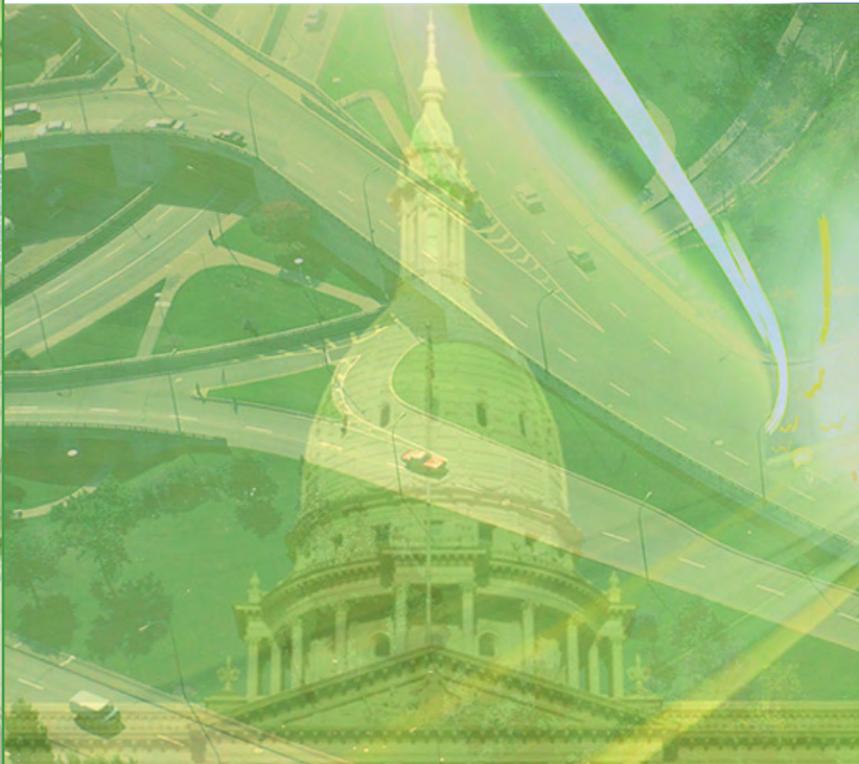




# **Section 394 Report**

*Analysis of Transportation Funding  
Distribution Formula*



MARCH 1, 2010





**Executive Summary** ..... 2

**Rationale for the Transportation Funding Formula** ..... 4

    BALANCE FUNDING FOR MOBILITY AND ACCESS ..... 4

    TRANSPORTATION OPTIONS ..... 7

    STABILITY AND PREDICTABILITY ..... 7

    ASSET STEWARDSHIP ..... 8

**Brief History of Michigan Transportation Finance** ..... 10

**Description of Current State and Federal Transportation Funding** ..... 14

    OVERVIEW OF MICHIGAN'S FEDERAL TRANSPORTATION FUNDING ..... 14

    DESCRIPTION OF CURRENT ACT 51 FORMULA ..... 16

**Summary of State DOT Revenue Distribution Strategies** ..... 28

    FINDINGS ..... 28

    FACTORS USED TO DISTRIBUTE FUNDING ..... 28

    TRANSIT FUNDING SOURCES ..... 28

    PROBLEMATIC ELEMENTS OF TRANSPORTATION FUNDING SYSTEMS ..... 29

**Alternative Formula Scenarios** ..... 30

    ALTERNATIVES FOR ROAD FUNDING ..... 30

    RESULTS ..... 31

    ALTERNATIVES TO THE TRANSIT FORMULA ..... 38

**How Formula Funding Contributes to Statewide Goals** ..... 41

    STATE LONG RANGE PLAN ..... 41

    STATE TRANSPORTATION COMMISSION ..... 41

    HOW GOALS COMPARE TO DISTRIBUTION SCENARIOS ..... 42

**Alternative Factors to Consider in Distribution of Transportation Revenue** ..... 43

    VARIABLES ..... 43

    CHANGING RELATIVE WEIGHT OF VARIABLES ..... 47

    CHANGING ELIGIBLE RECIPIENTS ..... 47

    SYSTEM JURISDICTION ..... 48

**Future Impact of New Technologies** ..... 49

    TOLL ROADS ..... 49

    ELECTRONIC TOLLING WITH TRANSPONDERS ..... 49

    "OPEN ROAD" TOLLING ..... 49

    VARIABLE PRICING ..... 50

    MILEAGE-BASED TRANSPORTATION FEES ..... 50

**Conclusion** ..... 51

**Appendix A** - Transit Formula

**Appendix B** - Comparison of State DOT Revenue Distribution Strategies

**Appendix C** - AVMT and Lane Mile Scenarios

In accordance with Section 394 of the Michigan Department of Transportation's 2010 budget, this report examines the distribution formula for state transportation funding, compares it with methods used by other states, and with suggested alternatives.

### Funding Formula Rationale

The primary goals of any transportation funding distribution formulae are to:

- Balance investment in assets that provide *mobility* for people and goods, and assets that provide *access* to natural resources and property.
- Provide for a variety of transportation options, so that all potential travelers can be served.
- Ensure stability and predictability, to allow for appropriate long-term planning and investment to maintain assets that will be used for decades.
- Ensure good stewardship of public assets, by encouraging the right investment at the right time.

### Current Formula

Michigan's Act 51 transportation funding formula apportions \$3 billion per year in state and federal user fees to cover the cost to build and maintain Michigan's 120,000-mile road system and much of the cost of operating and maintaining transit systems.

Although the world has changed significantly since Act 51 became law in 1951, the sources of transportation revenue, and the method of their distribution, are largely unchanged. The Act 51 funding formula distributes state transportation revenue for use on transportation systems. It distributes road funding on a percentage basis – through what is called the “external” formula - to state, county and city jurisdictions for use on roads and bridges. It also provides for distribution of public transportation funding among local transit providers. For roads, an “internal” formula then allocates funds to cities, villages and county road commissions based on variables relying largely on population and route miles.

A detailed description of Act 51 formulae and a brief history of transportation funding in Michigan - are included in this report.

### Comparison to Other States

User fees – fuel taxes and registration fees – are the chief source of revenue for highways and transit in other states, as they are in Michigan. Tolls are also a significant source of revenue in many states. Factors for distribution of revenue in other states include road performance indicators, functional classification, motor vehicle registrations, population, urban or rural designation, safety, congestion, and economic development.

The most common problem cited by the other states is an overall lack of transportation funding, not a flaw in the distribution formula.

### Alternative Distribution Scenarios

The funding distribution scenarios for roads and bridges analyzed for this report, compare the current route-mile driven road and bridge formula with alternatives that rely on Vehicle Miles Traveled (VMT) and Lane Miles. Since the “external” formula distributes funds on a percentage basis, the analysis was limited to the county and city “internal” funding distribution formulas, which distribute funds among county and city jurisdictions based on several different variables. Lane Miles and VMT were substituted for the variable of Route Miles in the current formula.

In both of these scenarios, a handful of mostly urbanized jurisdictions would benefit by the suggested change, while the majority of other road agencies would see a reduction in funding, in some cases by more than 40%.

The maps at the following links show the change in transportation revenue distribution to cities, villages and county commissions under the alternative formulas. The maps are also included on pages 32 – 36 of the report as [Figure 6.2 B](#), [Figure 6.2 C](#), [Figure 6.2 E](#), and [Figure 6.2 F](#).

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***The conclusions of the Transportation Funding Task Force remain sound: Michigan needs to double its investment in transportation.***

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For the transit formula, the language of Section 394 suggested an emphasis on service performance. The analysis conducted for this report estimated the results of a formula based on levels of ridership, service hours, and service miles – the most common measures of transit performance – and compared that to the results of the current transit formula. The comparison indicated that such a formula would not significantly shift the funding results. Analysis of a formula proposed by one of Michigan’s transit associations was also reviewed and while it would alter the amount of funding most agencies would receive, the overall results were not fundamentally different from the current transit formula.

### Relationship to State Goals

Michigan’s State Long Range Transportation Plan, required by federal law, and the State Transportation Commission, set goals for the transportation system.

STATE LONG RANGE PLAN GOALS	STATE TRANSPORTATION COMMISSION GOALS
Stewardship	Strengthening the economy
System Improvement	Access to opportunity
Efficient and effective operations	Efficiency
Safety and Security	Safety

While the Act 51 road funding distribution formulae are not explicitly linked to specific system-wide goals, Act 51 does support stewardship, access, and system improvement through the broad distribution of funds and the eligible uses of funding it stipulates. The suggested highway funding alternatives, by directing funding to high-traffic jurisdictions, could be said to support efficiency in the transportation system, by providing funds for investment where capacity is most needed. The existing method of distributing state funding to transit agencies tracks closely with several service indicators, and supports both stew-

ardship and access by ensuring that funding reaches public transportation agencies in all areas of the state.

### Alternative Variables

Lane Miles, VMT, and performance are just a few of the many different variables that could be used to develop a formula for distribution of transportation revenue, depending on where investment is most desired. Not only the variety of variables, but the relative weight they are given could effect the outcome. Beyond the variables, changing other factors, such as the number of eligible recipients or the relative size of the system in each jurisdiction, would also impact the distribution of transportation revenue.

### The Impact of New Technologies

While tolls are often thought of as a revenue collection mechanism, new technology offers the ability to track how the road system is being used and thus assist in funding distribution, without impeding traffic. Clearly, in the years to come, both at the state and national level, more thought will need to be given to mileage-based user fees that treat transportation more like a utility, to ensure that all users pay their fair share to maintain and expand the transportation system sufficiently to meet a growing demand.

### Conclusion

Michigan’s transportation funding distribution formula, while complicated, is no more nor less complicated than those of other states. As indicated by other states and demonstrated by the two alternative scenarios, the real problem lies not with how the revenue is distributed, but with how much revenue is available for distribution. Changing the distribution formula would redistribute revenue to a handful of largely urbanized jurisdictions at the expense of all others. Doing so would certainly undermine the service and condition of transportation assets in most of the state.

The conclusions of the Transportation Funding Task Force remain sound: Michigan needs to double its investment in transportation if it is to maintain the transportation assets it currently has and improve the economy. Increased investment at the state and federal level is even more vital if we are to build the transportation systems that will be necessary to preserve Michigan’s place in the economy of tomorrow.

Every state government collects revenue for transportation and distributes the funds over some or all of its transportation system. This report examines Michigan’s system for distributing transportation funds, compares it with other states’ systems, and compares it with some suggested alternatives.

In this chapter we will examine the necessary functions of a transportation funding formula. These primarily include the need to:

- Balance funding for mobility and access
- Provide for various transportation options
- Ensure stability and predictability
- Ensure good stewardship of public assets

## BALANCE FUNDING FOR MOBILITY AND ACCESS

Transportation has two functions: to provide *mobility* and *access*.

**Access:** to each usable piece of property in the state, allowing land to be used productively, and letting people reach their homes and other places.

**Mobility:** for people and goods, giving people greater economic opportunity, moving goods to broader and better markets, and enabling the delivery of services.

Roads, in particular, form a hierarchy based on their contribution to one or the other of these functions. This hierarchy is the primary basis of the funding formula. Figure 2.1 A on the next page illustrates the various functional classes one might encounter on a typical trip.

## Road Functional Classification

The Federal Highway Administration imposes a standard classification on the nation’s road system, called National Function Classification (NFC). The logic of functional classification is key to understanding basic road finance. Here is how Michigan’s roads are divided among the various levels of importance in the NFC:

BROAD N.F.C. CATEGORIES AND JURISDICTION				
Broad NFC Categories and Jurisdiction: Route Miles				
National Functional Classification	Jurisdiction			
	State	County	City	Total
Interstate and Other Freeways	1,945	0	0	1,945
All Other Arterials	7,269	4,827	2,172	14,268
All Collectors	428	21,854	2,144	24,426
Local-Access Roads & Streets	14	62,568	16,714	79,296
Total	9,656	89,249	21,030	119,935

Sources: Michigan Geographic Framework, Version 2009 and Preliminary

## MDOT Sufficiency Report of 2009

*Arterial roads* contribute the most to statewide or regional mobility. This includes Interstate and other freeways, principal, and minor arterials. Arterial roads may be urban or rural, depending on location (within or outside urban boundaries developed cooperatively between MDOT and local agencies, subject to FHWA approval.)

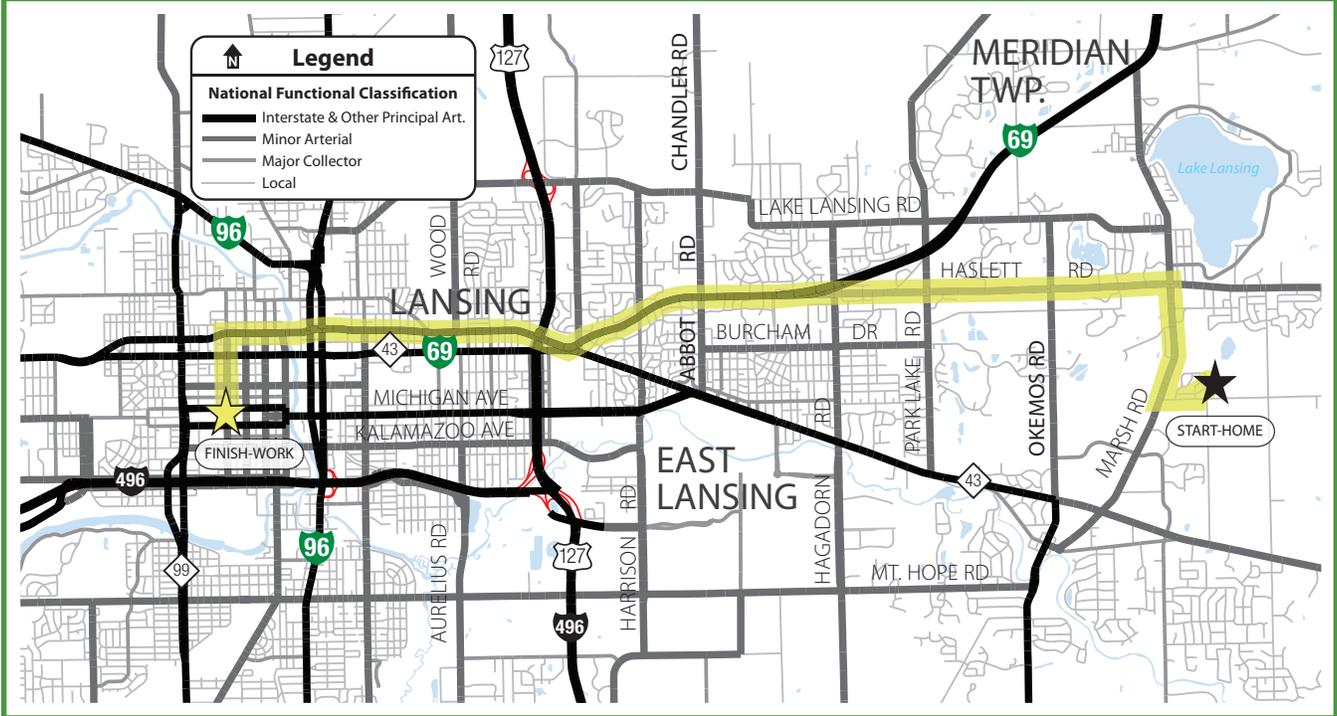
*Collector roads* accumulate the traffic generated on local roads and distribute it on to arterial roads. Collectors perform a mixed mobility and property-access role. Sub-classifications are *urban collectors*, *rural major collectors*, and *rural minor collectors*.

*Local-access roads and streets* give access to individual parcels of property, almost exclusively. They contribute little to statewide or regional mobility. Most trips originate or end on local-access roads, but most road users do most of their traveling on collectors and arterials. As with other roads, local-access roads may be rural or urban.

# TYPICAL TRIP BY FUNCTIONAL CLASS

Figure 2.1 A

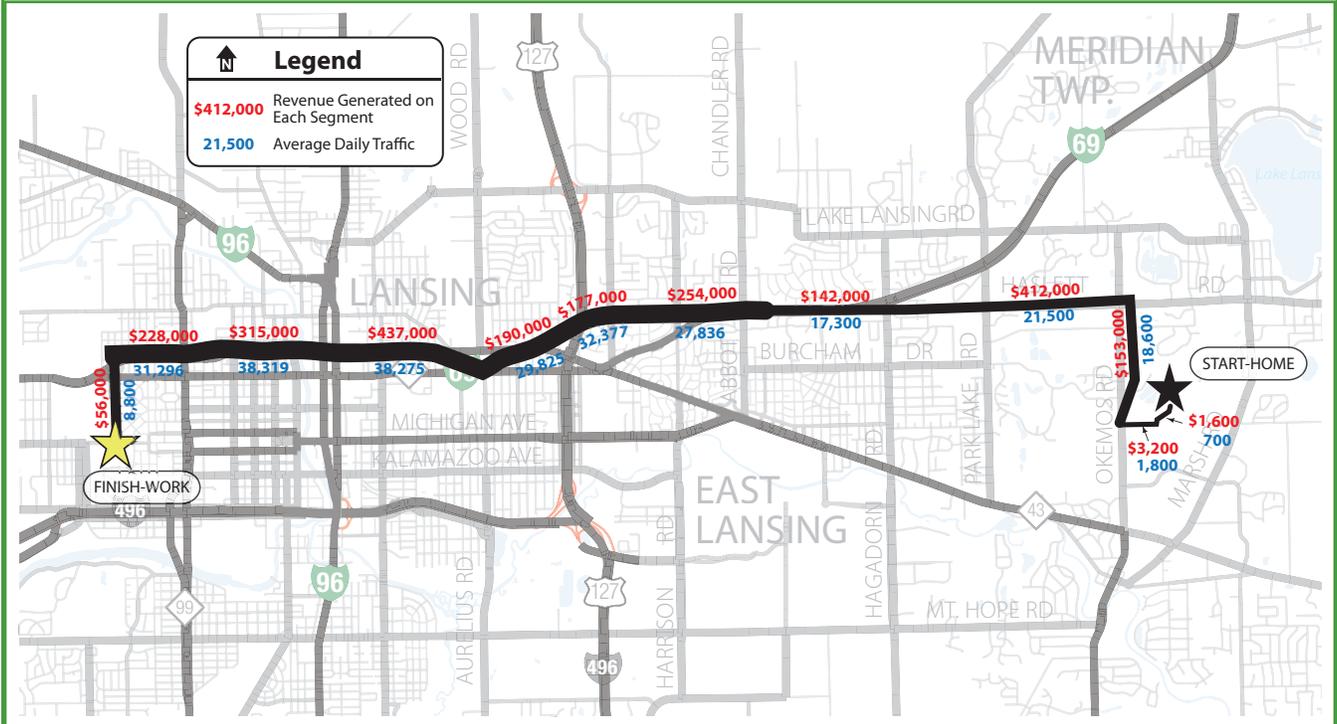
For a 10-Mile Journey From Home to Work



# REVENUE GENERATED BY ROAD SEGMENTS ANNUALLY

Figure 2.1 B

(Daily Traffic Volume x 0.025 x length x 365)



## User-fee Generation

Michigan's Act 51 distributes road-user fees over the 120,000 miles of Michigan's road system. Road users pay user fees at a steady rate regardless of which road they're on, and regardless of whether the road is empty or congested; paved or unpaved; rough, smooth, or covered with snow.

The funding formula must apportion roughly \$3 billion/year in state and federal user fees. From this revenue must come the entire cost to build and maintain Michigan's 120,000-mile road system and a portion of the cost of operating and maintaining transit systems across the state. While transportation revenue collection is driven by use, distribution of that revenue to roads is based not just on system use but on other considerations as well.

## Necessary Cross-subsidy

One goal of a transportation funding formula should be to balance investment for mobility and investment for access appropriately. Some cross-subsidy is inevitable – and even desirable – in striking that balance.

A mile of rural local road with 400 cars and a few trucks a day will generate about \$11 in user fees per day. A mile of residential streets with 600 cars a day and almost no trucks might yield \$16/day in revenue. A mile of big-city freeway carrying 100,000 cars and 10,000 trucks will generate some \$3,200/day in transportation revenue. Other roads fall between these extremes.

If road funding distribution exactly matched revenue collection, local roads would receive almost no investment. Instead, the Act 51 road and bridge formula balances distribution so that transportation revenue generated by use of the high-volume main

## Revenue Collection

This report focuses on revenue distribution, but we will make brief mention of where this revenue comes from: road-user fees and some other taxes, at both the state and federal levels. Here's what Michigan road users pay:

ROAD-USER FEE RATES		
	Michigan	Federal
Gasoline tax per gallon	18.7 cents	18.4 cents
Diesel-fuel tax per gallon	15.0 cents	24.4 cents
Typical auto registration per year	\$99.67	—
Standard 80,000-lb. truck registration	\$1,660.00	\$550

These fees are like tolls for the use of Michigan's roads. Michigan has no toll roads, but road users still pay for each mile traveled. A typical Michigan driver with a car of average value, driving 15,000 miles per year, pays user fees that are the equivalent of 2.4 cents per mile. (For comparison, cash tolls on other states' toll roads are usually between 3 and 6 cents per mile, and can be as high as 35 cents. Drivers in these states also typically pay registration fees and state gas tax in addition to tolls). A typical 5-axle truck in Michigan, weighing 80,000 lbs. pays the equivalent of 8.3 cents per mile. For the typical Michigan auto driver, these "tolls" come to roughly a dollar a day, and include all Michigan fuel and vehicle taxes.

MICHIGAN ROAD USER FEES PER MILE	
Typical auto user	2.4 cents/mile
Standard heavy truck	8.3 cents/mile

These road user fees pay for almost all the cost of Michigan's road and transit systems, with the rest coming from sales taxes on auto-related purchases, local property taxes, and transit fares.

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*One goal of a transportation funding formula should be to balance investment for mobility and investment for access appropriately. Some cross-subsidy is inevitable – and even desirable – in striking that balance.*

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roads that provide the most mobility help pay for low-volume roads that provide the greatest access, but do not carry enough traffic to cover their costs. Figure 2.1 B on page 5 illustrates revenue “generated” by vehicles traveling each road segment of a typical trip.

A similar situation exists for different regions of the state. Inevitably, the more populous parts of the state help fund road improvements in areas that are less highly traveled.

The main function of the formula is to properly apportion the rates of spending on through-roads and local roads to provide an acceptable level of service on local roads without under-investing in arterials. This requires a balance between the access and mobility functions of roads, which may include cross subsidy to achieve that balance.

The local street system is so huge – 79,000 miles – that it could easily absorb all the road user fees paid on all roads, leaving none for arterial roads. The existing Act 51 formula recognizes this by favoring state highways, county primary roads, and city major streets. In addition, federal funding is almost entirely directed to the higher volume systems, which serve statewide and regional needs. Local roads are funded at a lower rate, and are currently expected to be funded partially by local users and local communities, typically through township, city, and county property taxes, or from direct assessments on properties adjoining the roads.

Just as local cities, villages and townships are not expected to bear the full cost of the main roads that pass through them, a key policy question is how much higher-volume road users should pay to maintain local roads used primarily by local residents.

## TRANSPORTATION OPTIONS

Roads and transit systems are interrelated components of the transportation system. Bus systems depend on the road network, and transit systems - bus and rail - can help reduce road congestion. Because of this, in most states, and at the federal level, the decision has been made to use auto and truck user fees to help support transit systems.

Michigan supports public transit and certain other transportation programs from road-user fees. Over the past several decades, a portion of road-user fees has been set aside to contribute to the capital and operating costs of public transit and other transportation services. The remainder of transit funding comes from a portion of sales tax revenue on auto-related sales, local property taxes, and riders’ fares.

Other modes are also provided for in Act 51, although with expenditure provisions rather than specific distributions. These provisions encourage expenditure to ensure all modes remain safe and viable, specifically freight and passenger rail, intercity bus, and non-motorized transportation.

## STABILITY AND PREDICTABILITY

Most states and the federal government treat transportation expenditures differently from other government spending. Transportation revenue is usually separate from general government appropriations.

Transportation funding is designed to be stable from year to year to provide predictable amounts of funding for projects that can span several years from proposal through construction. Agencies must also be able to maintain very long-lived assets (frequently 12 years for transit buses, 20 years or more for pavements, and 50 years for bridges) and funds for preventive maintenance cannot be raided for short-term needs if the system is to remain viable.

## Dedicated User Fees

Most states restrict road-user fees to road, or road and transit, use. Article IX, Section 9 of Michigan’s Constitution of 1963 restricts all taxes specifically on vehicles and vehicle fuel to road and public-transportation use (except for the costs of collection, and regulatory fees applied to the fuel and trucking industries).

Registration and fuel taxes are not taxes at all, but fees within the meaning of the Michigan Constitution. Road-user fees meet the three tests that distinguish fees and taxes:

- They are not levied on the population generally, but only on persons using vehicles.
- They are not used for general expenditures, but only for roads and transit.
- They are in proportion to the use that is made of the service (very closely for the fuel tax, less so for the registration tax).

Michigan's Constitution also gives authority to set transportation policy and authority over the MDOT program to the State Transportation Commission (STC) in Article V, Section 28. These two features of the Constitution of 1963 – the protection of road user fees and the authority given to the STC – help ensure a consistent and predictable approach for transportation funding.

Act 51's statutory formula ensures funding predictability for Michigan's transit agencies, cities, villages, and county road commissions, by providing consistency from one appropriations process to the next. Although the formula may be changed by the Legislature, it has typically done so by adjusting the shares of all recipients in one or more categories simultaneously, not by appropriating money to or from individual agencies.

While the transportation funding distribution formula is relatively stable, it is beginning to provide less stability. First, it is at a fixed rate per gallon, which puts transportation budgets at risk in times of inflating costs; and second, the number of gallons is dependent on the fuel efficiency of vehicles, which is rising, further eroding the amount of revenue available for transportation investment.

For transit, there are further cracks in stability and predictability. The portion of transit funding that derives from sales taxes does not enjoy the same constitutional protection as the portion that derives from fuel taxes, and as a result has repeatedly been "unallotted" or withheld altogether, and used to fund other needs as the economic crisis continues to strain state government resources.

## ASSET STEWARDSHIP

It is impossible to know the true value of Michigan's transportation assets. The expenditure over more than 150 years totals several hundreds of billion dollars for right of way, pavements, vehicles, rail lines, and facilities. Pavements, bridges, and vehicles must be replaced more or less frequently. Road real estate lasts forever, but its value can't be compared with adjacent land, because all the land in the state derives its value from its relation to the road system. The value of the road system as a whole is literally incalculable, and underlies all the wealth of the state.

The value of the "working parts" of the road system – pavements, structures, signals, signs and more – is almost as hard to know. But the cost of maintaining and replacing it is well known, and very large. This is where the bulk of transportation spending goes. The funding formula is only the first stop in providing for the road system. The remaining disposition of some \$3 billion in annual investment is managed by Michigan road agencies.

Michigan's Act 51 mandates the use of asset management by Michigan road agencies for all roads eligible for federal aid. Michigan's public transportation agencies also practice asset management using MDOT's Public Transportation Management System (PTMS) to establish vehicle, equipment, and facility inventories, forecast needs, and develop investment strategies. In the future, asset management could be expanded to all roads and other classes of assets (to the extent that detailed analysis is warranted).

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*Registration and fuel taxes are not taxes at all, but fees within the meaning of the Michigan Constitution.*

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## Avoiding Perverse Incentives

Michigan's road funding distribution formula is largely based on road mileage and proxies of use (road class, population, and vehicles). Michigan has generally avoided awarding funds based on the need to replace deteriorated assets. Funding based on poor pavement quality or closed bridges actually encourages road agencies to let marginal assets deteriorate to the point they become eligible for increased funding. Strict adherence to asset management principles will avoid creating perverse incentives for neglect.

## Asset Management

Road and transit agencies manage their assets by knowing the condition of each lane or each capital asset, forecasting its rate of deterioration and remaining service life, and assigning the appropriate strategy of maintenance, preventive maintenance, or replacement.

The goals of asset management are to:

- Reduce the overall level of expenditure
- Improve the overall condition of the system
- Smooth the rate of expenditure from year to year, and
- Prevent too much of the system from coming due for renewal at once.

Careful asset management can prolong the life of an asset through preventive maintenance, delaying the date when very expensive total reconstruction or replacement is needed. But the system is utterly dependent on having enough revenue to apply the needed solutions. Failure to adhere to asset management amounts to disinvestment in the system, when salvageable assets are lost for lack of ongoing expenditure, resulting in a much greater total expenditure in future years.

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*Careful asset management can prolong the life of an asset through preventive maintenance, delaying the date when very expensive total reconstruction or replacement is needed.*

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# Brief History of Michigan Transportation Finance

Act 51 of 1951 was not the first system for financing roads in Michigan. Roughly four other systems were tried between statehood and 1951: there were township roads, state-reward roads, and two formulas for apportioning revenue among state highways and local roads.

When the need for automobile roads became obvious before World War I, new institutions were developed to meet a new need, but there was no guidance on the best way to do the job. Between 1905 and 1951 there was considerable experimentation with revenue sources and road administration in every state and at all levels of government. In the 1920's, every state settled on fuel and vehicle taxes as the appropriate way to finance automobile roads.

By 1931, Nineteenth-century township road administration had been abandoned, but it took another twenty years to find a workable way to divide user fees among state, county, and municipal road agencies. Here is a chronology of the most important events.

## Township Roads, c. 1850–1893

Roads were administered by townships in the decades before and after statehood. On the expectation that roads would principally benefit adjoining landowners, property owners were required to physically work on roads a number of days per year in proportion to property valuation, or to commute the labor requirement with a cash payment or the use of a team of animals. Non-property-owning residents were also required to contribute a day's work per year, or the equivalent tax.

## County Road Act, 1893

Recognizing that township roads, chiefly connecting farms with trading centers, did not provide good town-to-town and county-to-county transportation, the Legislature permitted any county to appoint or elect a county road commission to organize township roads into a system. Counties were authorized to levy road taxes of up to three mills on property, and to submit bond issues to voter approval. By 1905, five counties had road commissions, all in the northern part of the state.

## Advisory Highway Commission, 1903

Under pressure from bicyclists, the Legislature appointed a committee to advise it on highway improvement. State Senator and bicyclist Horatio S. Earle, the principal voice of the Good Roads movement in Michigan, was appointed chairman. The committee recommended a Constitutional amendment permitting state aid to wagon roads. Earle was appointed Commissioner of Highways and hired the first state highway engineer, but his appointment was declared unconstitutional. He continued to serve without pay while lobbying for roads.

## State Reward Road Law, State Highway Department, 1905

With demand for roads beginning to be heard from automobile owners, and over intense opposition from farmers who feared high property taxes, in 1905 the Legislature created the State Highway Department and instituted a state-reward-road system, and enacted a motor-vehicle registration law. Horatio Earle became the first Chairman of the Michigan Highway Commission. Under this system, the state reimbursed counties building gravel roads up to a state standard. The number of counties with road commissions gradually increased. A \$2.00 registration fee was charged for each car.

In 1909 the office of State Highway Commissioner was made elective.

In 1913 the legislature established the first 3,000-mile trunkline system, subject to concurrence of local authorities. This gave local governments power to determine route locations.

## Horsepower Tax, 1915

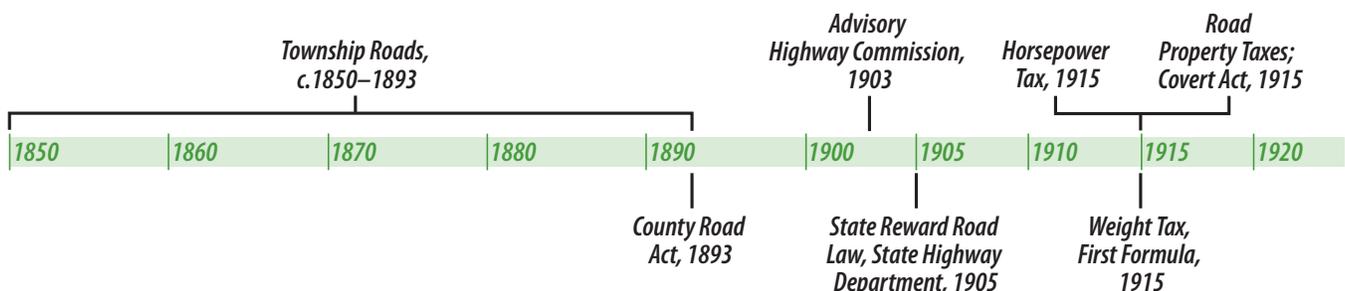
In 1915 (some sources say 1913) a tax was imposed on vehicle engine size, the revenue to be used for highway purposes: \$0.25 per horsepower for gas or steam cars, and \$1.00 for electric cars. (Early vehicle taxes in Europe and this country were based on "horsepower," actually engine displacement.)

## Weight Tax, First Formula, 1915

In 1915 a weight tax was imposed at \$0.25 per hundredweight. Half of the total revenue went to the state, and half to counties and townships. The basis for this fee was traditional toll-road pricing, which reflected the effect of heavy wagons on unpaved roads.

## Road Property Taxes; Covert Act, 1915

This act treated local roads as the responsibility of owners of benefited property. It authorized property owners to initiate road construction by petition, but required land owners to pay at least half of the cost through special assessments.



## Federal-aid Road Act of 1916

Federal law provided grants in aid of up to 50 percent of the cost of rural roads, with funds allocated among the states on the basis of area, population, and road mileage. It established minimum design standards and required proper maintenance.

In 1917 the Michigan Legislature authorized an annual appropriation to match federal aid, and allowed counties and local governments to issue bonds to finance their share of the cost. This law established local participation in state road projects, requiring counties to pay a share ranging from 25 to 50 percent of the total cost, according to assessed valuation.

## Trunkline Bond Issue, 1919

A \$50,000,000 bond issue was approved by voters. The Highway Commissioner was granted powers to initiate trunkline construction and take charge of construction costs to be shared by local and state government. Driver's license fees were instituted, and credited to the General Fund. The authorized size of the trunkline system was gradually increased in the early 1920's, with some routes specified in law.

## Federal-aid System, 1921

In 1921 the State Highway Department began to designate a federal-aid road system, as required by federal law of that year. Federal-aid mileage could not exceed seven percent of total rural mileage.

## Gasoline Tax, 1925

A tax on gasoline of 2 cents per gallon was levied, with all revenue to the State Highway Department except for \$2,000,000 per year for counties. Most states imposed gasoline taxes around this time. Motorists were badly divided over the issue, with fierce opinions on both sides.

Another 1925 law relieved counties and townships of the obligation to contribute a share of the cost of federal-aid roads, with state government required to assume the entire responsibility of state match of 50 percent against federal aid.

The tax on engine size was repealed. Weight was made the sole determinant of license fees.

## First Three-way Formula; First Gasoline-tax Increase, 1927

A formula was instituted dividing state road revenues:

- Cities: \$2,000 per mile of trunkline
- Counties: An amount equaling one half of weight taxes
- State: The remainder

The gasoline tax was raised to 3 cents per gallon.

## End of Township Roads; McNitt Act, 1931

This act consolidated 68,000 miles of township roads into the 83 county road commissions, at the rate of one fifth of total mileage per year for five years.

Weight taxes were apportioned to counties on a pro-rata basis according to county road mileage. A share of gasoline taxes was apportioned to counties: \$2,000,000 in 1932 rising to \$4,000,000 in 1936. It was gradually realized this formula weighed lightly-traveled rural mileage the same as heavily-used urban mileage.

## Dykstra Act, 1931

The state was permitted to pay up to 50 percent of the cost of trunklines in cities of over 50,000 and 100 percent in cities of less than 20,000.

## End of Local Property Taxes for Roads; Second Formula: Horton Act, 1932

This act drastically revised the distribution of state motor-vehicle-tax revenues, cutting the State Highway Department share in half.

All proceeds from the weight tax were given to counties, plus \$6,500,000 of the gasoline tax. Seven-eighths of the weight tax was apportioned to counties in proportion to vehicle registrations, and one-eighth distributed equally to all 83 counties.

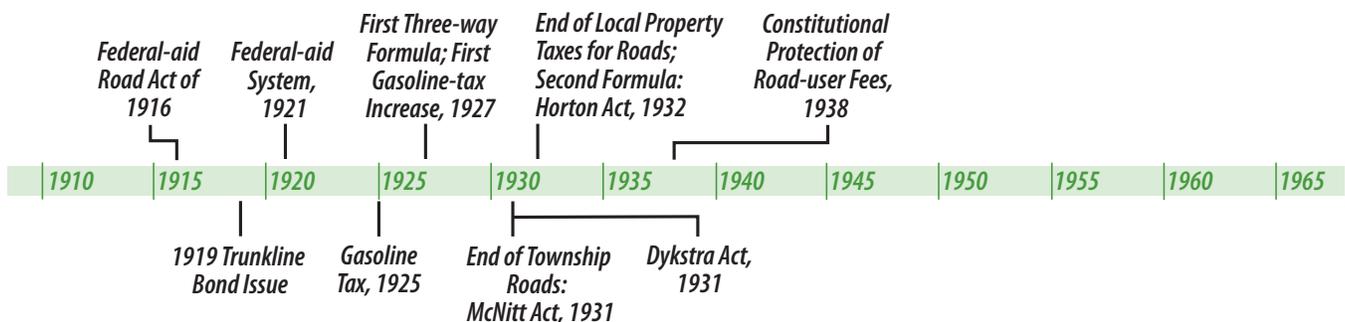
The remainder of the fuel tax was given to the State Highway Department and apportioned for construction this way, after certain other obligations:

- Upper Peninsula: 25 percent
- Lower Peninsula north of Town Line 12: 25 percent
- Lower Peninsula south of Town Line 12: 50 percent

(Town Line 12 is at the latitude of Saginaw.) This formula was intended to meet emergency conditions in the worst of the Depression, but became a more or less permanent allocation system in use until Act 51 of 1951.

## Constitutional Protection of Road-user Fees, 1938

In 1938 a Constitutional amendment was approved restricting motor-vehicle-tax revenues to highway use. (This provision was included in the Constitution of 1963 as Article IX, Section 9, and amended to "transportation purposes" in 1978 upon creation of the Comprehensive Transportation Fund.)



### Institutional Road Program, 1941

State highway funds were made usable on roads on state-owned institutions such as universities, hospitals, and parks, as appropriated by the legislature.

### Limited-access Highways, 1941

In response to worsening traffic accidents and diminishing road capacity, this law empowered state, county and municipal authorities to build roads not giving access to adjoining properties. The first freeways were constructed under this law, beginning with the Detroit Industrial Expressway from Dearborn to Willow Run.

### Interstate Highway System, 1944

A 1944 federal act authorized a 38,000-mile system of Interstate highways. The Michigan Highway Department selected 978 miles in Michigan. No funds were appropriated for this system, which remained dormant until 1956.

### Diesel Fuel Tax, 1947

The growth of Diesel power for trucks required a state 5-cent-per-gallon tax on Diesel fuel. All revenue, plus a \$1.00 special operator's license fee, was credited to the State Highway Fund.

### Michigan Turnpike Act, 1951

This law authorized construction of toll freeways in Michigan, on the pattern of turnpikes in Pennsylvania, Ohio, and Indiana. This act was later repealed in response to creation of the Federal Highway Trust Fund and the federal fuel tax of 1956, and later repealed.

The state gasoline tax rose to 4½ cents per gallon, and the Diesel tax to 6 cents. The federal gasoline tax rose from 1½ cents to 2 cents per gallon.

### Act 51, 1951

The present system of Michigan road finance was enacted in 1951. Originally, Act 51 divided weight- and fuel-tax revenue this way:

State Trunkline Fund	44%
County road commissions	37%
Cities and villages	19%

Act 51 also provides formulas for apportioning the county and city-and-village shares among individual units. These formulas are described in the next section, but in brief, they direct state aid toward county primary roads and city major streets, guaranteeing that the state's roads form a logical network for efficient long-distance travel. Local roads are also eligible for state aid, but at a greatly reduced level.

### Federal Highway Trust Fund, 1956

Creation of the Federal Highway Trust Fund was a major change to federal road finance. The federal fuel tax was increased from 2 to 3 cents per gallon, and the revenue applied to building the toll-free Interstate Highway System that had been authorized in 1944.

### First Act 51 Formula Change, 1957

Act 51 of 1951 was not intended to finance freeways. In 1951, it was expected that Michigan's freeways would be toll roads. The Federal Highway Trust Fund changed this. The Michigan Turnpike Act was repealed, the state fuel tax was increased, and the State Trunkline Fund share was increased to provide the 10 percent matching funds for Interstate construction. In 1959, the federal fuel tax was raised to 4 cents per gallon.

### First State Transit Aid from Fuel Tax, 1972

When the state gasoline tax was raised to 9 cents, half a cent was dedicated to transit aid. The program was continued and modified in 1975.

### Comprehensive Transportation Fund, 1978

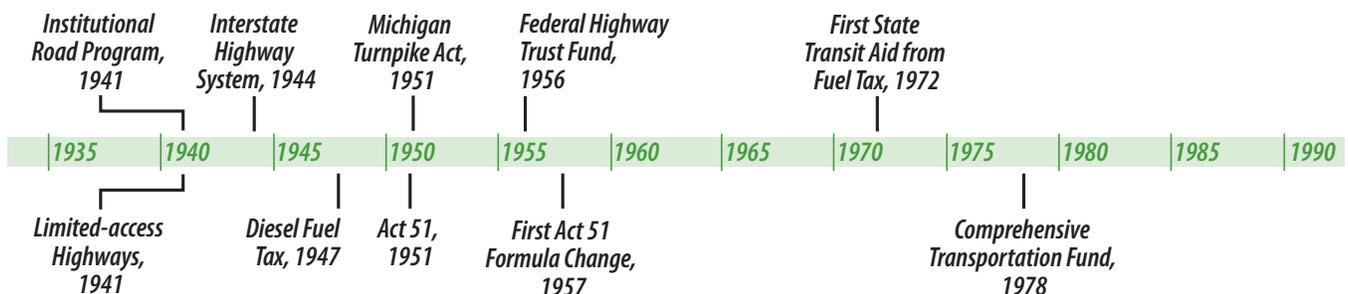
A fourth distribution from the Michigan Transportation Fund was begun in 1978 when Act 51 was amended to provide state funding to public transportation, and to match the growing amount of federal aid available for transit.

The state trunkline share of the MTF was reduced from 44.5 percent to 38.4, reflecting the reduced need for expenditures as Interstate construction was completed. Smaller reductions were made to the county and city and village shares. The new Comprehensive Transportation Fund was initially awarded 8.3 percent of the MTF. In 1983, the CTF share was increased to its Constitutional maximum of 10 percent.

The state Constitution was changed to allow road-user fees to be used for purposes other than roads. A limit of 10 percent was imposed on the amount usable for public transportation.

The Federal Highway Trust Fund was divided into a Highway Account and a Mass Transit Account.

General Fund appropriations to transit were replaced by 4.6 percent of sales tax revenue from auto-related retailers.



## State Transportation Commission and Director, 1978

The position of the elected Highway Commissioner was replaced by the appointed State Transportation Commission in another constitutional amendment. The Commission has constitutional power to establish policy for MDOT, to be carried out by the appointed Director.

## Transportation Economic Development Fund, 1982

The Transportation Economic Development Fund (TEDF) emulated programs in other states that awarded funds for “economic development” projects. It created three new sub-formulas and two grant programs that award roughly \$40 million/year, largely to local road agencies.

## 1997 Fuel-tax Increase, 4 cents Sub-formula

Simultaneous with increases in the gasoline and Diesel-fuel taxes to the 2010 amounts of 18.7 and 15 cents, two more sub-formulas were enacted that awarded the equivalent of 4 cents gasoline-tax revenue to the STF and the three-way road-agency formula. This appropriation is made before the CTF appropriation, so it has the effect of reducing transit spending to about 8.8 percent of road-user fees.

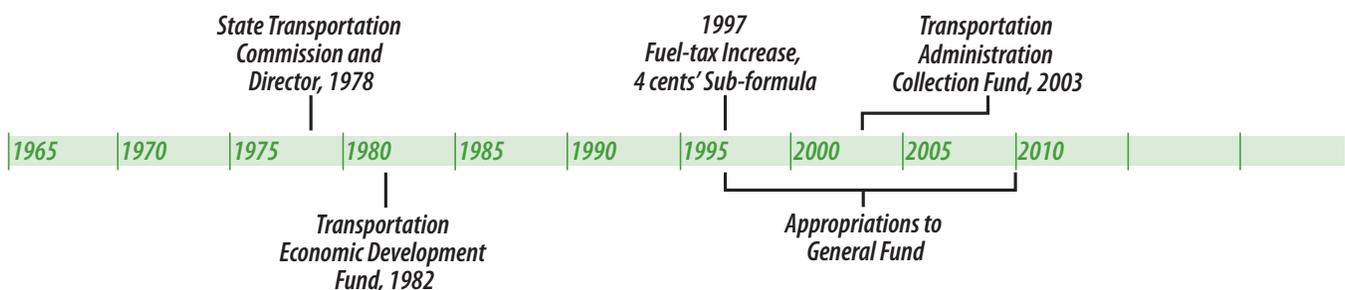
In 2004, the one cent gasoline-tax revenue flowing to the STF was reduced to half a cent, and the other half cent revenue awarded to the Local Bridge Program.

## Appropriations to General Fund

In most years since 1997, various amounts of non-dedicated transportation revenue have been appropriated to the General Fund. This includes sales-tax revenue from the CTF, and driver-license fees from the TEDF. (Constitutionally-dedicated road-user fees cannot be appropriated except to transportation.)

## Transportation Administration Collection Fund, 2003

Before 2003, the cost of administering the Secretary of State’s license-plate program and the cost of collecting fuel taxes by the Department of Treasury were appropriated from the STF in “interdepartmental grants” in the amount requested by those agencies. Since 2003, the size of this transfer is limited to \$20,000,000/year, and roughly \$53 million/year is deducted directly from vehicle registration taxes at \$5.75 per car. Any shortfall is covered from the General Fund. Another \$2.25 per car is appropriated to the State Police.



## OVERVIEW OF MICHIGAN'S FEDERAL TRANSPORTATION FUNDING

State revenue appropriated by Act 51 provides about two-thirds of the total revenue appropriated by the Legislature for transportation in Michigan. The remainder is roughly a billion dollars a year of federal aid.

This report is devoted mainly to the formula for dividing state funds and will not cover federal aid in detail, except to the extent that it is apportioned among Michigan agencies by state law, as the uses of federal aid are fixed in federal law. Here is a summary of the peculiar characteristics of federal aid.

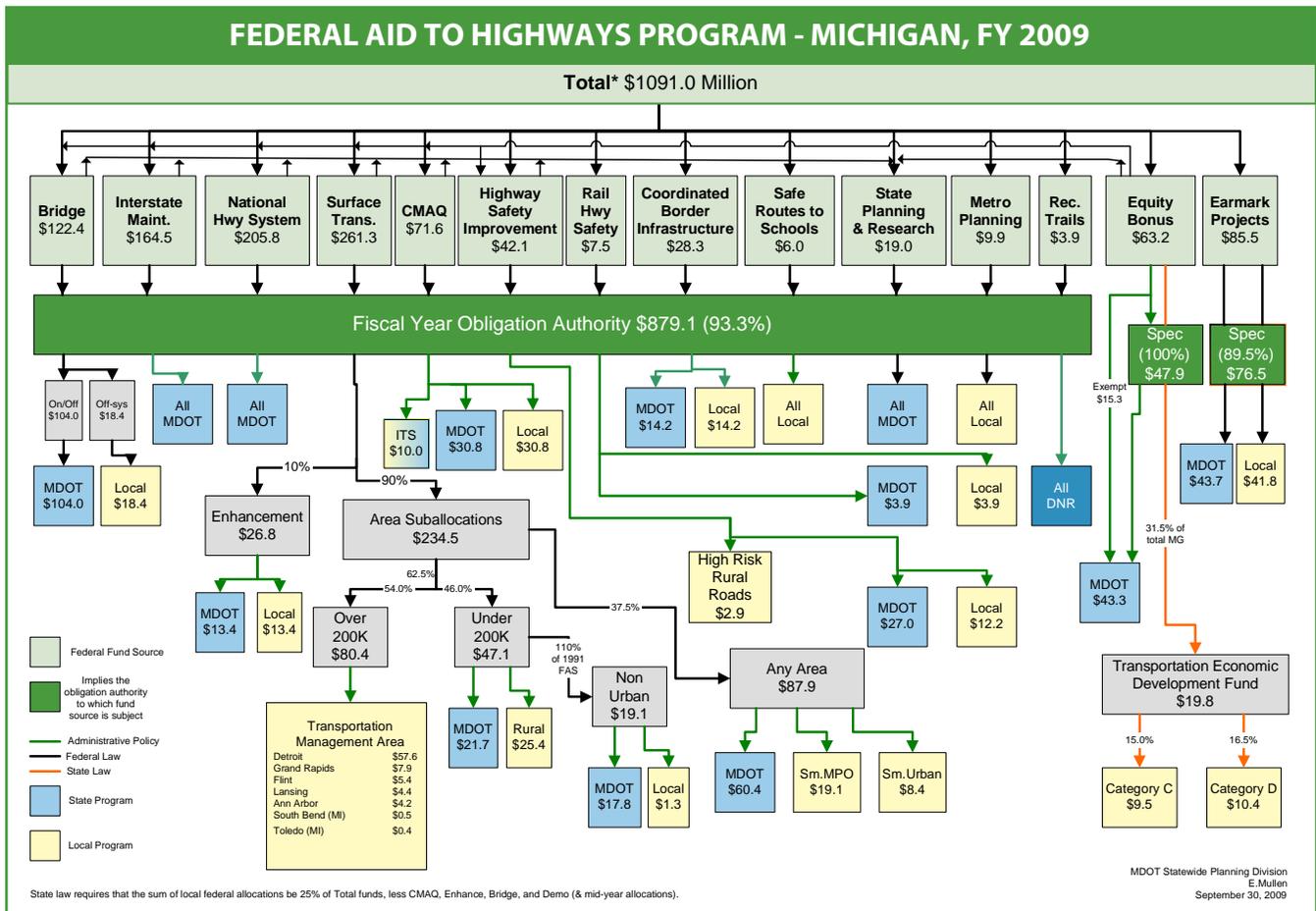
### Federal-aid Highway Basics

The federal-aid highway program currently consists of over 60 separate and distinct programs. However, only 13 of these programs provide funding to states by formula (see Figure 4.1 A). Each of these

13 programs has its own formula based on its own factors, which determines Michigan's share of any given federal road or bridge program. The formulas apportion a certain amount of aid each year, and it remains available for 4 years.

Federal aid is not cash. What the formulas distribute are called apportionments, and apportionments are totals of aid that the states are allowed to use in each program category. However, the totals of apportionments do not equal the total of federal aid that is available to Michigan. The usable total is less, and that is governed by another amount, called obligation authority. In 2009, the obligation limit equaled 93.3 percent of apportionments. Obligation authority is metered out annually by Congress as part of the federal budget process. Actual cash is distributed on a reimbursement basis, as projects are completed, and federal aid is generally only allowed to cover 80 percent of project costs.

Figure 4.1 A



## Earmarks

Some highway federal aid is appropriated by Congressional earmarks for particular programs or projects. These earmarks usually come at the expense of Michigan's share of the Equity Bonus program, and all other programs. When a member of Congress "wins" an earmark for a highway or bridge project in his or her district, in most cases it does not increase the amount of federal aid for Michigan; it only restricts a portion of Michigan's federal aid to use on the earmarked project or program.

This is not the case for transit, however, where a sizable portion of Michigan's federal transit funding comes from transit earmarks and does not impact other federal transit funding allocation.

## Federal-aid and Act 51

The current statutory Act 51 formula for distribution of federal revenue – known as the "75/25 split" – appears to be much simpler to understand and follow than the formulae for distributing state revenue. However, there are a number of important considerations and constraints that greatly complicate the operation of the relatively simple formula. First, there are over 60 transportation programs currently authorized in federal law. Many of these programs provide funding to states through either a statutory formula or through a competitive process. Each program has its own unique set of eligibilities and requirements. For example, federal law limits investment of federal Congestion Mitigation and Air Quality funds to only areas that are classified as non-attainment or maintenance for certain air pollutants. In Michigan, 25 of our 83 counties meet this eligibility criterion, which limits the choice of locations for investing these funds.

Second, the federal-aid highway program is organized around road usage, referred to as functional classification, and location (urban or rural), rather than by road jurisdiction. Some federal highway programs provide funds that can only be invested in roads of a certain functional classification. A good example of this is a federal highway program called the National Highway System. In fiscal year 2009, Michigan received \$205.8 million for this program, which can only be invested in the Interstate System and other designated urban and rural principal arterial roads. As a result, only 4,764 miles of Michigan's

119,935 miles of public roads are eligible for these funds, and MDOT has jurisdiction over 4,473 of these miles. Federal highway funds can generally only be invested in projects on the Interstate System, other expressways, arterials, and collectors. As a result, Michigan's 79,296 miles of local road are not eligible for federal aid under federal law.

Third, Congress enacts legislation to re-authorize the federal-aid highway program every 4-8 years. Each new authorization bill typically includes a wide range of structural changes to the federal program through the creation of new programs or eligibilities, or through the shifting of funding between programs to align with the shifting priorities of Congress. Changes to the federal program often complicate the operation of the requirements of Act 51 and its application to federal funds.

Act 51 provides some of the flexibility necessary to properly allocate federal revenue given the constraints mentioned above. As required by state statute, each year MDOT determines the amount of federal aid which must be split between local agencies and the state, and then allocates it accordingly. The federal aid which is subject to the split is allocated 25 percent to local agency programs and 75 percent to state trunkline highways. Some federal-aid programs are not subject to the 75/25 requirement. These include:

- Congestion Mitigation Air Quality (CMAQ)
- Transportation Enhancements
- Funds earmarked by Congress for specific projects
- Funds awarded competitively by the US DOT
- Highway Bridge Program

Some local funding allocations are prescribed by federal or state law. The total funding in these categories is subtracted from the 25 percent, and the remainder is distributed proportionately to the remaining applicable local programs, based on factors such as county area, census populations, and Act 51 certified mileage. Table 4.1A illustrates these allocations based on 2009 funding.

### Federal-aid Transit Programs

There are eight annual federal programs through which transit funds are apportioned to Michigan. The size of the programs range from about \$650,000 a year to about \$82 million a year. In FY 2009, there was \$158.9 million in federal aid apportioned to Michigan. The method for distribution differs from program to program. Some funds are distributed by formula, others are earmarks designated by Congress, and still others are awarded based on a competitive grant process. Unlike highway earmarks, transit earmarks are desirable, as they do not come at the expense of other Michigan recipients. Some federal funds are apportioned to the State, but most are apportioned directly to urban transit providers. For those funds that are apportioned directly to the State, there are no state laws or state formulas that dictate how federal transit funds are distributed or allocated, however, there is a State or MDOT role in distribution for some of the programs. For example, for non-urban systems, MDOT provides assistance as a percentage of each agency's eligible operating expenses. Also, state law requires the Comprehensive Transportation Fund (CTF) to match federal transit capital grants awarded to local agencies.

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*“The formula” is the result of about 10 major standing appropriations from the MTF, and some other adjustments and restrictions.*

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### DESCRIPTION OF CURRENT ACT 51 FORMULA

The Michigan Transportation Fund (MTF) as created in Public Act 51 of 1951, as amended (Act 51), is the distribution fund for transportation revenues. Act 51 mandates how these funds are distributed and spent. The two main sources of state funding are vehicle registration taxes and motor fuel taxes. Act 51 directs the distribution of MTF funds to other state transportation funds to special program accounts and local units of government. The distribution formulas allocate restricted transportation revenue between highway programs and public transit programs. Act 51 also allocates highway funds between

MDOT and local road agencies. The allocation among state, county and local roads and bridges is the most commonly referred to “formula” within Act 51. This formula is often described as a 3-way division among the three classes of road agencies in these proportions:

State Trunkline Fund	39.1%
County road commissions	39.1%
Cities and villages	21.8%

However, this formula distribution is made after a number of statutory deductions are made, including distributions to the Recreation Fund, Local Program, debt service, critical state bridge programs, grants to other departments for transportation-related functions, the Transportation Economic Development Fund and other statutory grants. The Comprehensive Transportation Fund (CTF) receives 10 percent of the MTF, but only after other statutory deductions are made.

Taking into consideration all of the statutory distributions called for in Act 51, the effective distribution is:

EFFECTIVE MICHIGAN TRANSPORTATION FUND DISTRIBUTION	
Roads and Bridges	
State Trunkline Fund	35.8%
County road commissions	35.3%
Cities and villages	20.0%
Public Transportation	
Comprehensive Transportation Fund	8.8%

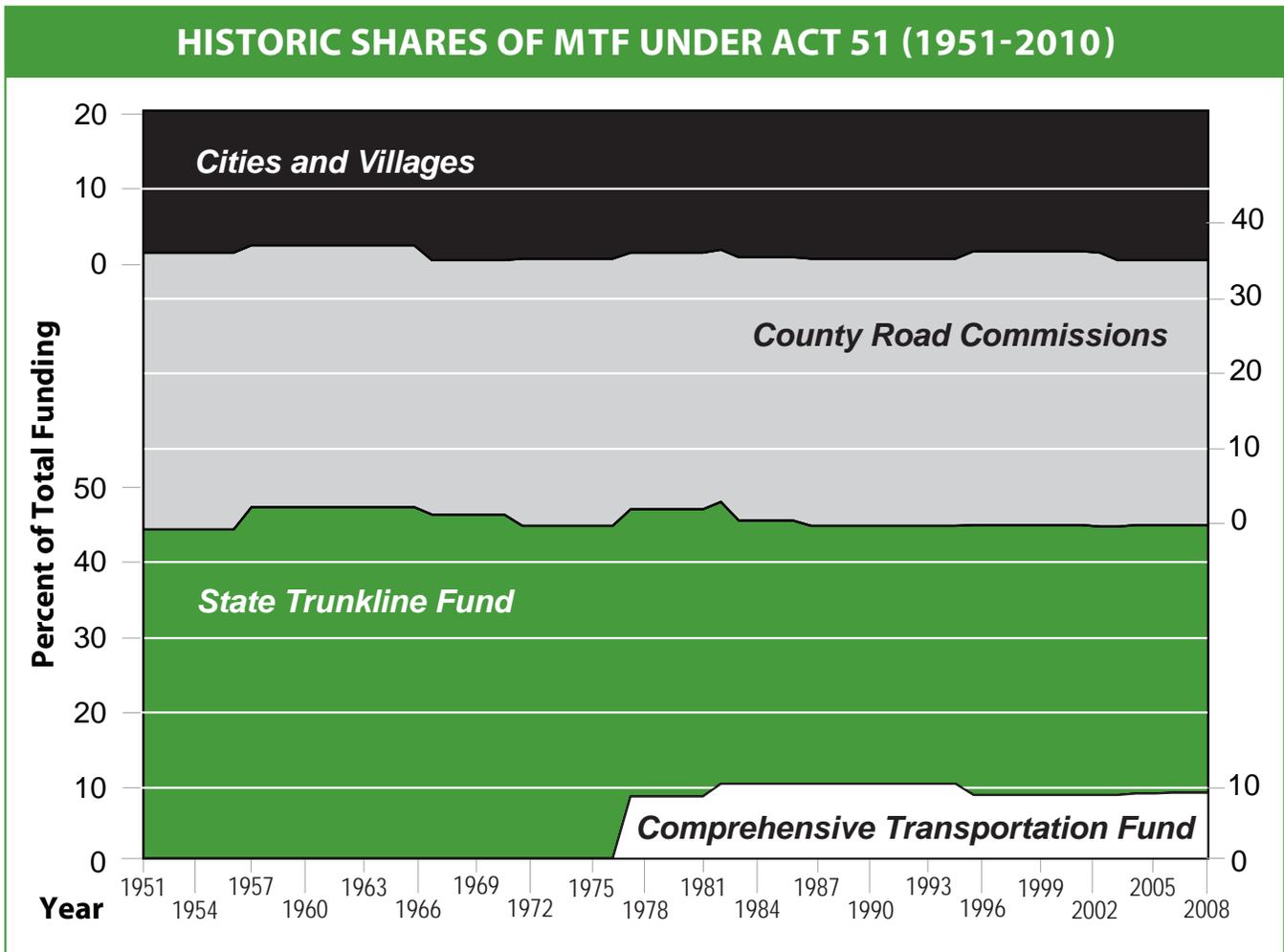
The exact outcome changes slightly each year, because awards from grant programs are usable by all three classes of road agencies.

New revenue added to the MTF will be distributed in these percentages unless appropriated otherwise. However, existing revenue distribution is slightly different, because of past distribution adjustments still in the law. These are described later in this section.





Figure 4.2 B



As noted in the previous “Brief History of Michigan Transportation Finance” section, Act 51 has been changed a number of times over the years. Each change, with the exception of creating the Comprehensive Transportation Fund, has made barely perceptible shifts in shares of funding (see Figure 4.2 B). So while there have been many changes, those changes have not fundamentally changed the distribution of transportation funding in the state.

#### Act 51 Formula Details

As noted above, the 3-way distribution of road and bridge funds among state, county and local roads is most commonly referred to in Act 51 as “the formula.” In actuality, there is no single formula. Rather, “the formula” is the result of about 10 major standing ap-

propriations from the MTF, and some other adjustments and restrictions. Here is a brief description of the items on the formula flow chart.

**Comprehensive Transportation Fund** — The CTF receives up to 10 percent of the MTF, except that an amount equal to 4 cents gasoline tax revenue plus \$46,000,000 is distributed before calculating the 10 percent (see Figure 4.2 A). This reduces the effective CTF share to about 8.8 percent of the MTF. Roughly \$160 million/year is available for public transportation and intercity passenger and freight programs. This provides about 70 percent of CTF revenue, the rest being auto-related sales tax. Within the CTF portion of Act 51 there are additional statutory formula and distribution requirements which are described later in this report.

**Three cents' 3-way distribution –**

An amount equal to 3 cents' gasoline-tax revenue is deducted before the CTF share is calculated. It is divided among road agencies according to the 3-way roads formula: 39.1 – 39.1 – 21.8 percent to the STF, counties, and cities and villages.

**One-cent's bridge distribution –**

An amount equal to 1 cent's gasoline-tax revenue is divided equally between the STF (restricted to trunkline bridges) and the Local Bridge Program.

**\$43,000,000 for STF –** This amount is appropriated each year to the STF, restricted to debt service. (This is not the total of state trunkline debt service.)

**Rail Grade Crossing Program –**

This program makes \$3,000,000/year available for safety improvements at railroad crossings.

The following appropriations are made after the share for the CTF is deducted:

**Local Road Program –** This appropriation originated when the point of gasoline-tax collection was changed from retailers to fuel distributors. It was thought that this yielded an additional \$33 million a year, but the new revenue was appropriated only to counties and cities and villages, not state trunklines.

**Local Bridge Program –** Three appropriations fund this grant program: \$5,000,000/year, \$3,000,000 for bridge debt service, and an amount equal to half a cent's gasoline-tax revenue. In sum, they provide \$30 million a year which is expended by Regional Bridge Councils for bridges on local roads, according to the priorities set among local agencies.

**WHICH FORMULA ARE WE TALKING ABOUT?**

**The "Act 51 Formula" –** The total of appropriations in Act 51 that together allocate the Michigan Transportation Fund among four programs: the Comprehensive Transportation Fund (for transit), the State Trunkline Fund (for state highways), county roads, and city and village streets. This formula is show in Figure 4.2 A.

**County and City and Village Formulas –** The shares of the MTF for county road commissions and city and village streets are further divided among the counties and cities and villages by two other formulae, one for counties and one for cities and villages. These formulas are illustrated in figures 4.2 C and 4.2 D, respectively.

**The Transit Formula –** The formula in Act 51 for distribution of the Comprehensive Transportation Fund for "local bus (transit) operating assistance" to eligible transit agencies. In addition to this transit formula, there are a number of statutory distribution requirements in Act 51 that guide use of the CTF. The distribution requirements for the CTF are shown in Figure 4.2 E.

### Transportation Economic Development Fund —

The TEDF consists of two grant programs and three sub-formulas:

- Category “A” awards \$12,567,100/year in grants to county roads, city streets, or state highways for projects associated with new employment in basic industries.
- Category “C” is a formula delivering \$4,533,600/year to the 5 largest counties for projects remedying congestion. (There is no Category “B.”)
- Category “D” distributes \$4,533,600/year to the 78 smallest counties and cities under 5,000 population. These funds are expended according to priorities set by multi-county Rural Task Forces, since the amounts appropriated to individual counties and cities are too small to be of use to the recipients until aggregated into larger projects.
- Category “E” delivers \$5,040,000 to increase the Act 51 distribution to 43 northern Michigan counties with more than a certain percentage of federal forest land.
- Category “F” awards \$2,500,000’ in grants to cities and villages over 5,000 population in the 78 smallest counties.

3-way roads distribution – this 39.1 (MDOT) – 39.1 (counties) – 21.8 (cities/villages) division is the descendent of the original 44 – 37 – 19 formula of 1951, and it still distributes the majority of the MTF. After all other appropriations have been made, this central part of the formula distributes about \$1.4 billion/year.

### Restrictions

Not less than 90 percent of the amounts distributed to the STF, counties, and cities and villages must be used for road preservation (as opposed to new construction).

Of the amounts distributed to the STF, counties, and cities and villages, an average of one percent must be spent on projects benefiting non-motorized travel (sidewalks in cities, non-motorized paths, and bike paths).

### Transferred Mileage

Before distributions are made under the 3-way formula, amounts are calculated to account for road miles transferred among state highways, county roads, and city and village streets. These “takeovers and turnbacks” of state highways and local roads must be accompanied by a transfer of funds lest agencies be penalized by assuming responsibility for road mileage that the formula would not compensate them for (because the percentages do not change when system size changes). Each year the “revenue worth per mile” of each class of road is calculated, and individual counties, cities and villages, or MDOT are awarded this amount for each mile that has changed hands since 1992.

### County Road Formula

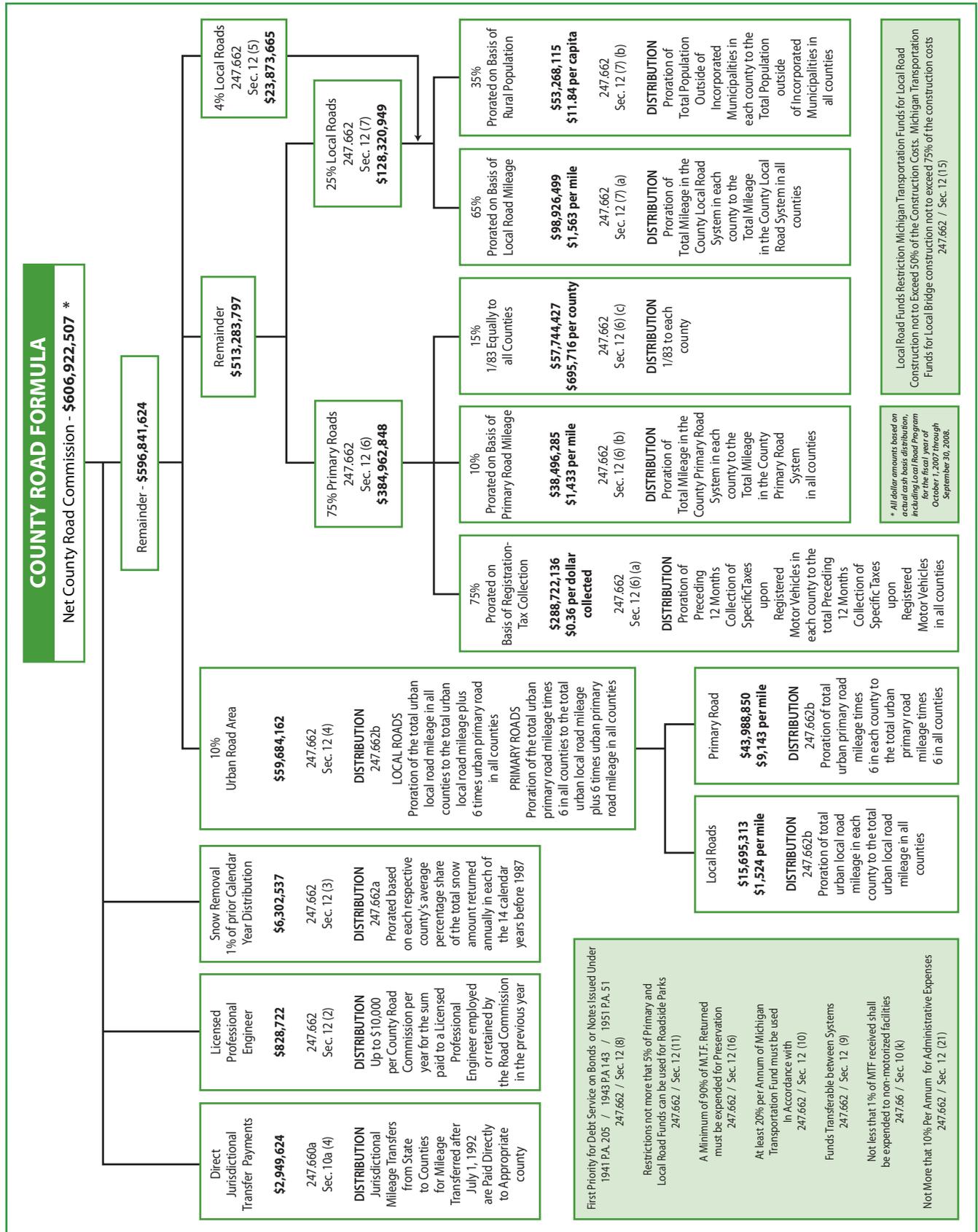
Figure 4.2 C shows the factors used in appropriating Act 51 distributions among Michigan’s 83 county road commissions (or other agencies in charter counties not having a road commission).

The formula is a series of nested percentages based on 5 factors. The formula is divided among urban and other areas, and between primary and local roads.

The relative weight of the 5 factors can be understood by multiplying the various percentages to see what weight each factor has:

COUNTY ROAD FORMULA FACTOR WEIGHTS	
Value of resident vehicles	47.9%
Centerline mileage	32.7%
1/83 equal share	9.6%
Per capita	8.8%
Snowfall	0.7%
Mileage transferred	0.2%

Figure 4.2 C



The dominant factor in the county distribution is the value of vehicle registrations “resident” in each county. For the most part this means automobiles and light trucks registered under the ad valorem registration tax, which is based on the list price of each vehicle. It also includes weight-based registration taxes on trucks above 10,000 lbs., if the trucks are registered at an address in a county. Registration taxes on commercial vehicles not associated with a Michigan address are distributed in proportion to the resident vehicles.

Most of the rest of the county formula is accounted for by centerline mileage (i.e. route miles). Not all miles are equally valuable. Primary-road miles are accorded roughly three quarters of the weighting and there is a separate sub-formula for miles within the urban area.

WEIGHTING OF PRIMARY ROADS IN COUNTY FORMULA	
Primary roads	71.9%
Local roads	28.1%

**Factors NOT Included**

Other variables could conceivably be used to apportion county-road funds: federal functional classification, auto- and truck-miles traveled, number of bridges, fuel used, or other measures. These alternatives will be described in later sections of the report.

**Restrictions**

Not more than 10 percent of distributions may be used for administrative expenditures. As with all Act 51 road distributions, at least 90 percent must be used for preservation, and an average of one percent must be spent for non-motorized facilities.

Funds distributed on the basis of primary-road mileage must be used on the primary-road system, except that up to 30 percent of each year’s primary-road funds may be transferred to the local system, and 15 percent of local-road funds may be transferred to the primary system.

**City and Village Road Formula**

Figure 4.2 D shows the formula used to divide the city and village share among Michigan’s 533 cities and villages for their streets.

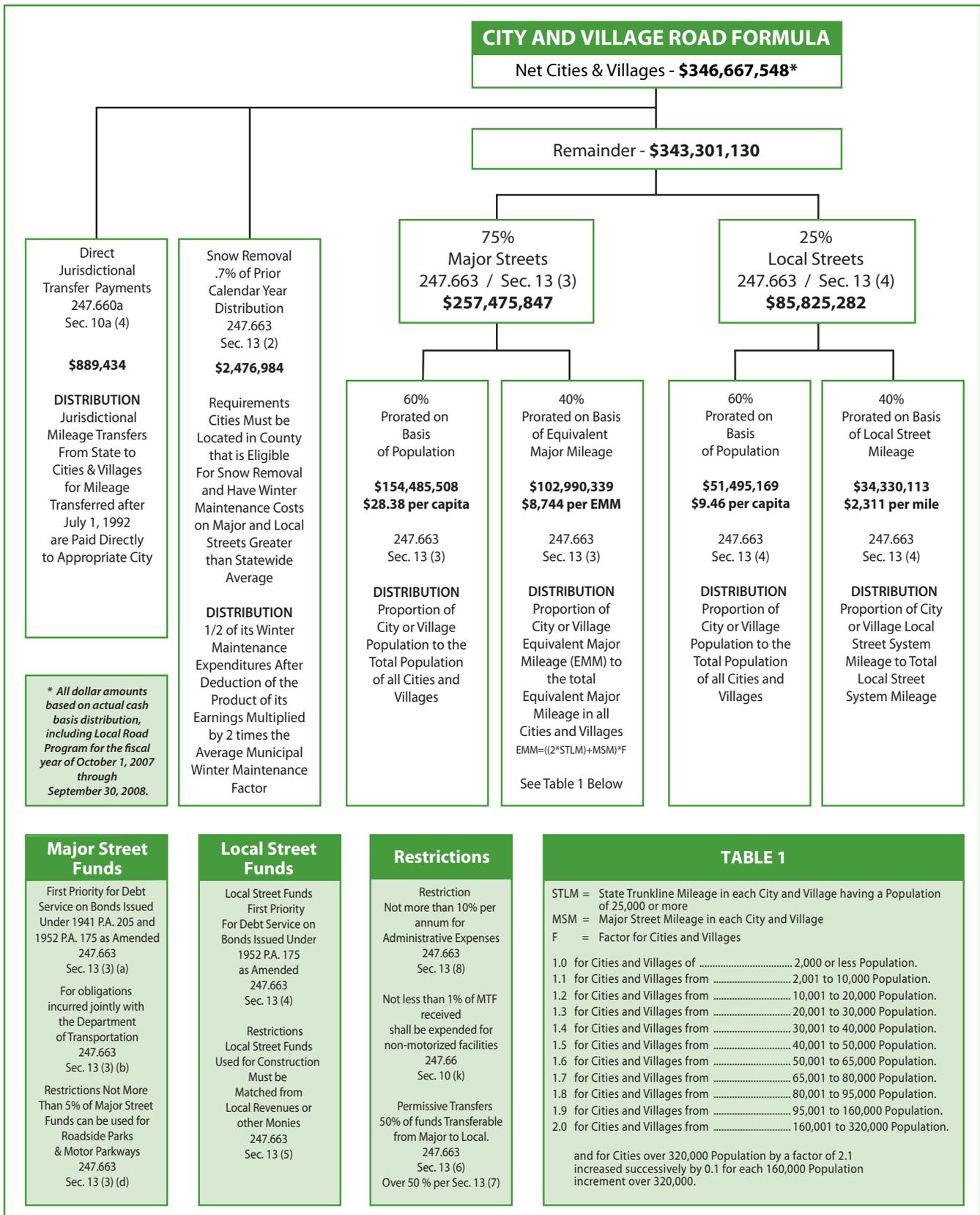
This is a simpler formula than the county road formula, dividing the share 75 percent for major streets and 25 percent for local streets, and then apportioning the distribution among cities and villages in proportion to population (60 percent) and street mileage (40 percent), except that mileage of state trunkline in each city is multiplied by two and included in the major-street mileage, and major-street mileage is multiplied by a factor that increases with population. Also, 0.7 percent is set aside for snow removal in certain eligible counties. Population accounts for over 60 percent of each city and village’s distribution from the city and village share.

**Restrictions**

Several restrictions to city and village Act 51 funding should be noted:

- Local-street funds used for construction of new streets must be matched by an equal amount from local sources.
- Not more than 50 percent of major-street funds may be transferred to use on local streets unless an asset management plan is in effect, in which case unlimited transfers are permitted.
- Administrative expenditures are restricted to 10 percent.
- 90 percent must be used for preservation.

Figure 4.2 D



## Public Transportation

The Comprehensive Transportation Fund (CTF) provides for public transportation including financial assistance to local transit operators through a number of programs defined in Act 51 or MDOT's annual

appropriation. The CTF receives funds from several sources, with the Michigan Transportation Fund (MTF) providing roughly 70 percent (see Figure 4.2 E). Article IX, Section 9 of the Michigan Constitution allows up to 10 percent of vehicle fuel and regis-

Figure 4.2 E

