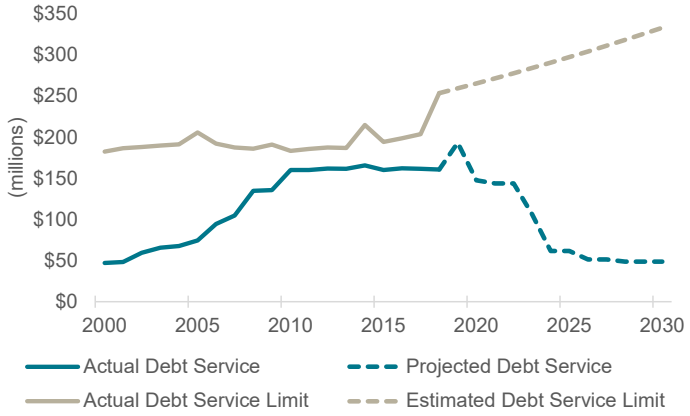
The repayment period will also have a significant effect on the cost. Repayment for STF bonds typically lasts from 10 to 30 years. Shorter periods will pay significantly less in interest over the life of the loan; however, they will also be accompanied by somewhat higher debt service payments. Conversely, longer repayment periods will result in significantly higher portions of money going to interest payments.

The I-75 project, while unique, gives a view of the fi-

n This does not include interest payments.

Chart 11

Actual and Projected STF Debt Service Payments FY2000-FY2030



Source: Michigan Department of Transportation, Michigan Comprehensive Annual Financial Report, and Citizens Research Council calculations.

Note: Projected debt service includes debt service payments owed on Strategic Fund bonds for the I-75 Improvement Project (see **Box** on page 15).

nancial picture behind borrowing. The Strategic Fund borrowed $610 million over a 30-year period at a five percent interest rate. Debt service payments on these bonds will be about $42 million annually (after an initial five-year period where only interest payments are made). The total principal and interest payments on the bonds will total just under $1.2 billion over the entire term. Nearly 50 percent of debt service payments will be applied to interest over the life of the agreement. This is more expensive than the typical bond that the STF or state would take out largely due to a lower credit rating and the longer term (see **Box** on page 15 for more details about the I-75 project).

Short-term STF borrowing will be limited due to the 4-to-1 debt service coverage ratio. General obligation bonds could be used to bring in substantially more funds, though there are other considerations beyond the financial premium paid to borrow that money.

Economic and Social Considerations of Borrowing

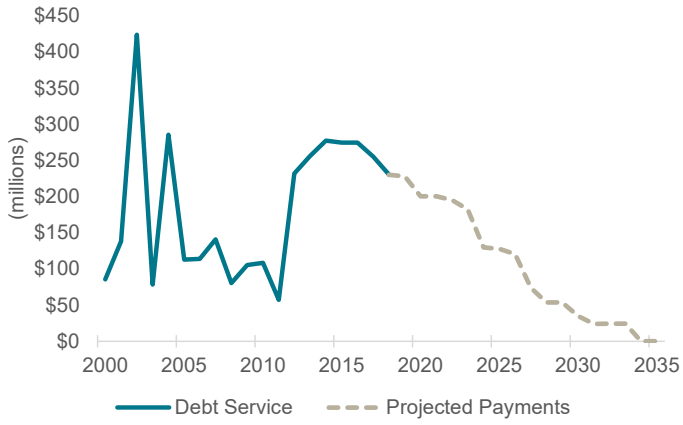
Borrowing for infrastructure creates an economic stimulus in the short term. An infusion of construction spending can improve economic output in a temporary way, as construction jobs are more readily available, and in a more permanent way, as improved roads help boost economic output by reducing costs accrued through poor infrastructure (such as increased damage to vehicles and congestion caused by poor conditions).[25] These conditions would be magnified during an economic downturn when unemployment is higher, but muted during periods of near-peak employment.

However, these benefits may come at a cost. New obligations would require increases in dedicated revenue sources. As discussed on page 5, the Gas Tax is a fairly regressive charge, and Michigan's vehicle registration fees are among the highest in the nation. If ongoing funding is not increased to match increases in STF borrowing, MDOT might not have sufficient resources to pay for other maintenance needed over the short term, or other activities it conducts, like salting and snow plowing.

Similarly, increases in borrowing from the General Fund would have to trade off with current government programs or increase state taxes. As noted, only about $5 billion of the General Fund budget is truly discretionary in nature, meaning that paying for new highway borrowing out of these current resources would require a sizable reduction in state spending elsewhere in the budget.

Chart 12

General Obligation Bond Debt Service Payments and Projections, FY2000-FY2035



Source: Senate Fiscal Agency and Department of Treasury.

Long-term borrowing can also have the effect of forcing future generations to pay for up-front improvements. When governments borrow to fund projects now, the bulk of the benefit is received by the current generation, and future generations pay a larger portion of the price despite seeing less benefit. This can be true for road borrowing, although the long-term nature of road infrastructure improvements limits the long-term social cost. If the length of a bond repayment period is expected to last the length of the infrastructure improvement, as internal guidelines require, then future generations are still benefiting from any debt they are paying back. As roads deteriorate over time, however, the benefit to the state 20 years down the line will be smaller than it is immediately after an improvement is made, meaning there is still a level of borrowing from the future to improve current conditions.

Distributive Considerations

While much of this discussion has been focused on state funding needs as a whole, it is important to keep in mind Michigan's current road jurisdiction system and how state tax money is distributed. Of the more than 120,000 route miles in the state of Michigan, only about 10,000 miles are under MDOT's responsibility. County agencies are responsible for about 90,000 miles of road, while city and village road agencies are responsible for 21,000 miles of road.[26] However, more than half of road use occurs on highways and freeways that fall under MDOT jurisdiction.

In addition to having more roads, local roads tend to be in worse shape. **Chart 13** shows the condition of federal aid eligible roads (most roads other than local access side streets) under county and city/village jurisdiction respectively.[o] Both county and city/village road conditions dropped significantly in the early 2000s, and have yet to recover. More than 40 percent of local roads are graded in poor condition as of 2017; that number is not likely to improve. **Chart 1** (on page 2) shows that state roads are nearing the edge; yet many local roads are already off the cliff.

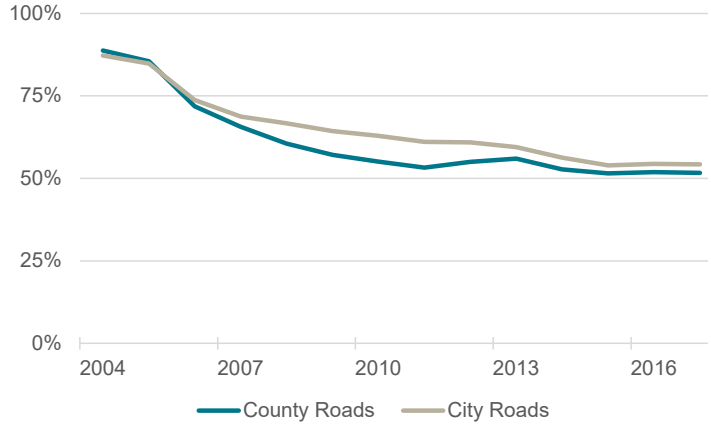
Michigan's system of highway jurisdiction is heavily decentralized compared to the rest of the country. Michigan is one of only five states where 90 percent of roads are under local control. On average only 71 percent of roads are governed by local agencies.[27] Even more unique, Michigan has 617 agencies responsible for public roads (MDOT, 83 county road commissions, and 533 cities and villages).

Although jurisdiction over roads is highly decentralized, the state's revenue structure is not. Michigan has a very centralized revenue generating structure, as the majority of funds are collected by the state and distributed to local road agencies. Historically, when the legislature has made supplemental road appropriations, it has followed the distribution outlined in Act 51 (or allocated to specific projects).

Michigan law also places heavy restrictions on what revenue sources localities can use to fund roads. While local governments in some other states can levy local-

Chart 13

County and City Roads in Good or Fair Condition FY2004-FY2017



Source: Michigan Transportation Asset Management Council.

o Federal aid eligible roads primarily include interstates and highways. Unfortunately, data is not collected for the majority of local roads; federal aid eligibility is the only category in which this data is collected on at a widespread level. Federal aid eligible roads account for between 20 and 30 percent of County and City/Village lane miles over the years covered in Charts 12 and 13.

option fuel taxes, registration fees, and other specific taxes, Michigan local governments can only raise additional road revenues through property taxes and a local-option income tax (which only 23 cities currently levy).[28]

Local governments in Michigan are towards the middle of the states in funding per mile of road. Prior to the 2015 road funding package taking effect, Michigan local governments spent the 24th most per centerline mile,[p] and state roads are funded at the 26th highest rate. This face value rate only accounts for distance and does not consider other factors that contribute to road needs, including road usage, weather, existing road conditions, and total lane miles. As examined above, Michigan spending relative to road usage ranks in the bottom 10 nationally, and Michigan is 29th nationally in spending per lane-mile, so rankings on a per centerline mile likely underestimate road spending needs in the state.

The need for funding across the system varies. Despite this, current allocation methods do not factor in existing road conditions or direct measures of road use. This raises another question when it comes to increasing road funding: should distribution along Act 51's formula be re-examined?

Beyond the distribution issues between state and local agencies, the current distributive process also is inadequate for addressing need within county and city/village allocations. Michigan's formula for distributing revenues favors rural systems.[29] Local road funding distributions do not factor in usage rates; they consider road miles, population, and vehicle registration numbers (for counties). This can leave cities and counties that have high usage rates with less funding relative to need.[30]

A large portion of the road miles in Michigan are located in rural areas (69.0 percent); those roads constitute a minority of total road usage (29.8 percent).[31] At the same time, costs of maintaining roads increases significantly as usage rates spike; so while rural areas have more road to deal with, the upkeep cost per mile is significantly lower for the majority of roads. In addition, there is little consistency in road conditions at the local level. Rural counties like Cheboygan and urban counties like Ingham are both among the worst when it comes to federal aid road conditions.[32]

Unless the allocation schedule is changed, any dollars allocated through the MTF would follow existing distribution patterns, which could result in smaller than intended effects on improving local roads. If STF borrowing were utilized, it would not go towards local roads at all. Any increase in road funding should consider the differences in system needs when determining how to distribute assistance.

p Centerline mile is used here because the Federal Highway Administration does not estimate lane miles or usage by jurisdiction.

Grounding Principles When Considering Road Funding Options

Despite an enhancement of road funding in 2015, the systems needs are quickly outpacing current resources. The cause of the problem is relatively simple: the state has underinvested in road maintenance, and a significant portion of state roads are on the cusp of deteriorating beyond fair condition. Even as the 2015 road funding package improves Michigan's resources, the phase-in of revenues delays the investment in roads and the overall funding is still not adequate.

The unfortunate truth is that finding additional dollars to fund the state's roads is not an easy problem to solve. Michigan has one of the highest fuel tax levies and the most expensive registration fees in the nation; but state road spending per mile traveled is towards the bottom. Additional use of the state's limited General Fund dollars will not improve the roads without new revenues or steep cuts elsewhere. Fixing the roads will require choices that reflect policy priorities and political realities.

Here are some principles that should be reflected in any broad funding package.

- Taxes collected at the pump are distributed differently in Michigan than in other states. While most people intuitively tie taxes levied at the pump to road funding, fuels are subject to the Sales Tax and those collections are used to fund schools and make revenue sharing payments. The disentanglement of motor fuels and the Sales Tax should be a priority. Exempting motor fuels from the Sales Tax and increasing fuel tax rates an equal amount would make taxation on motor fuels more transparent and promote the user fee approach ingrained in road funding in Michigan.

- If policymakers decide improving the state's road infrastructure is indeed a high priority, policy should reflect that reality. The identification of resources to direct at this issue should not be restrained by past use. However, funding for priorities is zero-sum. Let's not solve this problem by creating new problems.

- Bonds can be an effective tool when making road improvements, but are not a panacea. In the past, the state issued bonds without providing sufficient revenue to repay the debt and maintain road conditions. When looking for funds to fix the roads, policymakers should treat bonds for what they are: an instrument to finance large-scale projects, rather than as a way to increase funding for short-term maintenance. If used improperly, debt service payments can limit the ability to maintain road conditions, and Michigan roads will revert back to current conditions.

- The distribution of tax revenues should better reflect road condition and usage. The current Act 51 allocation ignores road capacity, which is a true indicator of costs, and road usage, which is a key driver of degradation. It does not direct funds to the roads in the poorest condition. If funding does not reflect the realities on the ground, increases will have less of an effect on road condition, while some road agencies will be over-funded. Reform of Act 51 should accompany efforts to raise new revenues.

- Raising revenue to actually fix the roads, whether through cutting spending in other state programs or increasing road user fees, will require a significant investment from the state. Boosting funding in small amounts, or for short periods of time, will mean new construction and maintenance will not be maintained as efficiently. If the legislature chooses to increase funding, those increases should be sufficient to reconstruct roads to high standards and maintain them throughout their life cycles. Partial measures and kicking the can down the road will not create a lasting improvement in Michigan's road conditions.

Road infrastructure becomes more expensive to fix as it degrades, and a significant portion of Michigan's roads are close to falling into 'poor' condition. Making a decision on how to finance roads will not be easy, but is a decision that cannot be put off any longer.

Appendix 1
State and Local Highway Spending and Road Usage, 2015

State	Vehicle Miles Traveled (millions)	Expenditures (millions)	Expenditures per 10,000 Miles Traveled	Rank
Alabama	67,257	$2,366	$351.80	44
Alaska	5,045	$1,584	$3,140.54	1
Arizona	65,045	$2,181	$335.28	47
Arkansas	34,897	$1,692	$485.00	37
California	335,539	$16,568	$493.78	34
Colorado	50,437	$2,771	$549.48	26
Connecticut	31,592	$1,897	$600.37	22
Delaware	9,931	$645	$649.58	16
Florida	206,982	$9,544	$461.11	39
Georgia	118,107	$3,227	$273.26	50
Hawaii	10,301	$839	$814.81	8
Idaho	16,662	$884	$530.66	30
Illinois	105,223	$8,825	$838.74	7
Indiana	78,819	$2,727	$345.96	45
Iowa	33,161	$2,654	$800.43	9
Kansas	31,379	$1,905	$607.03	21
Kentucky	48,675	$2,986	$613.54	19
Louisiana	48,180	$2,312	$479.80	38
Maine	14,629	$940	$642.89	17
Maryland	57,516	$3,429	$596.26	23
Massachusetts	59,257	$3,709	$625.84	18
Michigan	97,843	$3,649	$372.97	42
Minnesota	57,395	$4,385	$763.95	11
Mississippi	39,890	$1,614	$404.62	41
Missouri	71,918	$2,448	$340.41	46
Montana	12,345	$972	$787.26	10
Nebraska	20,101	$1,448	$720.30	13
Nevada	25,925	$1,421	$548.30	27
New Hampshire	13,094	$751	$573.53	25
New Jersey	75,393	$4,580	$607.42	20
New Mexico	27,435	$1,338	$487.60	36
New York	127,230	$11,151	$876.46	6
North Carolina	111,879	$4,068	$363.65	43
North Dakota	10,036	$1,669	$1,662.84	2
Ohio	113,673	$5,888	$517.99	32
Oklahoma	47,713	$2,568	$538.16	29
Oregon	35,999	$1,799	$499.79	33

Appendix 1 (continued)

State	Vehicle Miles Traveled (millions)	Expenditures (millions)	Expenditures per 10,000 Miles Traveled	Rank
Pennsylvania	100,945	$9,543	$945.41	4
Rhode Island	7,833	$429	$547.50	28
South Carolina	51,726	$1,605	$310.26	48
South Dakota	9,324	$924	$990.51	3
Tennessee	76,670	$2,247	$293.03	49
Texas	258,122	$12,689	$491.58	35
Utah	29,604	$1,231	$415.85	40
Vermont	7,314	$675	$923.29	5
Virginia	82,625	$4,315	$522.22	31
Washington	59,653	$4,100	$687.24	15
West Virginia	19,827	$1,148	$578.82	24
Wisconsin	62,073	$4,309	$694.17	14
Wyoming	9,597	$728	$759.06	12
U.S. Total	**3,095,373**	**$167,380**	**$540.74**	**-**

Source: Federal Highway Administration, U.S. Census Bureau, and Citizens Research Council calculations

Appendix 2
State Level Fuel Tax Rates, August 2018 (cents per gallon)

State	Gas Tax Rate	All Gas Taxes	Rank	Diesel Tax Rate	All Diesel-Taxes	Rank
Alabama	18.0	19.0	43	19.0	20.8	43
Alaska	8.0	9.0	50	8.0	9.0	50
Arizona	18.0	19.0	44	18.0	19.0	46
Arkansas	21.5	21.8	38	22.5	22.8	37
California	41.7	49.9	2	36.0	69.2	2
Colorado	22.0	23.3	35	20.5	21.8	39
Connecticut	25.0	25.0	31	43.9	43.9	7
Delaware	23.0	23.0	37	22.0	22.0	38
Florida	4.0	33.5	13	4.0	34.4	12
Georgia	26.8	27.3	26	30.0	30.5	21
Hawaii	16.0	18.5	46	16.0	18.5	47
Idaho	32.0	33.0	15	32.0	33.0	15
Illinois	19.0	35.1	10	21.5	37.6	8
Indiana	29.0	46.7	4	48.0	49.0	4
Iowa	30.7	30.7	20	32.5	32.5	17
Kansas	24.0	25.0	30	26.0	27.0	29
Kentucky	24.6	26.0	29	21.6	23.0	35
Louisiana	20.0	20.9	39	20.0	20.9	40
Maine	30.0	31.4	18	31.2	31.9	19
Maryland	25.6	35.5	8	26.4	36.2	9
Massachusetts	24.0	26.7	27	24.0	26.7	30
Michigan	26.3	42.7	5	26.3	44.1	6
Minnesota	28.5	28.6	24	28.5	28.6	25
Mississippi	18.0	18.4	47	18.0	18.4	48
Missouri	17.0	17.3	48	17.0	17.3	49
Montana	31.5	32.3	17	29.3	30.0	24
Nebraska	28.0	28.9	23	28.0	28.3	26
Nevada	23.0	23.8	34	27.0	27.8	28
New Hampshire	22.2	23.8	33	22.2	23.8	33
New Jersey	10.5	37.2	6	13.5	44.3	5
New Mexico	17.0	18.9	45	21.0	22.9	36
New York	8.0	33.3	14	8.0	31.5	20
North Carolina	35.1	35.4	9	35.1	35.4	11
North Dakota	23.0	23.0	36	23.0	23.0	34
Ohio	28.0	28.0	25	28.0	28.0	27
Oklahoma	19.0	20.0	41	19.0	20.0	44
Oregon	34.0	34.0	12	34.0	34.0	14

Appendix 2 (continued)

State	Gas Tax Rate	All Gas Taxes	Rank	Diesel Tax Rate	All Diesel Taxes	Rank
Pennsylvania	57.6	58.7	1	74.1	75.2	1
Rhode Island	33.0	34.1	11	33.0	34.1	13
South Carolina	20.0	20.8	40	20.0	20.8	42
South Dakota	28.0	30.0	22	28.0	30.0	23
Tennessee	25.0	26.4	28	24.0	25.4	31
Texas	20.0	20.0	42	20.0	20.0	45
Utah	29.4	30.1	21	29.4	30.1	22
Vermont	12.1	31.2	19	28.0	32.0	18
Virginia	16.2	16.8	49	20.2	20.8	41
Washington	49.4	49.5	3	49.4	49.5	3
West Virginia	20.5	35.7	7	20.5	35.7	10
Wisconsin	30.9	32.9	16	30.9	32.9	16
Wyoming	23.0	24.0	32	23.0	24.0	32
United States Average	**24.3**	**28.6**	**--**	**26.0**	**30.2**	**--**

* Sales tax rates are calculated using rates on July 1, 2018. In Michigan, the Sales Tax on gasoline was 15.4 cents per gallon, and the Sales Tax on diesel fuel was 16.8 cents per gallon.

Source: U.S. Energy Information Administration

Appendix 3
State Vehicle Registration Fee Collections, 2016

State	Collections (millions)	Rank	Per-Capita Collections	Rank
Alabama	$236	29	$48	45
Alaska	$61	47	$82	25
Arizona	$231	30	$33	48
Arkansas	$163	37	$55	40
California	$4,067	1	$103	17
Colorado	$592	16	$107	15
Connecticut	$224	31	$63	37
Delaware	$54	48	$57	39
Florida	$1,552	4	$75	29
Georgia	$367	23	$36	47
Hawaii	$378	22	$264	1
Idaho	$186	35	$111	13
Illinois	$1,741	3	$136	7
Indiana	$341	24	$51	42
Iowa	$632	15	$202	2
Kansas	$245	28	$84	22
Kentucky	$218	32	$49	44
Louisiana	$137	40	$29	49
Maine	$109	43	$82	24
Maryland	$493	19	$82	23
Massachusetts	$464	21	$68	34
Michigan	$1,071	6	$108	14
Minnesota	$751	10	$136	8
Mississippi	$158	38	$53	41
Missouri	$304	26	$50	43
Montana	$152	39	$146	6
Nebraska	$201	33	$105	16
Nevada	$197	34	$67	35
New Hampshire	$116	42	$87	20
New Jersey	$643	14	$72	31
New Mexico	$250	27	$120	10
New York	$1,500	5	$76	28
North Carolina	$797	9	$78	26
North Dakota	$122	41	$161	5
Ohio	$866	8	$75	30
Oklahoma	$728	11	$186	3
Oregon	$553	17	$135	9

Appendix 3 (continued)

State	Collections (millions)	Rank	Per-Capita Collections	Rank
Pennsylvania	$900	7	$70	33
Rhode Island	$45	49	$43	46
South Carolina	$318	25	$64	36
South Dakota	$103	44	$120	11
Tennessee	$476	20	$72	32
Texas	$2,544	2	$91	19
Utah	$184	36	$60	38
Vermont	$72	46	$115	12
Virginia	$657	13	$78	27
Washington	$668	12	$92	18
West Virginia	$4	50	$2	50
Wisconsin	$494	18	$86	21
Wyoming	$101	45	$173	4
United States Average	**$549**	**--**	**$85**	**--**

Source: U.S. Census Bureau

Endnotes

1 21st Century Infrastructure Commission. (2016). 21st Century Infrastructure Commission Report. Retrieved from: https://www.michigan.gov/documents/snyder/21st_Century_Infrastructure_Commission_Report_555079_7.pdf

2 Siracuse, Michael and Zin, David. (2019). "State Notes: The Rising Costs of Road Repair." Senate Fiscal Agency. Retrieved from: http://www.senate.michigan.gov/sfa/Publications/Notes/2019Notes/NotesWin19dzms.pdf

3 MiFuture.gov. (2018). MDOT Infrastructure Annual Measures. Retrieved from: https://future.michigan.gov/dataset/MDOT-Infrastructure-Annual-Measures/3usj-47ae

4 William Hamilton. (2019). Budget Briefing: Transportation. House Fiscal Agency. Retrieved from: https://www.house.mi.gov/hfa/PDF/Briefings/MDOT_BudgetBriefing_fy18-19.pdf

5 The Road Improvement Program. (2018). Key Facts About Michigan's Surface Transportation System and Federal Funding. Retrieved from: http://www.tripnet.org/docs/Fact_Sheet_MI.pdf

6 Egan, Paul. (2018). "Does your body ache from hitting potholes? 5 reasons Michigan has lousy roads." The Detroit Free Press. Retrieved from: https://www.freep.com/story/news/local/michigan/detroit/2018/03/13/five-reasons-michigan-lousy-roads-potholes/407807002/

7 Michigan Department of Transportation. (2015). 2015-2019 Five-Year Transportation Program. Retrieved from: https://www.michigan.gov/documents/mdot/MDOT__5_Year_Plan2015-2019_479645_7.pdf

8 United States Environmental Protection Agency. Light-Duty Vehicle C02 and Fuel Economy Trends. https://www.epa.gov/fuel-economy-trends/report-tables-and-appendices-co2-and-fuel-economy-trends

9 Senate Fiscal Agency. Michigan's Major Taxes: revenue Estimates, Tax Rates, and Yields for FY2018-19 & FY2019-20. Retrieved from: http://www.senate.michigan.gov/sfa/Revenue/AmountMajorTaxes.PDF

10 Pula, Kevin. (2017). "Vehicle Registration Fees by State." National Conference of State Legislatures. Accessed from: http://www.ncsl.org/research/transportation/registration-and-title-fees-by-state.aspx

11 Michigan Department of Transportation. "Why doesn't Michigan have toll roads?" https://www.michigan.gov/documents/mdot/MDOT_Toll_Roads_Brochure_548788_7.pdf

12 Fisher, Ronald. (2018). Michigan at a Crossroads: Infrastructure Investment and Financing for the Incoming Gubernatorial Administration. Michigan State University Extension. Accessed from: https://www.canr.msu.edu/michiganpolicyguide/uploads/files/11-21%20infrastructure-fischer%20final.pdf

13 Citizens Research Council. (2011). "What If Michigan Had Enacted A Price Based Gasoline Tax In 1997?". Accessed from: https://crcmich.org/PUBLICAT/2010s/2011/note201102.pdf

14 Jeffries. Ellen. (2018). State Budget Overview. Senate Fiscal Agency. Accessed from: http://www.senate.michigan.gov/sfa/Publications/BudUpdates/StateBudgetOverviewOct2018.pdf

15 Oosting, Jonathan and LeBlanc, Beth. (2018). "1.3B spending deal shifts school aid to pay for roads, environmental cleanups." The Detroit News. Accessed from: https://www.detroitnews.com/story/news/local/michigan/2018/12/20/pending-budget-deal-shifting-school-aid/2378240002/

16 Michigan Agency for Energy. Motor Gasoline. Accessed from: https://www.michigan.gov/documents/energy/summerfuels2017_571817_7.pdf

17 Senate Fiscal Agency. (2018). Composition of Michigan State Government Debt. Accessed from: http://www.senate.michigan.gov/sfa/Revenue/StateDebtComposition.PDF

18 Constitution of Michigan of 1963 Article IX, Section 15. Accessed from: http://www.legislature.mi.gov/(S(p2iqahe2bcz5ehjmwufmjrzo))/mileg.aspx?page=getObject&objectName=mcl-Article-IX-15

19 Constitution of Michigan of 1963 Article IX, Section 9. Accessed from: http://www.legislature.mi.gov/(S(p2iqahe2bcz5ehjmwufmjrzo))/mileg.aspx?page=getObject&objectName=mcl-Article-IX-9

20 Public Act 51 of 1951. Accessed from: http://www.legislature.mi.gov/(S(atq4ghgg0l4xbqt2cqvuror1))/mileg.aspx?page=GetObject&objectname=mcl-Act-51-of-1951

21 National Center for Pavement Preservation. (2007). At the Crossroads: Preserving Our Highway Investment. Accessed from: https://www.pavementpreservation.org/wp-content/uploads/2011/12/crossroads.pdf

22 William Hamilton. House Fiscal Agency. "Fiscal Focus: State Transportation Borrowing and Debt Service." March 2015. https://www.house.mi.gov/hfa/PDF/Alpha/Fiscal_Focus_Transportation_Bonds_Debt.pdf

23 Michigan Department of Transportation. (2018). 2017 Annual Financial Report. Accessed from: https://www.michigan.gov/documents/mdot/2017_Annual_Financial_Report_616405_7.pdf

24a Michigan Department of Transportation. (2019) MDOT's Bonding Information. Accessed from: https://www.michigan.gov/mdot/0,4616,7-151-9623_10736_66039---,00.html; California Department of Treasury.

24b Comparison of Other States' General Obligation Bond Ratings. Accessed from: https://www.treasurer.ca.gov/ratings/current.asp

25 Stupak, Jeffrey. (2018). "Economic Impact of Infrastructure Investment." Congressional Research Service. Accessed from: https://fas.org/sgp/crs/misc/R44896.pdf

26 Michigan Department of Transportation. (2016). 2040 State Long-Range Transportation Plan: Highway/Bridge White Paper. Accessed from: https://www.michigan.gov/documents/mdot/2040_Highway-Bridge_White_Paper_Final_31716_521164_7.pdf

27 United States Department of Transportation. (2018). Public Road Length – 2017 Miles By Ownership. Accessed from: https://www.fhwa.dot.gov/policyinformation/statistics/2017/hm10.cfm

28 American Association of State Highway and Transportation Officials. (2016). "Transportation Governance and Finance: A 50-State Review of State Legislatures and Departments of Transportation." Accessed from: http://financingtransportation.org/pdf/50_state_review_nov16.pdf

29 Citizens Research Council. (2008). "Improving the Efficiency of Michigan's Highway Revenue Sharing Formula." Accessed from: https://crcmich.org/PUBLICAT/2000s/2008/memo1085.pdf

30 Citizens Research Council. (1997). "Michigan Highway Finance and Governance." Accessed from: https://crcmich.org/PUBLICAT/1990s/1997/rpt321.pdf

31 U.S. Department of Transportation. State Statistical Abstracts 2015: Michigan. Accessed from: https://www.fhwa.dot.gov/policyinformation/statistics/abstracts/2015/state.cfm?loc=mi"

32 Michigan Transportation Asset Management Council. Pavement Conditions – Federal Aid. Accessed from: https://www.mcgi.state.mi.us/mitrp/tamcDashboards/reports/pavement/conditions?year=2017&areaType=County&area=Ingham&jurisdictionType=County%20Road%20Commission&reportType=laneMiles

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