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SOUTHEAST MICHIGAN AGGREGATE MARKET STUDY

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EXECUTIVE SUMMARY

This market study evaluates the present and future supply and demand for construction aggregates in Southeast Michigan, including the greater Metropolitan Detroit area.

The Southeast Michigan market draws on several sources of aggregate located in different areas of Michigan. These sources include sand and gravel from west and northwest of Detroit, slag produced in Dearborn and Ecorse, dock limestone from the upper and lower peninsulas and locally quarried limestone in Monroe County.

Currently, the Southeast Michigan construction aggregate reserve base contains approximately 231 million tons of permitted sand and gravel reserves and 140 million tons of limestone reserves.
The Southeast Michigan construction aggregate market covered by this study consumed approximately 22.6 million tons of aggregate from a variety of sources including sand, gravel, limestone, and slag in 2014.

Similarly, in the 9 county study area, approximately 30 million tons of construction aggregates (sand, gravel, limestone and slag) will be produced or imported into the market in 2015. This quantity includes an estimated 14.3 million tons of sand and gravel.

In addition to the need for construction aggregates to serve the region, the resources also serve significant internal need and demand from affiliates of AAOM and Levy. As set forth in the Community Impact Statement, AAOM estimates that internal need may range from 1,500,000 tons to 2,000,000 tons per year (subject to market conditions).

Based upon current aggregate consumption rates, by the end of the year 2024, the depletion of permitted and existing mines will result in a reduction in industry wide annual aggregate production capacity for the 9 county study area of approximately 5.6 million tons, or 39% of current capacity.

In addition, the demand for construction aggregates is projected to increase in future years for multiple reasons, including population growth, and increased federal and state road funding.

Several bi-partisan studies reveal that Michigan roads continue to fall into disrepair and that an additional $1.2 billion in annual spending is necessary to bring 90% of the roads to a “good” condition. This amount is for State trunk-lines and does little for local roads which will require additional funding as well. The recent passage of a comprehensive road funding package by the State of Michigan will generate $600 million a year in incremental funding for roads and bridges in 2017, growing to $1.2 billion per year in 2021. This represents a doubling in MDOT road projects and a corresponding doubling of demand for quality aggregates to support those projects.

Similarly, the Federal Government continues to work towards a long term source of funding for the highway trust fund. Recently, the president sent a $302 billion, 4-year surface transportation reauthorization proposal to Congress to address the issue. While the details of a comprehensive funding package are uncertain, it is safe to assume the funding levels will not drop below current levels in the next 3-5 years and are likely to increase.

Population projections indicate a modest growth rate of 0.8% for southeastern Michigan through the next 25 years (2040). The projected growth will be in all areas other than Wayne County. Increased population translates into increased demand for new housing, roads and related infrastructure. There is also a great need for infrastructure repair and renewal as Wayne County re-emerges as a viable entity.

Oakland County is the second most populated county in Southeast Michigan and is projected to grow approximately 3.7 percent over the next 30 years. Livingston County, although not heavily populated, is projected to grow approximately 18.4 percent over the next 30 years. As suburban growth continues, both counties will experience a greater demand for construction aggregate.

The additional demand for aggregate, coupled with the depletion of existing reserves, will necessitate opening new aggregate operations in Southeast Michigan. Slag production is unlikely to increase substantially because it is tied to local steel production. Domestic steel producers compete globally, and it is highly improbable that the metro area will see an expansion or addition of new steel production, given high relative labor costs and energy costs. Limestone imports should remain relatively constant, although they will be less cost competitive because of increased transportation costs and dock utilization charges. Therefore, the burden of replenishing reserves will fall primarily on local limestone quarries in the south and sand and gravel resources north and west of Detroit. Permitting new limestone and sand and gravel production facilities and extending permits of existing operations will allow the local capacity to cost effectively meet the increased aggregate demand in the Southeast Michigan market area.

Urban and suburban growth combined with zoning and regulatory controls are displacing aggregate production in the greater Detroit area. It is difficult to open new aggregate operations in areas close to the population centers, which have the highest demand for aggregate. Construction aggregate is a low unit value commodity; transportation costs can easily double or triple the cost of aggregate if transported a long distance. The net result is higher costs to the consumers and taxpayers to offset the increased cost of transportation. The future demands of aggregate will be greatest near the growing communities in the rural and suburban regions surrounding Detroit. By extracting sand and gravel resources that are closest to a market, the general public will experience lower aggregate price inflation versus importing substitute deposits that are further away. These cost savings include lower overall aggregate prices (including transportation) and less road wear caused by decreased truck traffic.

The proposed mining site contains an estimated 30 million tons of construction aggregate reserves that will provide a greatly needed infusion of additional reserves into southeast Michigan.

1.0 INTRODUCTION

This report presents the results of an aggregate market study for Southeast Michigan including the counties of Wayne, Oakland, Livingston, Washtenaw, Monroe, Genesee, St Clair, Lapeer and Macomb.

The purpose of this study was to evaluate the supply and demand for construction aggregate in the 9 county market area and evaluate related public impacts. Emphasis was placed on the inter-relationships between various types and origins of aggregates, transportation of aggregates to the market and most common usage of each type of aggregate.

The study included a review of information on the aggregate industry, competitive data supplied by personnel from Edw. C. Levy Co., mining data from the United States Geological Survey (USGS) Mineral Survey, population data from Southeastern Michigan Council of Governments (SEMCOG), sales data

from "*Engineering News - Record" (ENR),* forecasted aggregate demand from FW Dodge/McGraw Hill and data gathered from both MDOT and industry trade journals.

2.0 SOUTHEAST MICHIGAN CONSTRUCTION AGGREGATE RESOURCES

2.1 Construction Aggregate Types and Uses

Construction aggregate is a broad category of coarse particulate material used in construction, including sand, gravel, crushed stone, slag and recycled concrete aggregates. Construction aggregates are the most mined materials in the world. Construction aggregates are a component of composite materials such as concrete and asphalt. They are also used as base material under foundations, roads, and railroads.

Listed below are common types of construction aggregates and their typical construction applications.

Sand & Gravel

- Natural sand (2NS) from sand and gravel deposits is the primary fine aggregate combined with portland cement to produce concrete. This washed sand is sourced from sand and gravel operations in Oakland, Lapeer, Washtenaw and Livingston Counties. It is the single highest volume natural aggregate utilized in Southeast Michigan.
- 6A size (1 ¼" X ½") gravel is used as the coarse aggregate component of concrete in applications not exposed to the weather, such as footings and basement walls. 6A gravel is also used extensively in septic fields.
- Pea Pebble size (3/8") gravel, also known as "34R," is used as the aggregate in the production of concrete paver bricks and as pipe bedding and drainage course material.
- Dense graded "20 series" includes a variety of materials used in commercial asphalt and for gravel roads, shoulders and base.
- Crushed stone, also known as 'asphalt splits," has excellent frictional properties and is utilized to meet demanding MDOT specifications on high volume roads.

Limestone

- Locally mined 6A size limestone is used as the coarse aggregate component of concrete in applications that are exposed to the weather and are not limited by MDOT specifications.
- Base materials, including 4G, 21AA, 22A and 23A are used to maintain gravel roads and beneath concrete and asphalt pavements.
- Limestone is also used as an asphalt aggregate when specifications allow its use.

Dock Limestone

- Limestone from northern Michigan and throughout the Great Lakes (See Figure 1) is transported to docks in the area. Limestone's low absorption and good freeze thaw characteristics make it well-suited to meet MDOT concrete specifications for high volume highways. The largest portion of this material, 6A, is used as the coarse aggregate in concrete that is exposed to weather. Other limestone materials brought to the docks include base materials, asphalt materials, and materials for concrete block production.

Blast Furnace Slag

- Blast furnace slag produced to the 6A size is a premium coarse aggregate in concrete, but it is limited in supply by the amount of iron produced in Detroit.
- Other blast furnace slag applications include base material, asphalt material, chip seal, landscape, and block production, all in limited supply.

Steel Furnace Slag

- Steel furnace slag is used extensively in the production of asphalt. Its superior frictional properties and ability to resist rutting make it a valuable aggregate, but it is limited in supply by the amount of steel produced in Detroit.
- Other steel furnace slag applications include road shoulders, un-constrained fill material and as a component in the production of cement. Steel furnace slag has a high lime content and it has recently been marketed as a fertilizer as well.

Crushed Concrete

- Base materials such as 3"X 1," 4G, 21AA, 22A and 23A are the products produced out of broken concrete. These recycled aggregates are used as base beneath concrete and asphalt in both MDOT and commercial applications.

2.2 Construction Aggregate Specifications

Specifications for aggregates used in Michigan for construction purposes have been established by the Michigan Department of Transportation (MDOT) using the American Society for Testing and Materials (ASTM) and American Association of State Highway and Transportation Officials (AASHTO) guidelines.

Aggregates in Michigan are normally described as either natural aggregates or slag aggregates. Natural aggregates are obtained from stone quarries, gravel deposits, or waste mine rock. Slag aggregates are co-products formed during the manufacture of iron and steel.

According to MDOT, fine aggregates for Portland cement concrete and mortar shall be free from organic impurities, clay lumps, soft or flaky materials, and shall be uniformly graded. Stone sand shall be manufactured from stone meeting all the grading requirements of coarse aggregate 6A as shown in MDOT specification, Table 1a. Coarse aggregates consist of gravel, stone or slag and must pass the physical specifications presented in Table 1b. Coarse aggregates are used for Portland cement and bituminous concretes, bituminous surface treatment and dense graded aggregate.
Granular materials for fill and sub-base consist of sand, gravel, crushed stone, foundry sand, blast furnace slag, or any combination of the five materials. Table 1c lists the grading requirements for granular materials.

Grading requirements for fine aggregates are listed in Table 1d.

Grading requirements for the Composition of Bituminous Mixtures are listed in Table 2. MDOT provides specifications for final mix properties of Bituminous Mixes and not for component materials.

2.3 Construction Aggregate Sources

In the nine county study area, the primary sources of construction aggregates are as follows.

Limestone

Limestone is mined in both Wayne and Monroe County (see Figure 1). The deposits consist of Silurian and Devonian sedimentary rock that dips gently to the northwest. The intervals mined in Monroe and Wayne Counties are mainly dolomites and limestones. The aggregate quality varies between the different formations, but generally is of acceptable quality for use in concrete, asphalt and base materials. Monroe County is a prime location for aggregate rock quarries because of the thin overburden and good rock quality.

Limestone is also quarried from the northern Lower Peninsula of Michigan in Rogers City and Presque Isle and the Upper Peninsula in Cedarville and Port Inland (approximately 130 to 200 shipping miles from southern Saginaw Bay and approximately 215 to 300 shipping miles from Detroit). The crushed limestone aggregate is transported by ship to Bay City, Saginaw, Port Huron, Marine City and Detroit. The aggregate is of excellent quality with little deleterious material and is used in both portland cement concrete and asphalt. Crushed limestone mixed with natural sand is used in the ready mix concrete industry for most public road construction.

Sand and Gravel

Glacial deposits cover most of the state of Michigan (see Figure 3). Materials laid down by the glaciers range from poorly sorted to well sorted. Direct deposition by the ice resulted in poorly sorted deposits composed of clay, silt, sand, gravel, cobbles and boulders. Till is the dominant form of direct deposition by ice, commonly found as lodgment and ablation tills. These deposits are not mined for aggregate because the clay adheres to the sand and gravel and cannot be economically removed.

Clean, sorted sand and gravel deposits in Michigan are the result of water laid deposition by glacial melt water. The material is usually low in silt and clay sized fractions, thus making it ideal for aggregate mining. The sand and gravel can be found in glacial landforms such as river channels, outwash plains, eskers and kames. The sand and gravel found in these deposits are typically of good quality for use in both unexposed portland cement and bituminous concretes.

Durable exterior concrete requires the removal, from the gravel, of deleterious material such as weathered sandstone and chert. These deleterious stones are removed by mechanical means in a Vertical Shaft Impact (VSI) crusher. The lightweight / softer material is pulverized and removed by a screening process, while the good quality stones are separated and stockpiled separately. While this process produces acceptable material there is a limited amount available as many deposits have significantly more sand than gravel. This limited availability has forced many ready-mix producers to use limestone exclusively in exterior applications.

Slag

The aggregate industry in southeastern Michigan has renewable sources of aggregates to supplement the natural aggregate resources. The most common and widely used is slag, a co-product from the production of iron and steel. There are two primary types of slag produced in the study area: blast furnace slag and steel furnace slag. Blast furnace slag is used extensively as an aggregate in concrete, asphalt, and base. The slag is a co-product of the smelting of iron ore with coked coal and limestone.

Three types of blast furnace slag may be created: air-cooled slag, expanded slag, and granulated slag. Air-cooled slag is angular to sub-angular in texture and has a vesicular pitted surface. It provides an excellent bond with portland cement and high strength bituminous mixtures. Expanded slag is also angular to sub-angular in texture, but has a more pronounced vesicular structure. The bulk density is very low, in the range of 55 to 65 pounds per cubic foot, thus making expanded aggregate an excellent lightweight aggregate. Granulated slag is a glossy granular product with excellent hydraulic properties, allowing its use as a cement substitute.

Steel furnace slag is quite different from blast furnace slag. Molten Iron or scrap steel are charged with lime in either an open hearth, a basic oxygen furnace (BOF) or an electric arc furnace (EAF). The lime mixes with the impurities in the iron or scrap steel to form molten steel furnace slag. Steel furnace slag is similar in texture to air-cooled blast furnace slag, although it is much heavier due to higher iron content. The steel furnace slag also contains free lime resulting in a higher alkalinity of the product. These are characteristics that may result in expansion and cementation when steel furnace slag is placed in contact with moisture. Therefore, steel furnace slag is mainly used as an asphalt aggregate, fill material or base material in unconfined base applications.

In 2014, 1.1 million tons of blast furnace slag and approximately 0.9 million tons of steel furnace slag were produced in the market area. While slag is a renewable resource, its availability is directly related to the amount of iron and steel produced in the market study area. The economics of the worldwide steel industry dictates how much steel is produced in Michigan. Increased slag production is unlikely to occur because the global economics of steel production favor low labor and low energy cost nations.

Recycled Aggregates

Recycling of pavements, both concrete and asphalt, is common in Southeast Michigan. It is estimated that 3,000,000 tons of crushed concrete and 1,000,000 tons of RAP (recycled asphalt pavement) are processed each year.

Crushed concrete is used almost exclusively as an aggregate base under both concrete and asphalt. While acceptable in most base applications, it is known to deteriorate in excessively wet conditions, and can only be used in limited proportions to meet MDOT specifications.

RAP is used in the production of asphalt. RAP is crushed and introduced back into the asphalt plant with other aggregates and bituminous cement. RAP contains both aggregates and bituminous cement that combine with virgin aggregates and bituminous cement to produce new asphalt. The use of RAP reduces the need for new aggregates and bituminous cement.

2.4 Geologic Limitations of Construction Aggregate Resources

Sand and gravel are crucial resources to economic development activities, such as road building and concrete production. Construction of one mile of four-lane interstate highway requires approximately 85,000 tons of aggregate; the average six room house requires 90 tons.

Michigan is fortunate to have an abundance of sand and gravel well distributed throughout the state. As previously stated, much of the sand and gravel reserves exist as glacial deposits, left behind by glacial meltwater that carried away the clay and silt, leaving behind the heavier gravel and sand in deposits called "glacial outwash" or "ice-contact stratified drift." Most of the sand and gravel in the state is located in areas where the ice was melting rapidly and outwash was accumulating in constrained areas.

Some of the largest gravel operations in the world have been located in the interlobate area of Oakland and Livingston counties. However, many of these prime sources of sand and gravel have either been exhausted, covered by housing developments, or underlie prime farmland. Therefore, our once-abundant supply of sand and gravel is becoming more difficult to access.

2.5 Construction Aggregate Resource Availability

Currently, the Southeast Michigan area reserve base contains approximately 231 million tons of permitted sand and gravel reserves and 140 million tons of permitted limestone reserves (see Table 3).

In the 9 county study area, approximately 30 million tons of construction aggregates (sand, gravel, limestone and slag) will be produced or delivered to the market in 2015 (see Table 3). This quantity includes an estimated 14.3 million tons of sand and gravel. Locations of primary construction aggregate production facilities within the 9 county study area are illustrated in Figure 2.

For the reasons provided in subsequent sections, the demand for construction aggregates is projected to increase. To meet this increased demand, addition construction aggregates may be delivered to the market by increasing current production levels of existing operations, by increasing current levels of imports and/or by the start-up of new operations and many existing operations cannot increase production because limits on space, hours of operation or equipment capacity and many existing operations cannot increase production because of limits in space, hours of operation, and equipment capacity.

In the short term, it may be possible to increase existing aggregate industry capacity to meet growing market demands. However, an increase in existing plant capacities made possible through capital expenditure or bolstering of plant production rates becomes only a temporary solution to growing market demands since this measure inevitably reduces the life of any given mining operation.

Unless new operations are opened, annual production of sand and gravel will be reduced by approximately 5.6 million tons, or approximately 39% of production capacity, in 10 years because of depletion of developed sand and gravel reserves. (See Table 3). By increasing existing plant capacity alone, a shortage of competitively priced sand and gravel aggregate is likely to occur by 2024 unless new operations are opened or existing operations are expanded to replenish depleting supplies (See Figure 6).

As shown in Table 3, fourteen operations may be depleted of reserves within the next 10 years, amounting to the loss of approximately 5.6 million tons of annual construction aggregate production. All fourteen of these operations are producers of natural sand and gravel.

Local zoning laws and suburban growth are key factors in limiting access to sand and gravel reserves. Land use regulations continue to intensify in Southeast Michigan. The result of this increase is to force aggregate production farther away from the market. This is evident in Oakland County. Although a significant percentage of Oakland County's sand and gravel consumption is in the central portion of the county, suburban development and regulations have caused the loss of many valuable sand and gravel resources adjacent to this demand. In all probability, these resources are lost forever. Most of the remaining sand and gravel resources in the area occur near the outer perimeter of Oakland County and in the adjacent counties of Lapeer, Livingston, and Washtenaw. These locations are very important since they are near the projected growth areas in Oakland, Macomb, Livingston and Washtenaw counties. In addition, the high population districts in Wayne and Oakland counties can still be supplied by these reserves.

Currently, approximately 4.1 million tons of limestone aggregates are imported into the Southeast Michigan ports of Saginaw, Port Huron, Marine City and Detroit. Although imports could be increased to meet greater coarse and fine aggregate demands, population studies indicate that the migration of people is away from the urban areas of Detroit. The future demands for aggregate will be greatest near the growing communities in the rural and suburban regions. The cost of limestone and sand imported into Southeast Michigan would significantly increase because of longer haul distances from the ports to the growth areas in the suburbs. These costs are in addition to the extra costs associated with water shipping and dock handling.

Limestone that enters the market through docks in Saginaw carry a higher transportation cost because of relatively long distance of truck hauling routes. These imports are necessary to offset an increasing gravel shortage in the southeastern Michigan market area. The inability of sand and gravel deposits in Genesee County and other counties to the north to fill the demand for gravel is shown by the fact that limestone from the Saginaw area is trucked past Genesee County sand and gravel operations into Livingston and Oakland counties.

2.6 Zoning Impacts on Construction Aggregate Resource Availability

Zoning is a critical variable in the development of new sand and gravel operations. Adverse zoning has prevented access to well-located natural aggregate deposits. The recent passage of Public Act 113 by the Michigan Legislature was implemented to increase access to this vital natural resource that is a universal need in the region. Beyond challenging zoning regulations, much of the potential natural resources in the region have been permanently eliminated because of urban and suburban growth. New homes are often constructed on undeveloped sand and gravel deposits, forcing the importation of those resources from distant locations, effectively increasing costs because of transportation premiums.

3.0 SOUTHEAST MICHIGAN CONSTRUCTION AGGREGATE MARKETS

3.1 Geographic Market

The aggregate resource market supplies aggregates to a variety of end users in Southeast Michigan. Oakland, Livingston and Macomb Counties are areas of increasing population, partially driven by a population shift from the urban areas in and around Detroit to the surrounding suburban and rural areas. This generates demand for new housing, roads, and commercial buildings, and the aggregates to build them.

The regional aggregate resources are located in three areas within Southeast Michigan and two areas of Northern Michigan. Sand and gravel is produced from deposits located in an arc to the west, northwest and north of Detroit. Slag aggregate is produced as a steel industry co-product at steel mills in Detroit. Crushed limestone is produced in Monroe County, the northern lower peninsula at Rogers City and Presque Isle, and in the upper peninsula at Cedarville and Port Inland (See Figures 1 and 2).

In Michigan, almost all processed sand and gravel is used for construction purposes, and approximately 65 percent of crushed stone is used for construction applications. The remaining 35 percent is used in chemical and steel making. Slag is used mainly as a construction aggregate with some additional minor specialty uses. (See Figure 3, and Tables 4, 5, and 6)

3.2 Construction Aggregate Delivery to Market (Transportation Impacts)

Because construction aggregate is a low unit value commodity, the cost associated with the transportation method used to move the aggregate from the producer to the market is of major significance. The three major modes of aggregate transportation are truck, rail and water. Trucking is the predominant method of transport in Michigan. The national average is approximately $0.10 per ton-mile with the range in cost between $0.06 and $0.25 per ton-mile. A representative transportation price list for trucking aggregate in Southeast Michigan is presented in Table 7. Economics normally preclude trucking of aggregates beyond 50 to 75 miles from the producer to the purchaser.

Rail is a more cost efficient form of bulk aggregate transportation, nationally averaging $0.05 per ton-mile. However, rail is often inconvenient because of a limited track network, inflexible delivery schedules and high storage and loading infrastructure costs. In addition, rail transportation of construction aggregates still require trucking from the rail yards to the end use customer. Currently, rail is used very little to haul aggregate in Southeast Michigan. Rail is limited to a few low volume, high value specialty products. The only aggregate rail yards servicing the market area are in Flint and Lansing.

Water transportation is the least expensive form of aggregate transportation, nationally averaging approximately $0.05 per ton-mile and ranging from less than $0.02 to $0.08 per ton-mile. Water transport is limited to Lake Huron, the Detroit River and Lake Erie in Southeast Michigan. However, water transportation still requires truck transportation from the dock to the end user. Currently, limestone is being shipped into the Detroit market area from northern quarries located at Rogers City, Presque Isle, Cedarville and Port Inland. The cost of delivery alone is approximately $4.50 to $5.00 per ton ($0.012 to $0.013 per ton mile). Once the aggregate reaches the dock, the material needs to be offloaded onto the dock and trucked to its final destination, which adds trucking transportation and handling fees on top of the water transport fees. Handling fees range from $1.50 to $2.00 per ton depending on demurrage, storage and labor costs.

The varying price of fuel has significantly impacted the cost of aggregate transportation. Fuel surcharges are common on all modes of transportation. Since truck, rail and boat all rely on diesel fuel, they remain in the same relative competitive position. However, as fuel prices increase the cost of transportation exceeds the cost of the aggregate at much shorter distances and becomes a larger part of the total cost of the material on the job site.

As was noted previously, various aggregates have different physical characteristics, which often results in the use of multiple aggregate products on a single job. It is common for multiple materials from different locations to be used in a single mix design of concrete or asphalt. Economics and specifications often result in the "closest" material not being used for a particular project.

There are over 100 ready-mix concrete plants and over 25 asphalt plants located throughout the 9 county study area. All of these plants require materials of specific physical characteristics delivered cost effectively to remain viable.

Transportation is a key issue in the market. Trucks often pick up 2NS natural sand from the north or west areas (where the deposits exist) and deliver it to a ready-mix concrete plants in or near Detroit. The truck will then pick up slag, dock limestone or limestone in Monroe and deliver it to a ready-mix plant in the north or west. This allows the north or west plant to make concrete that can be exposed to the weather without failure and the Detroit plant to use a cost effective natural sand instead of expensive crushed stone sand. This "round-trip" transportation allows materials to move effectively throughout the area. It also ties

the entire 9 county area together. Because of this transportation network, the flow of aggregates to each physical "sub-market" is coordinated in conjunction with other "sub-markets" in the region.

3.3 Construction Aggregate Current Market Demand

According to the Michigan Department of Environmental Quality, Office of the Geological Survey approximately 33 million metric tons of sand and gravel and 21 million metric tons of crushed stone are produced annually in Michigan, based upon the years of 2009 – 2011 (see Table 4). The Office of Geological Survey breaks down the construction uses of sand and gravel produced in 2010, as presented in Table 5. Similarly, the quantity of crushed stone produced in 2011 is broken down for each construction use and is presented in Table 6.

In the 9 county study area, approximately 30 million tons of construction aggregates (sand, gravel, limestone and slag) will be produced or delivered to the market in 2015 (see Table 3). This quantity includes an estimated 14.3 million tons of sand and gravel. Locations of primary construction aggregate production facilities within the 9 county study area are illustrated in Figure 2.

For comparison purposes, approximately 23.7 million tons of construction aggregate will be consumed within Southeast Michigan in 2015, based upon the total estimated sales of sand and gravel, limestone and slag as depicted in Figures 4 and 5. These charts are based on construction activity as reported by FW Dodge / McGraw Hill. This consumption number is somewhat lower than the production number listed in Table 3 because not all production serves the study market area; some of the products are exported into areas such as Lansing and Jackson, which are not included in the study.

Attempts were made to determine construction aggregate production and sales figures from producers in the study area. However, most companies consider this data proprietary, although valuable information can be collected from publically available data including permit information. Table 3 lists the estimated annual production and estimated remaining life of the major construction aggregate operations in Southeast Michigan. Many of the operations have a remaining life of 10 years or less. There are additional aggregate facilities in the market (beyond those listed) but their equipment and/or reserves are not adequate to produce material that will meet the specifications required for MDOT or engineered projects. Their materials are limited to low volume, low value fill and base applications.

In addition to the need for construction aggregates to serve the region, the resources also serve significant internal need and demand from affiliates of AAOM and Levy involved in the production of asphalt and ready-mix concrete. As set forth in the Community Impact Statement, AAOM estimates that internal need may range from 1,500,000 tons to 2,000,000 tons per year (subject to market conditions).

3.4 Construction Aggregate Pricing

Sales prices of construction aggregate vary regionally. The pricing structure is dependent on several factors, including availability of resources, specifications required for the aggregate (which drives production costs), distance to market, competition, and demand. Table 8 shows published prices of materials from various suppliers in the market area. Usually similar products are priced competitively among the suppliers with higher prices closer to Metro Detroit because of transportation costs. The prices can be considered indicative of the overall market price.

Table 9 lists average aggregate prices within the Michigan market area as reported to the Michigan Department of Environmental Quality, Office of the Geological Survey/U.S. Geological Survey. The

prices are indicative of anticipated revenues by product and market segment in the Southeastern Michigan Market.

3.5 Road Construction Funding

The Highway trust fund has been running out of money for a number of years and has been supplemented by cash infusions from the Federal Government's General Fund. It is unlikely that Congress will allow all federally funded transportation projects to stop for an extended period of time. Continuing short term funding will no doubt occur until a longer term funding plan is passed by Congress. The president has sent a $302 billion, 4-year surface transportation reauthorization proposal to Congress to address the issue. While the details of a comprehensive funding package are uncertain, it would be safe to assume the funding levels will not drop below current levels in the next 3-5 years and are likely to increase. Secretary Foxx has been extremely vocal about the need to invest in our infrastructure, which has been neglected for far too long. This national investment must be made and will at some future date substantially increase the aggregate consumption throughout the country. Exhibit 1 outlines the Secretary of Transportation's view on the challenge of reinvigorating the Highway Trust Fund to rebuild America's transportation network.

In early 2015, the State Transportation Commission approved MDOT's 2015-2019 Five Year Transportation Program. As seen in Exhibit 2, there are massive financial requirements to meet the increasing demand to repair and rebuild the State's road and bridge network. The package outlines efforts by MDOT to increase efficiencies, cut costs, and deliver the best value to the taxpayer. However, the compelling conclusion is that our primary transportation infrastructure is failing and requires substantial increases in long-term reliable funding to go beyond the "band-aid" approach that MDOT has utilized in the past decade. The recent passage of a comprehensive road fund package by the State of Michigan will generate $600 million a year in incremental funding for roads and bridges in 2017, growing to $1.2 billion per year in 2021. This represents a doubling in MDOT road projects and a corresponding doubling of demand for quality aggregates to support those projects.

In June of 2013, SEMCOG, the Southeast Michigan Council of Governments, published a report titled "Creating Success with Our Transportation Assets; 2040 Regional Transportation Plan for Southeast Michigan." The report is attached as Exhibit 3. The study enumerates the many ways in which Southeast Michigan's transportation network is directly tied to our economic prosperity, fiscal sustainability, and overall quality of life. The report lists many vital transportation projects envisioned by 2040 and reinforces the need for continued expansion of the supply of aggregate resources necessary to build and maintain our regional transportation system.

3.6 SE Michigan Population Projections

SEMCOG also published a comprehensive study in 2013 entitled "Southeast Michigan 2040 Forecast Summary." This long range forecast, attached as Exhibit 4, includes projections for population, households and jobs in the region. The outlook for demographics and socioeconomics changes in Southeast Michigan provides a foundation for planning the region's transportation infrastructure, and helps support the justification for increased natural aggregate resources to support this growth.

4.0 CONSTRUCTION AGGREGATE PROJECTED FUTURE DEMAND AND SUPPLY

Market size is defined by the consumption and demand for aggregates in an area. Quantifying the market size is accomplished by considering the total sales of aggregate to total market area. Approximately 23.7

million tons of aggregate will be consumed within Southeast Michigan in 2015 based on the total estimated sales of sand and gravel, limestone and slag as depicted in Figures 4 and 5. This chart is based on construction activity as reported by FW Dodge / McGraw Hill. This consumption number is somewhat lower than the production number listed in Table 3 because not all production serves the study market area; some of the products are exported into areas such as Lansing and Jackson, which are not included in the study.

The economic growth of a metropolitan area usually increases aggregate demand. Growth of the market area can be closely related to growth in the population. Growing areas consume more aggregates because of greater construction. In the study area, which includes Wayne, Oakland, Livingston, Washtenaw, Monroe, Genesee, St Clair, Lapeer and Macomb counties, the average consumption of construction aggregates per person is approximately 5.0 tons per year (23.7 million tons of aggregate, 4.7 million people). The actual average tonnage consumed, per capita, tends to be much higher in high growth areas than in low-growth areas. The 5.0 ton/person-year figure should be considered very conservative; 2011 per capita consumption of aggregate for the entire state of Michigan was approximately 5.76 tons per year (57 million tons of aggregate including slag, 9.9 million people). The state average was determined from information obtained through the USGS Mineral Survey and the U.S. Bureau of Census. Per capita consumption in the growing counties in Southeast Michigan is certainly higher than the 5.0 ton figure and is lower in Wayne County because of a high population density and negative growth. Actual per capita consumption for growing counties, such as Oakland, Livingston and Macomb is greater than 5.0 tons per capita per year.

As presented in the SEMCOG data, Oakland County is the second most populated county in Southeast Michigan and is projected to grow approximately 3.7 percent over the next 30 years. Livingston County, although not heavily populated, is projected to grow approximately 18.4 percent over the next 30 years. As suburban growth continues, both counties will experience a greater demand for construction aggregate.

Construction aggregate consumption is also expected to increase in the future due to increased road funding and an improving economy, by a minimum of 6% per year through 2025. With the recent passage of a comprehensive road fund package by the State of Michigan the rate of increased demand will likely be accelerated above the projected 6% annual increase. The new Michigan road funding package will generate $600 million a year in incremental funding for roads and bridges in 2017, growing to $1.2 billion per year in 2021. This represents a doubling in MDOT road projects and a corresponding doubling of demand for quality aggregates to support those projects.

In 10 years, the annual production of sand and gravel is expected to be curtailed by approximately 5,600,000 tons, approximately 39% of current production capacity, because of anticipated depletion of permitted and developed sand and gravel reserves serving the metro area (see Table 3). Based upon current projections, by 2024, the annual production rate of the construction aggregate industry will be unable to meet market demands without permitting new operations or increased production capacity of the existing remaining operations (see Figure 6). Although plant capacities at existing operations may sometimes be increased to temporarily meet growing market demands, this measure will result in the premature depletion of additional mining operations.

These figures may be conservative since the growth projections do not fully account for the increase in per capita aggregate consumption that is expected to occur with the funds available from the new state road funding package. The additional demand for construction aggregate will be filled by increasing current production levels of existing operations, by increasing current levels of imports and/or by the start-up of new operations.

5.0 CONSTRUCTION AGGREGATE COST IMPACTS ON THE GENERAL PUBLIC

A major consequences of importing aggregate in lieu of developing aggregate deposits that are closest to the market are significantly higher costs to the general public. The majority of these higher costs are related to an increase in truck hauling distances. For example, aggregates from a site in Lapeer County can be transported to the geographic center of Oakland County for a trucking cost of approximately $3.75-$4.00 per ton. When comparing this transportation cost with crushed stone aggregate imported to Detroit from northern Michigan, the imported limestone incurs a $6.00-$6.25 per ton trucking fee to be delivered to central Oakland County. This represents an increase of approximately $2.25 per ton in trucking costs alone. This does not take into consideration the additional costs for water shipment to Detroit and additional material handling requirements and dock fees. If limestone imports were to make up the market deficit, the additional costs to the end user would be significant. When locally available resources are not permitted and developed the genera1 public ultimately loses.

Another study was performed to examine the various costs of transporting aggregate to each of the counties in the study area. One case includes the average total cost of trucking local sand and gravel aggregate from several of the closest surrounding operations to the geographic centers of Livingston, Oakland, Macomb, Wayne, and Washtenaw counties. An average price of $8.25 per ton (average of all S&G sales at pit) was used to calculate local aggregate costs. These figures were then compared with aggregate, water transportation and associated handling costs of imported limestone from Rogers City via docks located in Port Huron, Saginaw and Detroit. Upon reaching the port, the material is transported by truck to each county. In this study an average price of $17.45 has been calculated for the limestone imports from Detroit and Port Huron. A price of $17.00 was determined for limestone imports from Saginaw. Tables 11, 12 and 13 summarize the results of the study.

When the import with the lowest cost is considered for each county within the study area, the direct added costs to consumers are considerable, often exceeding $20 million per year. This figure represents a very conservative estimate of the annual cost that would be imposed on the general public if local aggregate sources are not permitted for mining, and as a result, imports are increased to meet projected market demands. This increased cost will be passed onto the residents and businesses within all the counties of the market area.

In addition, there are associated road costs that correspond with an increase in haulage distance. An increased distance of 20 miles to market would translate to 40 more road miles traveled per load. This will increase overall truck traffic and wear on the existing transportation network.

Failure to develop sand and gravel resources in the market area will result in additional transportation related costs. By extracting economically mineable sand and gravel resources prior to using the land for development of residential and commercial properties, the general public experiences significant cost saving benefits. There is little doubt that if local sand and gravel aggregate continues to be consumed at current levels and new mines are not permitted, limestone and sand imports will increase dramatically. If this were to occur, the Southeast Michigan general public will realize a significant increase in aggregate transportation costs. As a portion of the sand and gravel reserves become exhausted, increased demands will be placed on remaining active sites which will ultimately reduce the estimated life of these operations. Local aggregate prices will steadily rise until they meet the price of limestone imports.

6.0 CONCLUSION

Currently, the Southeast Michigan construction aggregate reserve base contains approximately 231 million tons of permitted sand and gravel reserves and 140 million tons of limestone reserves.

The Southeast Michigan construction aggregate market covered by this study consumed approximately 22.6 million tons of aggregate from a variety of sources including sand and gravel, limestone, and slag in 2014.

Similarly, in the 9 county study area, approximately 30 million tons of construction aggregates (sand, gravel, limestone and slag) will be produced or imported into the market in 2015 (see Table 3). This quantity includes an estimated 14.3 million tons of sand and gravel.

In addition to the need for construction aggregates to serve the region, the resources also serve significant internal need and demand from affiliates of AAOM and Levy. As set forth in the Community Impact Statement, AAOM estimates that internal need may range from 1,500,000 tons to 2,000,000 tons per year (subject to market conditions).

Based upon current aggregate consumption rates, by the end of the year 2024, the depletion of permitted and existing mines will result in a reduction in industry wide annual aggregate production capacity for the 9 county study area of approximately 5.6 million tons, or 39% of current capacity (See Table 3).

In addition, the demand for construction aggregates is projected to increase in future years for multiple reasons, including population growth, and increased federal and state road funding.

Oakland County is the second most populated county in Southeast Michigan and is projected to grow approximately 3.7 percent over the next 30 years. Livingston County, although not heavily populated, is projected to grow approximately 18.4 percent over the next 30 years. As suburban growth continues, both counties will experience a greater demand for construction aggregate.

In early 2015, the State Transportation Commission approved MDOT's 2015-2019 Five Year Transportation Program. As seen in Exhibit 2, there are massive financial requirements to meet the increasing demand to repair and rebuild the State's road and bridge network. The package outlines efforts by MDOT to increase efficiencies, cut costs, and deliver the best value to the taxpayer. However, the compelling conclusion is that our primary transportation infrastructure is failing and requires substantial increases in long-term reliable funding to go beyond the "band-aid" approach that MDOT has utilized in the past decade.

The recent passage of a comprehensive road fund package by the State of Michigan will generate $600 million a year in incremental funding for roads and bridges in 2017, growing to $1.2 billion per year in 2021. This represents a doubling in MDOT road projects and a corresponding doubling of demand for quality aggregates to support those projects.

Similarly, the Federal Government continues to work towards a long term source of funding for the highway trust fund. Recently, the president sent a $302 billion, 4-year surface transportation reauthorization proposal to Congress to address the issue. While the details of a comprehensive funding package are uncertain, it is safe to assume the funding levels will not drop below current levels in the next 3-5 years and are likely to increase.

To meet this increased demand, addition construction aggregates may be delivered to the market by increasing current production levels of existing operations, by increasing current levels of imports and/ or through the start-up of new operations.

In the short term, it may be possible to increase existing aggregate industry capacity to meet growing market demands. However, increasing plant capacities is limited by equipment constraints, mining ordinances (limits of hours of operation) and other factors. Any increase in existing plant capacities made possible through capital expenditure or bolstering of plant production rates only results in a temporary solution, since this measure inevitably reduces the life of any given mining operation.

Therefore, new aggregate resources need to be permitted and opened in rural and suburban areas of southeast Michigan in the near future to meet current and future demands.

7.1 Figures

Figure 1

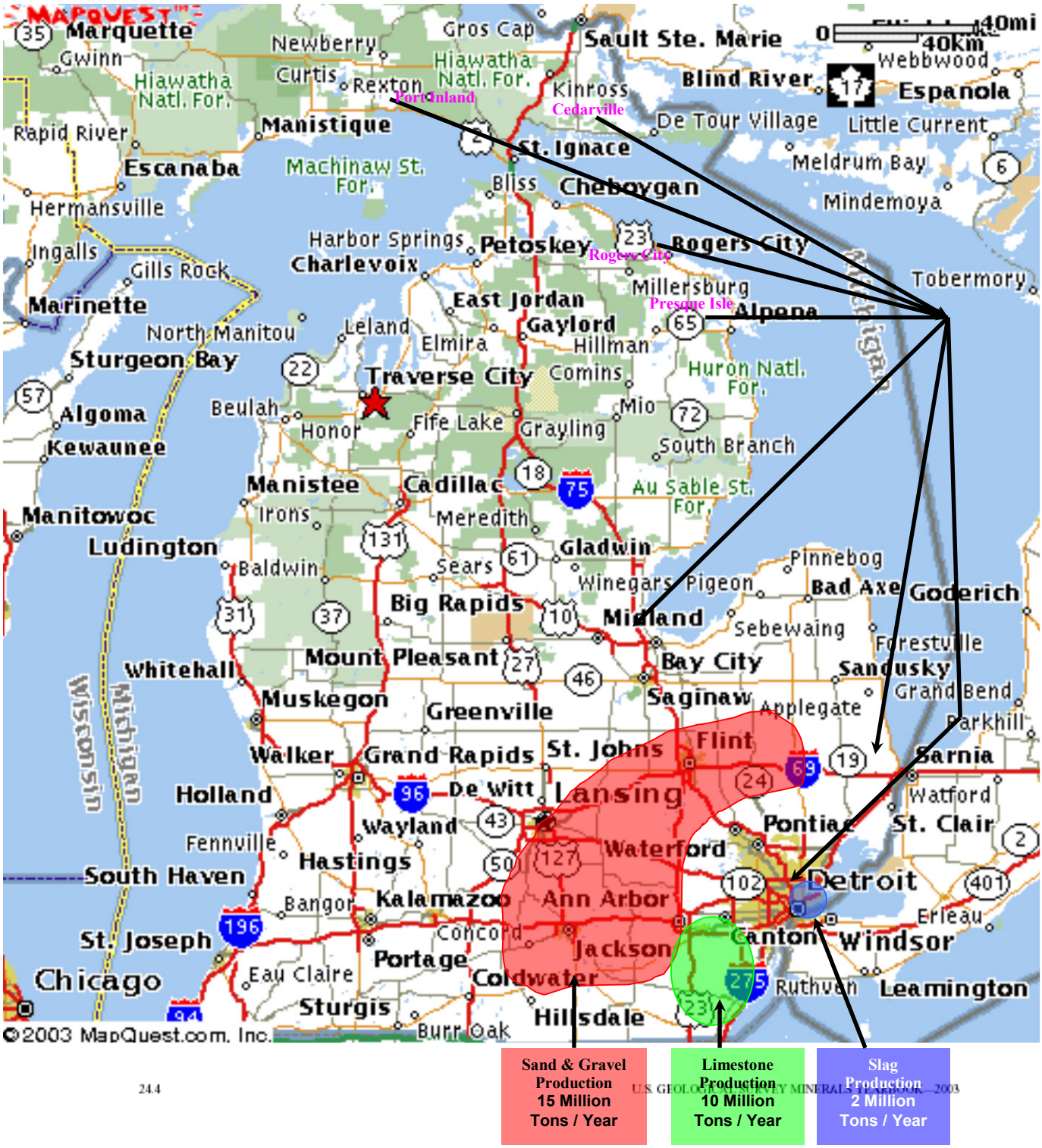


Figure 2

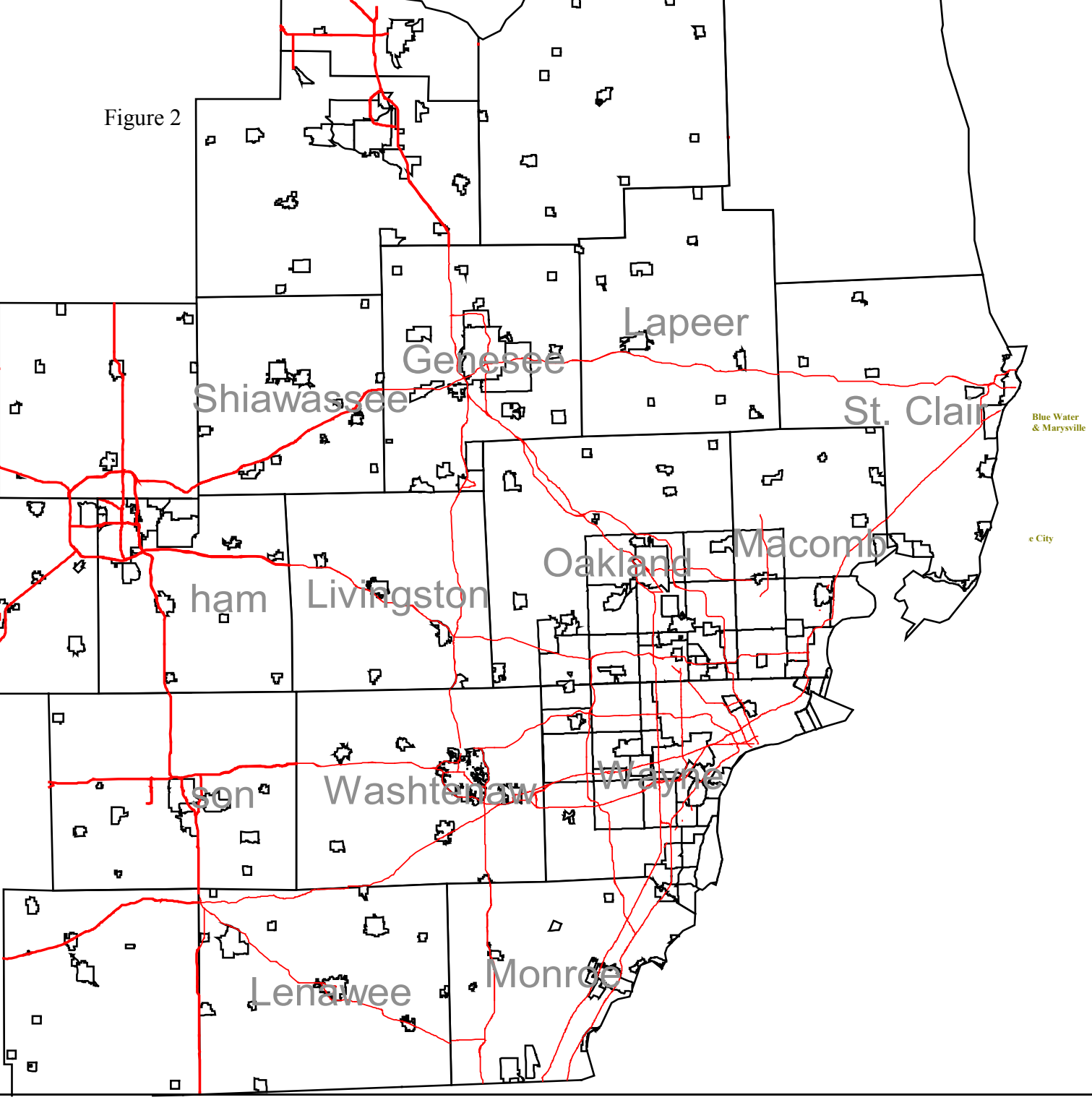
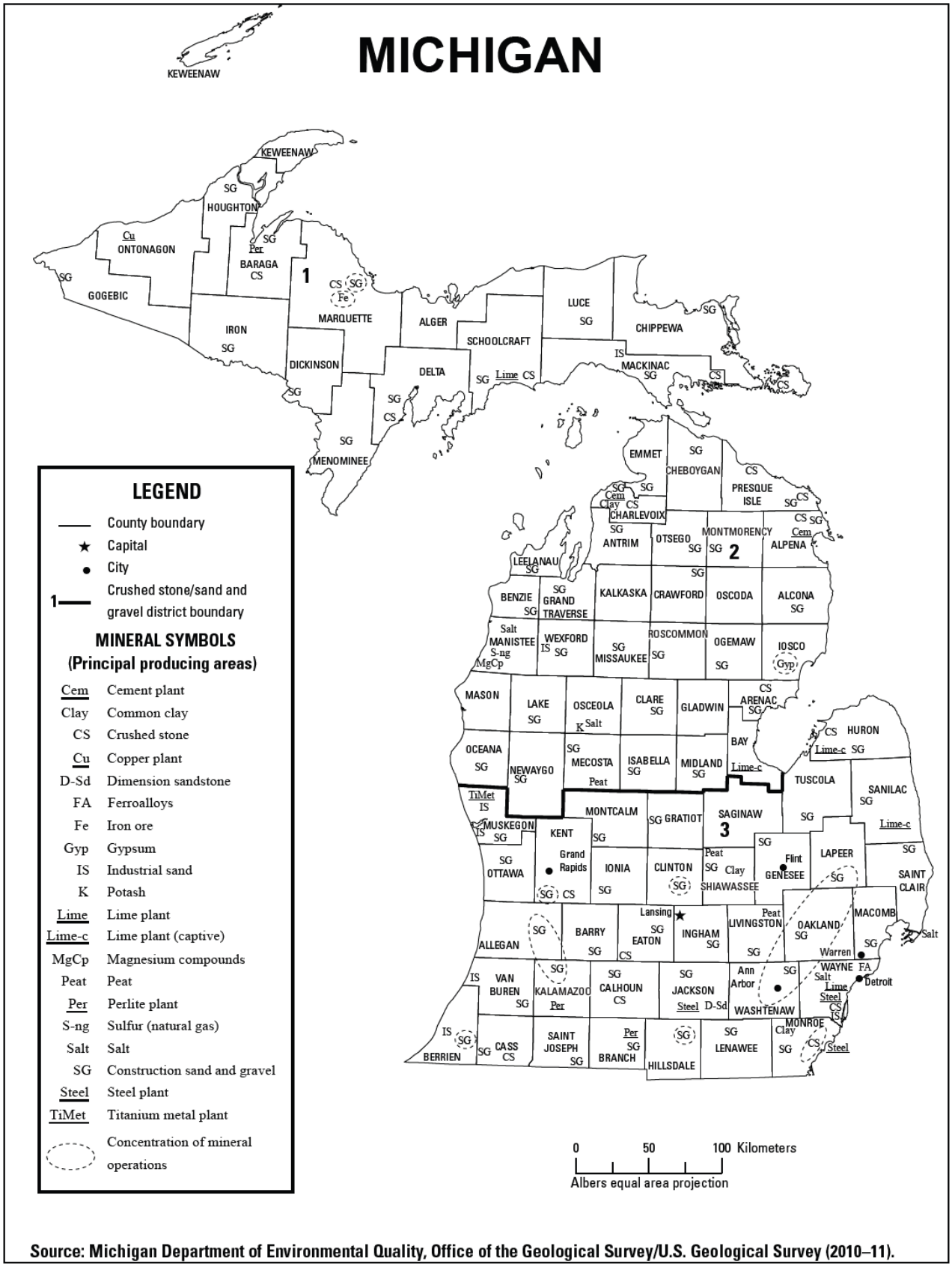

Lapeer
Genesee
Shiawassee
St. Clair
Blue Water
& Marysville
Macomb
Oakland
Livingston
Washtenaw
Wayne
Monroe
Lenawee

Figure 3



Source: Michigan Department of Environmental Quality, Office of the Geological Survey/U.S. Geological Survey (2010–11).

Figure 4 - Does not include impact of increase State and Federal Road Funding.

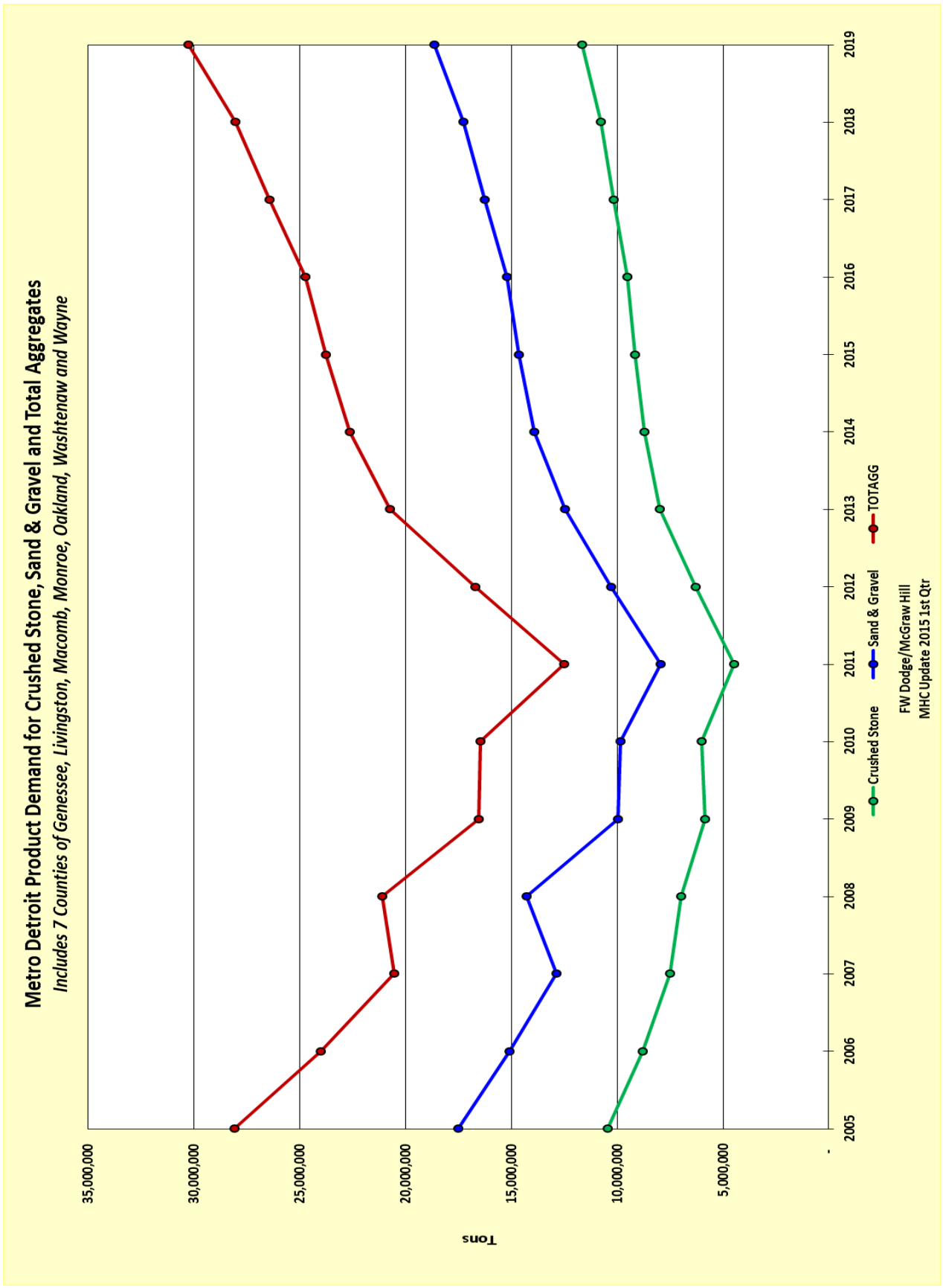


Figure 5

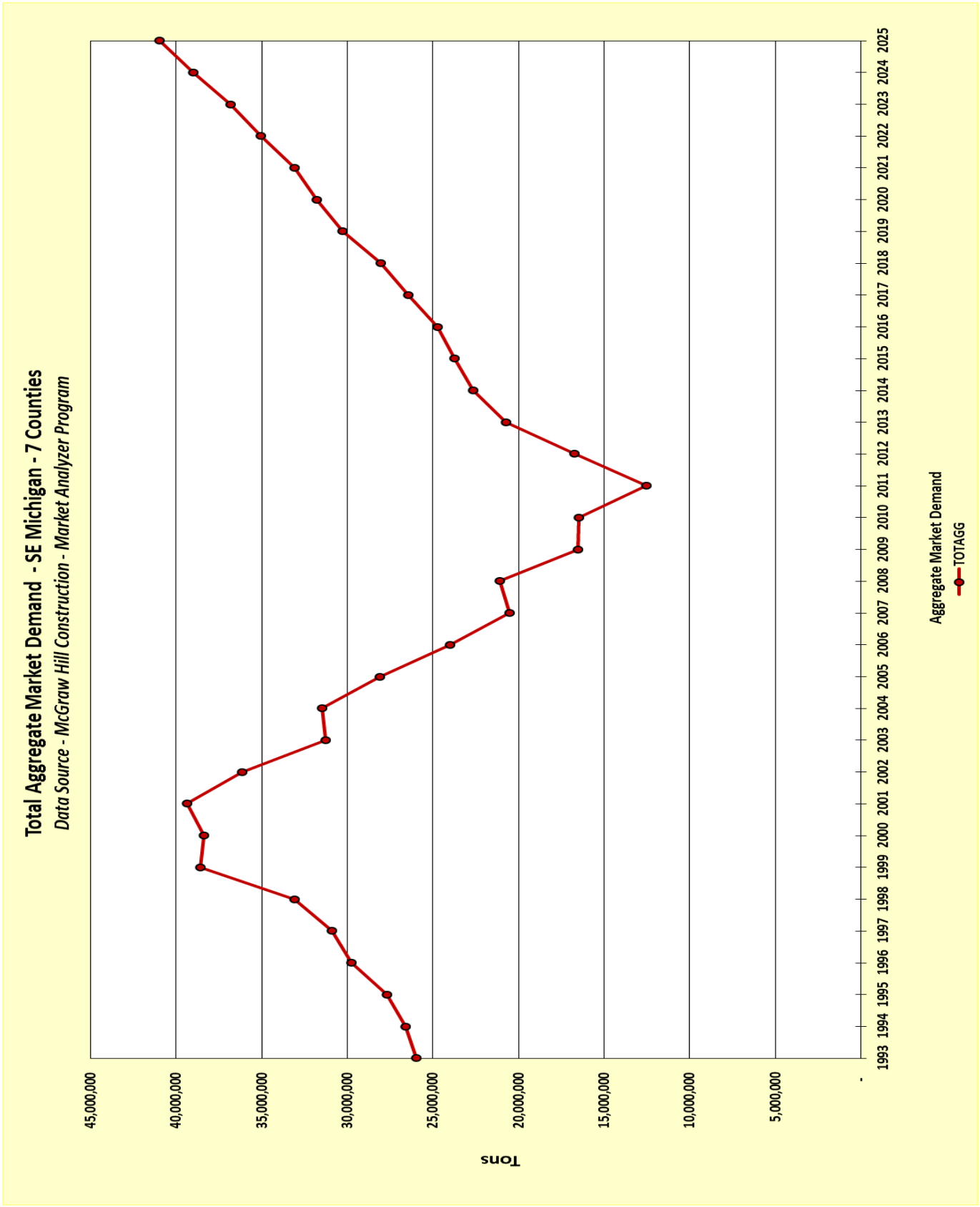
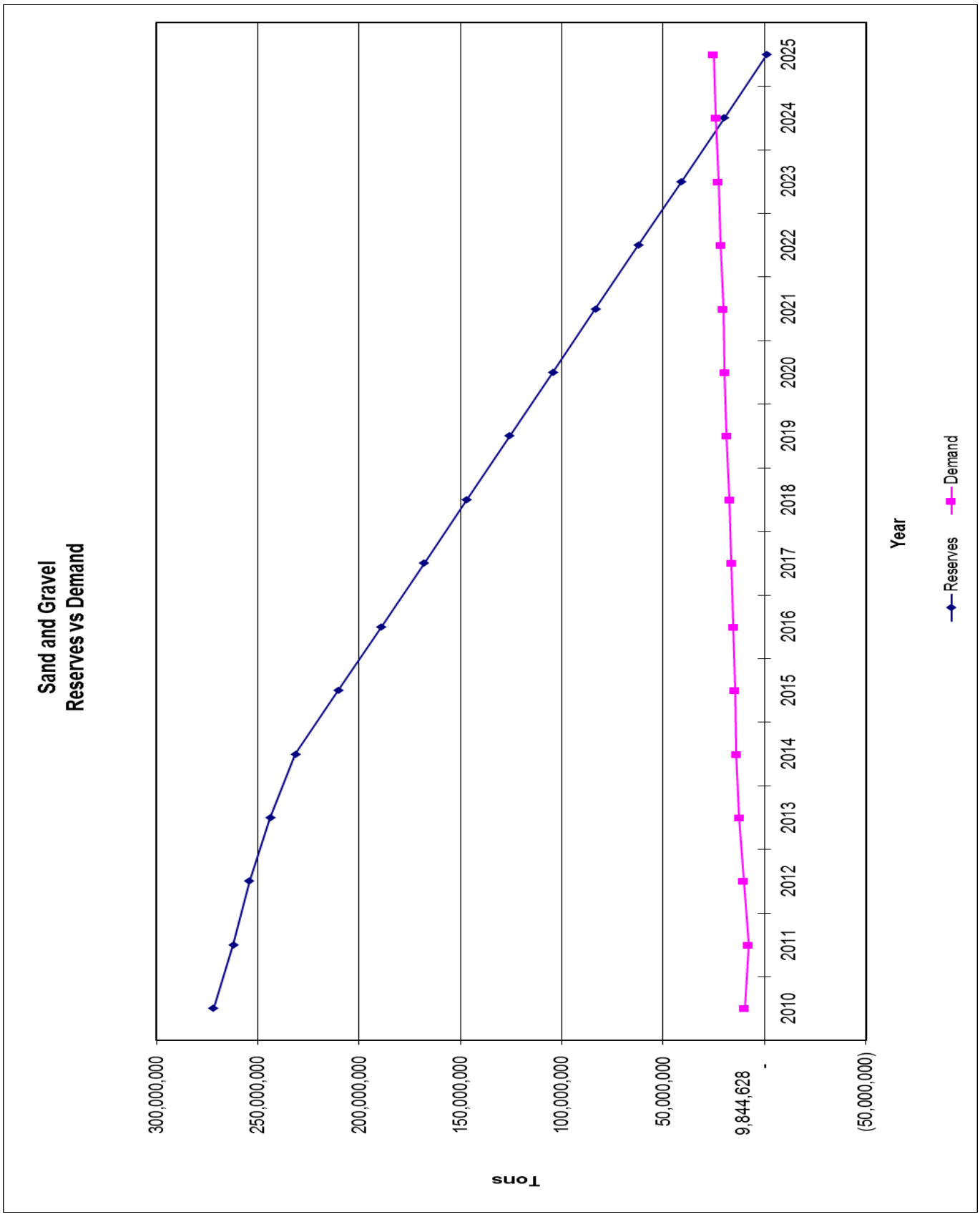

Total Aggregate Market Demand - SE Michigan - 7 Counties
Data Source - McGraw Hill Construction - Market Analyzer Program
Tons
45,000,000
40,000,000
35,000,000
30,000,000
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
-
1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Aggregate Market Demand
TOTAGG

Figure 6


Sand and Gravel
Reserves vs Demand
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
9,844,628
-
(50,000,000)
Tons
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Year
Reserves
Demand

7.2 Tables

Table 1aMDOT 2012 Standard Specification for Construction

Grading Requirements for Coarse Aggregates, Dense-Graded Aggregates, and Open-Graded Aggregates

Material Type	Class	Item of Work by Section Number (Sequential)	Sieve Analysis (MTM 109) Total Percent Passing (a)										Loss by Washing (MTM 108) % Passing
			2½ in	2 in	1½ in	1 in	¾ in	½ in	⅜ in	No. 4	No. 8	No. 30	No. 200 (a)
Coarse Aggregates	4 AA (b)	602	100	90–100	40–60	—	0–12	—	—	—	—	—	≤2.0
	6 AAA (b)	602	—	—	100	90–100	60–85	30–60	—	0–8	—	—	≤1.0 (c)
	6 AA (b)	601,602, 706,708,806	—	—	100	95–100	—	30–60	—	0–8	—	—	≤1.0 (c)
	6 A	205,401,402, 601, 602, 603,706,806	—	—	100	95–100	—	30–60	—	0–8	—	—	≤1.0 (c)
	17 A	406, 701, 706, 708		—	—	100	90–100	50–75	—	0–8	—	—	≤1.0 (c)
	25 A		—	—	—	—	100	95–100	60–90	5–30	0–12	—	≤3.0
	26 A	706,712	—	—	—	—	100	95–100	60–90	5–30	0–12	—	≤3.0
	29 A		—	—	—	—	—	100	90–100	10–30	0–10	—	≤3.0
Dense-Graded Aggregates	21 AA	302,304,305,306,3 07	—	—	100	85–100	—	50–75	—	—	20–45	—	4–8 (d,e)
	21 A	302,305,306, 307	—	—	100	85–100	—	50–75	—	—	20–45	—	4–8 (d,e)
	22 A	302,305, 306,307	—	—	—	100	90–100	—	65–85	—	30–50	—	4–8 (d, e, f)
	23 A	306,307	—	—	—	100	—	—	60–85	—	25–60	—	9–16 (e)
Open-Graded Aggregates	4 G (g)	303	—	—	—	—	—	—	—	—	—	—	—
	34 R	404	—	—	—	—	—	100	90–100	—	0–5	—	≤3.0
	34 G	404	—	—	—	—	—	100	95–100	—	0–5	—	≤3.0

a. Based on dry weights.
b. Class 6AAA will be used exclusively for all mainline and ramp concrete pavement when the directional commercial ADT is greater than or equal to 5,000 vehicles per day.
c. Loss by Washing will not exceed 2.0 percent for material produced entirely by crushing rock, boulders, cobbles, slag, or concrete.
d. When used for aggregate base courses, surface courses, shoulders and approaches and the material is produced entirely by crushing rock, boulders, cobbles, slag, or concrete, the maximum limit for Loss by Washing must not exceed 10 percent.
e. The limits for Loss by Washing of dense-graded aggregates are significant to the nearest whole percent.
f. For aggregates produced from sources located in Berrien County, the Loss by Washing must not exceed 8 percent and the sum of Loss by Washing and shale particles must not exceed 10 percent.
g. Reference contract documents.

Table 1b

MDOT 2012 Standard Specifications for Construction

Physical Requirements for Coarse Aggregates, Dense-Graded Aggregates, and Open-Graded Aggregates

Material	Series/ Class	Gravel, Stone, and Crushed Concrete						Slag (a)		All Aggregates
		Crushed Material, % min (MTM 117)	Loss, % max, Los Angeles Abrasion (MTM 102)	Soft Particles, % max (MTM 110)	Chert, % max (MTM 110)	Sum of Soft Particles and Chert, % max (MTM 110)	Freeze-Thaw Dilation, % per 100 cycle max (MTM 115) (d)	Sum of Coke and Coal Particles, % max (MTM 110)	Freeze-Thaw Dilation, % per 100 cycles max (MTM 115) (d)	Flat and Elongated Particles, ratio % max (ASTM D 4791)
Coarse Aggregates (n)	4 AA (b)	—	40	—	—	2.0 (c)	0.020	1.0	0.020	3:1–15.0 (l)
	6 AAA	—	40	2.0 (e)	2.5	4.0	0.040 (f)	1.0	0.040 (f)	—
	6 AA (g)	—	40	2.0 (e)	—	4.0	0.067 (h)	1.0	0.067	—
	6 A (g)	—	40	3.0 (e)	7.0	9.0	0.067	1.0	0.067	—
	17 A (g)	—	40	3.5 (e)	8.0	10.0	0.067	1.0	0.067	—
	25 A	95	45	8.0 (i)	—	8.0	—	1.0	—	3:1–20.0 (m)
	26 A (g)	—	40	2.0 (e)	—	4.0	0.067	1.0	0.067	—
	29 A	95	45	8.0 (i)	—	8.0	—	1.0	—	3:1–20.0 (m)
Dense-Graded Aggregates (j)	21 AA	95	50	—				—		—
	21 A	25	50	—				—		—
	22 A	25	50	—				—		—
	23 A	25	50	—				—		—
Open-Graded Aggregates	4 G	95	45 (k)	—				—		—
	34 R	≤20	45 (k)	—				—		—
	34 G	100	45 (k)	—				—		—

Notes for Table 902-2:

a. Iron blast furnace and reverberatory furnace slag must contain no free (unhydrated) lime.

b. 2.50 percent maximum 24 hour soak absorption based on oven dry 6 series aggregate.

c. 1.0% maximum for particles retained on the 1 inch sieve.

d. If the bulk dry specific gravity is more than 0.04 less than the bulk dry specific gravity of the most recently tested freeze-thaw sample, the aggregate will be considered to have changed characteristics and be required to have a new freeze-thaw test conducted prior to use on Department projects.

e. Clay-ironstone particles must not exceed 1.0 percent for 6AAA, 6AA and 26A, and 2.0 percent for 6A and 17A. Clay-ironstone particles are also included in the percentage of soft particles for these aggregates.

f. Maximum freeze-thaw dilation is 0.067 when the directional commercial ADT is less than 5000 vehicles per day.

g. Except for pre-stressed beams, the sum of soft and chert particles may be up to 3.0 percent higher than the values determined from the sample tested for freeze-thaw durability. However, under no circumstances will the deleterious particle percentages exceed the specification limits in Table 902-2. In addition, a source may be restricted to a minimum percent crushed not to exceed 15 percent less than the percent crushed in the freeze-thaw sample. When the freeze-thaw dilation is between 0.040 and 0.067 percent per 100 cycles more restrictive limits will be applied.

h. Maximum dilation of 0.010 for pre-stressed concrete beams.

i. Friable sandstone is included in the soft particle determination for chip seal aggregates.

j. Quarried carbonate (limestone or dolomite) aggregate may not contain over 10 percent insoluble residue finer than No. 200 sieve when tested in accordance with MTM 103.

k. If a blend of different aggregate sources, the abrasion value applies to each source.

l. ASTM D 4791 Section 8.4 will be followed. The test will be performed on the material retained down to and including the 1 inch sieve.

m. ASTM D 4791 Section 8.4 will be followed. The test will be performed on the material retained down to and including the No. 4 sieve.

n. Grade P1M concrete requires an optimized aggregate gradation as specified in section 604. Use aggregates only from geologically natural sources.

Table 1c

MDOT 2012 Standard Specifications for Construction

Grading Requirements for Granular Materials

Material	Sieve Analysis (MTM 109), Total % Passing (a)									Loss by Washing %
	6 in	3 in	2 in	1 in	½ in	⅜ in	No. 4	No. 30	No. 100	Passing No. 200 (a), (b)
Class I	–	–	100	–	45–85	–	20–85	5–30		0–5
Class II (c)	–	100	–	60–100	–	–	50–100	–	0–30	0–7
Class IIA (c)	–	100	–	60–100	–	–	50–100	–	0–35	0–10
Class IIAA	–	100	–	60–100	–	–	50–100	–	0–20	0–5
Class III	100	95–100	–	–	–	–	50–100	–	–	0–15
Class IIIA	–	–	–	–	–	100	50–100	–	0–30	0–15

a. Test results based on dry weights.

b. Use test method MTM 108 for Loss by Washing.

c. Except for use in granular blankets, Class IIA granular material may be substituted for Class II granular material for projects located in the following counties: Arenac, Bay, Genesee, Gladwin, Huron, Lapeer, Macomb, Midland, Monroe, Oakland, Saginaw, Sanilac, Shiawassee, St. Clair, Tuscola, and Wayne counties.

Table 1d

MDOT 2012 Standard Specification for Construction

Grading Requirements for Fine Aggregates

Material	Sieve Analysis (MTM 109), Total Percent Passing (a)							Loss by Washing % Passing No. 200 (a), (b)	Fineness Modulus Variation (c)
	3/8 in	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100		
2NS	100	95–100	65–95	35–75	20–55	10–30	0–10	0–3.0	±0.20 (d)
2SS (e)	100	95–100	65–95	35–75	20–55	10–30	0–10	0–4.0	±0.20 (d)
2MS	—	100	95–100	—	—	15–40	0–10	0–3.0	±0.20 (d)

a. Test results based on dry weights.

b. Use test method MTM 108 for Loss by Washing.

c. Aggregate having a fineness modulus differing from the base fineness modulus of the source by the amount exceeding the maximum variation specified in the table, will be rejected. Use ASTM C 136.

d. The base fineness modulus will be supplied by the aggregate producer at the start of each construction season and be within the range of 2.50 to 3.35. The base FM, including the permissible variation, will be within the 2.50 to 3.35 range.

e. Quarried carbonate (limestone or dolomite) cannot be used for any application subject to vehicular traffic.

Table 2

Table 501-2 Composition of Bituminous Mixtures

Mixture No. Mixture Type	2B	2C	3B	3C	4B
Binder %	4.0–6.0	4.0–6.0	4.5–7.0	4.5–7.0	5.0–8.0
Percent Passing Indicated Sieve					
37.5 mm	100	100			
25.0 mm	99–100	99–100	100	100	
19.0 mm	90 max.	90 max.	99–100	99–100	100
12.5 mm	78 max.	78 max.	90 max.	90 max.	99–100
9.5 mm	70 max.	70 max.	77 max.	77 max.	90 max.
4.75 mm	52 max.	52 max.	57 max.	57 max.	67 max.
2.36 mm	15–40	15–40	15–45	15–45	15–52
1.18 mm	30 max.	30 max.	33 max.	33 max.	37 max.
600 μm	22 max.	22 max.	25 max.	25 max.	27 max.
300 μm	17 max.	17 max.	19 max.	19 max.	20 max.
150 μm	15 max.	15 max.	15 max.	15 max.	15 max.
75 μm	3–6	3–6	3–6	3–6	3–6
Crushed Min % (MTM 117)	50	90	50	90	50

Mixture No. Mixture Type	4C	13	13A	11A	36A
Binder %	5.0–8.0	5.0–8.0	5.0–8.0	4.0–60	5.5–8.0
Percent Passing Indicated Sieve					
37.5 mm				100	
25.0 mm				90–100	
19.0 mm	100	100	100	70–95	
12.5 mm	99–100	75–95	75–95	55–85	100
9.5 mm	90 max.	60–90	60–90	40–80	92–100
4.75 mm	67 max.	45–80	45–80	25–65	65–90
2.36 mm	15–52	30–65	30–65	15–50	55–75
1.18 mm	37 max.	20–50	20–50	10–40	
600 μm	27 max.	15–40	15–40	7–32	25–45
300 μm	20 max.	10–25	10–25	5–20	
150 μm	15 max.	5–15	5–15	4–12	
75 μm	3–6	3–6	3–6	3–6	3–10
Crushed Min % (MTM 117)	90	0	25	25	60

Note: No more than 50% of the material passing the 4.75 mm sieve is allowed to pass the 600 μm sieve for mixtures 13A, 11A and 36A.

Table 3

2015 - Southeast Michigan - Major Aggregate Sources					
Operation	**County**	**Aggregate Type**	**Estimated Annual Production (Tons / Year)**	**Estimated Reserve Life (Years)**	**Estimated Reserve Life (Tons)**
Edw C. Levy Co.					
Plant #1 & Plant #2	**Wayne**	**BF Slag**	1,100,000	NA	
Plant #3	**Wayne**	**SF Slag**	450,000	NA	
Plant # 6	**Wayne**	**SF Slag**	350,000	NA	
		Total	1,900,000		
Blue Water Agg					
Marysville	**St. Clair**	**Dock Limestone**	350,000	NA	
Port Huron	**St. Clair**	**Dock Limestone**	1,000,000	NA	
Edw C. Levy Co.					
SCA - Concrete Mix	**Wayne**	**Dock Limestone**	300,000	NA	
SCA - Brennen	**Wayne**	**Dock Limestone**	350,000	NA	
SCA - Miller Road	**Wayne**	**Dock Limestone**	-	NA	
SCA - Marine City	**St. Clair**	**Dock Limestone**	1,000,000	NA	
Saginaw	**Saginaw**	**Dock Limestone**	500,000	NA	
6th Street	**Saginaw**	**Dock Limestone**	100,000	NA	
Crow Island	**Saginaw**	**Dock Limestone**	-	NA	
GM	**St. Clair**	**Dock Limestone**	-	NA	
DBS (Detroit Bulk Storage)					
Marysville	**St. Clair**	**Dock Limestone**	200,000	NA	
DBS Dock	**Wayne**	**Dock Limestone**	300,000	NA	
		Total	4,100,000		
GLA (Great Lakes Aggregates)					
Sylvania Quarry	**Monroe**	**Limestone**	2,000,000	21	42,000,000
Old Castle / Stoneco					
Newport	**Monroe**	**Limestone**	3,000,000	10	31,000,000
Dennison Farms	**Monroe**	**Limestone**	1,500,000	18	27,000,000
Stoneco Maybee	**Monroe**	**Limestone**	1,500,000	4	5,500,000
Stoneco Ottawa Lake	**Monroe**	**Limestone**	1,700,000	14	24,300,000
		Total	9,700,000	13.38	129,800,000
Aggregate Industries					
Chelsea	**Washtenaw**	**Sand & Gravel**	650,000	11	7,350,000
Barrett					
Manchester (Temp Shut Down)	**Washtenaw**	**Sand & Gravel**	-	0	13,000,000
Paul Bechtell					
Burnside	**Lapeer**	**Sand & Gravel**	500,000	15	7,500,000
J&D Aggregates					
Howell Twp.	**Livingston**	**Sand & Gravel**	350,000	10	3,650,000
Fyke S & G (*Fill Sand Pit- Commercial)					
Pickney	**Livingston**	**Sand & Gravel**	500,000	36	18,000,000
Edw C. Levy Co.					
American Aggregates of Michigan					
Buno	**Oakland**	**Sand & Gravel**	700,000	7	4,800,000
Highland	**Oakland**	**Sand & Gravel**	700,000	8	5,100,000
Ray Road	**Oakland**	**Sand & Gravel**	1,000,000	4	4,300,000
Freedom Twp (Temp Shut Down)	**Washtenaw**	**Sand & Gravel**	-	0	13,600,000
Grange Hall Rd	**Oakland**	**Sand & Gravel**	300,000	8	2,350,000

2015 - Southeast Michigan - Major Aggregate Sources					
Operation	County	Aggregate Type	Estimated Annual Production (Tons / Year)	Estimated Reserve Life (Years)	Estimated Reserve Life (Tons)
Burroughs Materials					
Holly	Oakland	Sand & Gravel	700,000	7	4,500,000
Groveland	Oakland	Sand & Gravel	300,000	4	1,200,000
Deanville Road	Lapeer	Sand & Gravel	300,000	1	400,000
Hartland	Livingston	Sand & Gravel	200,000	4	820,000
Ashley Development					
Brighton (Fill Sand Only)	Livingston	Sand & Gravel	100,000	10	1,000,000
Measel					
Burnside	Lapeer	Sand & Gravel	300,000	17	5,200,000
Mid-Michigan Sand & Gravel					
Jeddo Twp.	St. Clair	Sand & Gravel	700,000	13	9,300,000
Natural Aggregates Corp					
Brighton (Fill Sand Only)	Livingston	Sand & Gravel	1,000,000	6	6,000,000
Gerken Materials/Stansley					
Clinton	Washtenaw	Sand & Gravel	200,000	15	3,000,000
Round Lake S&G	Lenawee	Sand & Gravel	750,000	12	9,250,000
Glacial S&G	Hillsdale	Sand & Gravel	400,000	30	12,000,000
Tecumseh Ives Rd	Lenawee	Sand & Gravel	150,000	46	7,000,000
Stoneco (Mi Paviing & Mtrls - Oldcastle)					
Jerome	Hillsdale	Sand & Gravel	1,000,000	42	42,000,000
Burmeister	Washtenaw	Sand & Gravel	700,000	16	11,000,000
Drake	Washtenaw	Sand & Gravel	500,000	12	6,000,000
Weber					
Burnside, Lapeer Co.	Lapeer	Sand & Gravel	100,000	29	2,900,000
Goodland Twp.	Lapeer	Sand & Gravel	150,000	4	550,000
South Flint S&G					
Holly	Oakland	Sand & Gravel	300,000	7	2,100,000
Newark S&G					
Lapeer Twp.	Lapeer	Sand & Gravel	200,000	7	1,400,000
John R S&G					
Metamora Twp.	Lapeer	Sand & Gravel	350,000	9	3,000,000
I-75 Aggregates					
Groveland Twp.	Oakland	Sand & Gravel	150,000	63	9,500,000
Getner Woodstock Aggregates					
Round Lake Hwy	Lenawee	Sand & Gravel	750,000	25	19,250,000
Aggregate Resources					
Waterloo	Jackson	Sand & Gravel	300,000	2	600,000
		Total	14,300,000	16.62	237,620,000
Total		Sand & Gravel	14,300,000	16.62	237,620,000
Total		Dock Limestone	4,100,000	NA	-
Total		Limestone	9,700,000	13.38	129,800,000
Total		Slag	1,900,000	NA	-

Table 4

Source: Michigan Department of Environmental Quality, Office of the Geological Survey/U.S. Geological Survey (2010-2011)

NONFUEL MINERAL PRODUCTION IN MICHIGAN[1, 2]

(Thousand metric tons and thousand dollars)

	2009		2010		2011	
Mineral	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	80	9,800 e	83	10,200 e	61	8,300 e
Portland	3,550	350,000 e	3,480	350,000 e	3,480	353,000 e
Clays, common	318	1,310	312	1,280	312	1,280
Gemstones, natural	NA	2	NA	2	NA	2
Gypsum, crude	345 r	2,440 r	302	2,080	345	2,670
Iron ore, usable shipped	8,870	W	11,900	W	13,200	W
Peat	W	W	4	W	3	27
Sand and gravel:						
Construction	34,100 r	174,000 r	33,300	190,000	31,900	178,000
Industrial	1,410 r	32,000 r	1,350	31,700	1,830	67,500
Stone, crushed	20,400	116,000 r	21,500	100,000	20,700	99,000
Combined values of lime, magnesium compounds, potash, salt, stone (dimension dolomite sandstone), and values indicated by symbol W	XX	1,080,000	XX	1,490,000	XX	1,700,000
Total	XX	1,760,000	XX	2,170,000	XX	2,410,000

eEstimated. rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data.

XX Not applicable.

[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

[2]Data are rounded to no more than three significant digits; may not add to totals shown.

Table 5

Source: Michigan Department of Environmental Quality, Office of the Geological Survey/U.S. Geological Survey (2010-2011)

MICHIGAN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2010,

BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	4,940	$28,800	$5.83
Plaster and gunite sands	25	240	9.60
Concrete products (blocks, bricks, pipe, decorative, etc.)	71	899	12.66
Asphaltic concrete aggregates and other bituminous mixtures	3,580	24,700	6.90
Road base and coverings	4,830	26,600	5.51
Road and other stabilization (cement)	164	1,190	7.26
Road and other stabilization (lime)	139	1,250	8.99
Fill	3,480	9,880	2.84
Snow and ice control	151	607	4.02
Railroad ballast	61	545	8.93
Filtration	109	1,090	10.00
Other miscellaneous uses[2]	71	755	10.63
Unspecified:[3]			
Reported	4,110	28,000	6.81
Estimated	11,900	67,000	5.63
Total or average	33,300	190,000	5.71

[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

[2]Includes roofing granules and golf course.

[3]Reported and estimated production without a breakdown by end use.

Table 6

Source: Michigan Department of Environmental Quality, Office of the Geological Survey/U.S. Geological Survey (2010-2011)

MICHIGAN: CRUSHED STONE SOLD OR USED BY PRODUCERS

IN 2011, BY USE[1]

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	145	2,050
Filter stone	49	322
Coarse aggregate, graded:		
Concrete aggregate, coarse	2,110	11,000
Bituminous aggregate, coarse	164	695
Bituminous surface-treatment aggregate	W	W
Railroad ballast	W	W
Fine aggregate (-⅜ inch):		
Stone sand, concrete	W	W
Stone sand, bituminous mix or seal	W	W
Screening, undesignated	256	1,310
Coarse and fine aggregates:		
Graded road base or subbase	2,020	8,560
Unpaved road surface	957	4,610
Terrazzo and exposed aggregate	W	W
Crusher run or fill or waste	W	W
Unspecified coarse and fine aggregates	274	2,120
Unspecified and other construction materials	2	17
Agricultural:		
Agricultural, limestone	159	736
Unspecified and other agricultural uses	W	W
Chemical and metallurgical:		
Cement manufacture	4,080	9,560
Flux stone	167	1,100
Glass manufacture	W	W
Special, other fillers or extenders	W	W
Unspecified:[2]		
Reported	54	414
Estimated	9,790	54,100
Total	20,700	99,000

W Withheld to avoid disclosing company proprietary data; included in "Total."

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Reported and estimated production without a breakdown by end use.

Table 7

State Trucking Company

9300 Dix Ave
Dearborn, MI 48120
(313) 843-7200

One Way (Miles)	Straight Haul Charge Rate
1	$2.32
2	$2.44
3	$2.56
4	$2.68
5	$2.80
6	$2.92
7	$3.04
8	$3.16
9	$3.28
10	$3.40
11	$3.52
12	$3.64
13	$3.76
14	$3.88
15	$4.00
16	$4.11
17	$4.22
18	$4.33
19	$4.44
20	$4.55
21	$4.66
22	$4.77
23	$4.88
24	$4.99
25	$5.10
26	$5.21
27	$5.32
28	$5.43
29	$5.54
30	$5.65
31	$5.75
32	$5.85
33	$5.95
34	$6.05
35	$6.15
36	$6.25
37	$6.35
38	$6.45
39	$6.55
40	$6.65
41	$6.75
42	$6.85
43	$6.95
44	$7.05
45	$7.15
46	$7.25
47	$7.35
48	$7.45
49	$7.55
50	$7.65

One Way (Miles)	Straight Haul Charge Rate
51	$7.74
52	$7.83
53	$7.92
54	$8.01
55	$8.10
56	$8.19
57	$8.28
58	$8.37
59	$8.46
60	$8.55
61	$8.63
62	$8.71
63	$8.79
64	$8.87
65	$8.95
66	$9.03
67	$9.11
68	$9.19
69	$9.27
70	$9.35
71	$9.43
72	$9.51
73	$9.59
74	$9.67
75	$9.75
76	$9.83
77	$9.91
78	$9.99
79	$10.07
80	$10.15
81	$10.23
82	$10.31
83	$10.39
84	$10.47
85	$10.55
86	$10.63
87	$10.71
88	$10.79
89	$10.87
90	$10.95
91	$11.03
92	$11.11
93	$11.19
94	$11.27
95	$11.35
96	$11.43
97	$11.51
98	$11.59
99	$11.67
100	$11.75

One Way (Miles)	Straight Haul Charge Rate
101	$11.82
102	$11.89
103	$11.96
104	$12.03
105	$12.10
106	$12.17
107	$12.24
108	$12.31
109	$12.38
110	$12.45
111	$12.52
112	$12.59
113	$12.66
114	$12.73
115	$12.80
116	$12.87
117	$12.94
118	$13.01
119	$13.08
120	$13.15

Minimum Load Requirement – 50 Tons. Loads less than minimum will be priced at a 50 ton load.
Possession of this price list does not guarantee the ability to purchase transportation.
All prices are subject to change without notice.

Table 8

2015 List Prices						
Operation	County	Aggregate Type	6A Concrete Stone $/ton	2NS Concrete Sand $/ton	21AA Dense Graded Base $/ton	Class II Fill $/ton
Plant #1 & Plant #2	Wayne	BF Slag	$ 10.65		$ 10.65	$ 6.95
Marysville	St. Clair	Dock Limestone				
Port Huron	St. Clair	Dock Limestone				
SCA - Concrete Mix	Wayne	Dock Limestone				
SCA - Brennen	Wayne	Dock Limestone	$ 17.45			
SCA - Miller Road	Wayne	Dock Limestone				
SCA - Marine City	St. Clair	Dock Limestone				
Saginaw	Saginaw	Dock Limestone	$ 17.00		$ 13.95	
6th Street	Saginaw	Dock Limestone				
Crow Island	Saginaw	Dock Limestone				
GM	St. Clair	Dock Limestone				
Marysville	St. Clair	Dock Limestone				
DBS Dock	Wayne	Dock Limestone				
Sylvania Quarry	Monroe	Limestone	$ 12.50		$ 10.10	$ 6.50
Newport	Monroe	Limestone	$ 13.50		$ 8.55	$ 3.25
Dennison Farms	Monroe	Limestone	$ 13.50		$ 9.55	$ 3.25
Stoneco Maybee	Monroe	Limestone			$ 8.55	
Stoneco Ottawa Lake	Monroe	Limestone	$ 16.00		$ 8.55	$ 3.25
Chelsea	Washtenaw	Sand & Gravel	$ 9.95	$ 4.95	$ 12.75	$ 3.00
Manchester	Washtenaw	Sand & Gravel				
Burnside	Lapeer	Sand & Gravel				
Howell Twp.	Livingston	Sand & Gravel				
Pickney	Livingston	Sand & Gravel				
Buno	Oakland	Sand & Gravel	$ 11.35	$ 7.45	$ 11.35	$ 2.65
Highland	Oakland	Sand & Gravel	$ 11.35	$ 7.45	$ 11.35	
Ray Road	Oakland	Sand & Gravel	$ 11.35	$ 7.45	$ 11.35	
Freedom Twp	Washtenaw	Sand & Gravel				
Grange Hall Rd	Oakland	Sand & Gravel		$ 7.45	$ 11.35	
Holly	Oakland	Sand & Gravel	$ 11.35	$ 7.45	$ 11.35	
Groveland	Oakland	Sand & Gravel				
Deanville Road	Lapeer	Sand & Gravel		$ 7.45	$ 11.35	$ 2.65
Hartland	Livingston	Sand & Gravel				
Brighton	Livingston	Sand & Gravel				
Burnside	Lapeer	Sand & Gravel				
Jeddo Twp.	St. Clair	Sand & Gravel				
Brighton	Livingston	Sand & Gravel				
Clinton	Washtenaw	Sand & Gravel				
Round Lake S&G	Lenawee	Sand & Gravel				
Glacial S&G	Hillsdale	Sand & Gravel				
Tecumseh Ives Rd	Lenawee	Sand & Gravel				
Jerome	Hillsdale	Sand & Gravel				
Burmeister	Washtenaw	Sand & Gravel	$ 7.50	$ 6.75		
Drake	Washtenaw	Sand & Gravel				
Burnside, Lapeer Co.	Lapeer	Sand & Gravel				$ 2.60
Goodland Twp.	Lapeer	Sand & Gravel				$ 2.75
Holly	Oakland	Sand & Gravel				
Lapeer Twp.	Lapeer	Sand & Gravel				
Metamora Twp.	Lapeer	Sand & Gravel				
Groveland Twp.	Oakland	Sand & Gravel				
Round Lake Hwy	Lenawee	Sand & Gravel				
Waterloo	Jackson	Sand & Gravel				

Table 9

Source: Michigan Department of Environmental Quality, Office of the Geological Survey/U.S. Geological Survey (2010-2011)

MICHIGAN: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2011, BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	4,860	$28,500	$5.86
Plaster and gunite sands	74	348	4.70
Concrete products (blocks, bricks, pipe, decorative, etc.)	56	560	10.00
Asphaltic concrete aggregates and other bituminous mixtures	2,950	19,700	6.68
Road base and coverings	4,620	26,900	5.82
Road and other stabilization (cement)	87	644	7.40
Road and other stabilization (lime)	279	1,160	4.16
Fill	3,490	10,600	3.04
Snow and ice control	166	736	4.43
Railroad ballast	38	349	9.18
Filtration	134	1,340	10.00
Other miscellaneous uses[2]	121	947	7.83
Unspecified:[3]			
Reported	4,150	25,700	6.19
Estimated	10,900	60,200	5.52
Total or average	31,900	178,000	5.58

[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Includes golf course and roofing granule.
[3]Reported and estimated production without a breakdown by end use.

Table 11

Comparison of Average Costs of Local Sand & Gravel vs Imported Limestone via Detroit

County	2010 Population	6A Dock Limestone Cost ($ per ton)	Dock Limestone Delivery Cost ($ per ton)	Average Cost of Delivered Imported Limestone ($ per ton)	6A Sand & Gravel Cost ($ per ton)	Highland S&G Sand & Gravel Delivery Cost ($ per ton)	Average Cost of Delivered Local Sand & Gravel ($ per ton)	Cost Difference ($ per ton)	Annual Total Cost Difference Based on 7.5 tons Per Capita Consumption in Year 2010 ($)
Oakland	1,202,362	17.45	6.22	23.67	11.35	3.57	14.92	8.75	78,905,006
Livingston	180,967	17.45	7.85	25.30	11.35	3.78	15.13	10.17	13,803,258
Macomb	840,978	17.45	5.68	23.13	11.35	7.05	18.40	4.73	29,833,695
Wayne	1,820,584	17.45	3.14	20.59	11.35	6.33	17.68	2.91	39,734,246
Washtenaw	344,791	17.45	5.89	23.34	11.35	5.79	17.14	6.20	16,032,782

Table 12

Comparison of Average Costs of Local Sand & Gravel vs Imported Limestone via Port Huron

County	2010 Population	6A Dock Limestone Cost ($ per ton)	Dock Limestone Delivery Cost ($ per ton)	Average Cost of Delivered Imported Limestone ($ per ton)	6A Sand & Gravel Cost ($ per ton)	Highland S&G Sand & Gravel Delivery Cost ($ per ton)	Average Cost of Delivered Local Sand & Gravel ($ per ton)	Cost Difference ($ per ton)	Annual Total Cost Difference Based on 7.5 tons Per Capita Consumption in Year 2010 ($)
Oakland	1,202,362	17.45	7.14	24.59	11.35	3.57	14.92	9.67	87,201,304
Livingston	180,967	17.45	10.35	27.80	11.35	3.78	15.13	12.67	17,196,389
Macomb	840,978	17.45	4.17	21.62	11.35	7.05	18.40	3.22	20,309,619
Wayne	1,820,584	17.45	7.66	25.11	11.35	6.33	17.68	7.43	101,452,043
Washtenaw	344,791	17.45	10.61	28.06	11.35	5.79	17.14	10.92	28,238,383

Table 13

Comparison of Average Costs of Local Sand & Gravel vs Imported Limestone via Saginaw

County	2010 Population	6A Dock Limestone Cost ($ per ton)	Dock Limestone Delivery Cost ($ per ton)	Average Cost of Delivered Imported Limestone ($ per ton)	6A Sand & Gravel Cost ($ per ton)	Highland S&G Sand & Gravel Delivery Cost ($ per ton)	Average Cost of Delivered Local Sand & Gravel ($ per ton)	Cost Difference ($ per ton)	Annual Total Cost Difference Based on 7.5 tons Per Capita Consumption in Year 2010 ($)
Oakland	1,202,362	17.00	8.53	25.53	11.35	3.57	14.92	10.61	95,677,956
Livingston	180,967	17.00	8.87	25.87	11.35	3.78	15.13	10.74	14,576,892
Macomb	840,978	17.00	11.03	28.03	11.35	7.05	18.40	9.63	60,739,636
Wayne	1,820,584	17.00	11.68	28.68	11.35	6.33	17.68	11.00	150,198,180
Washtenaw	344,791	17.00	10.78	27.78	11.35	5.79	17.14	10.64	27,514,322

7.3 Exhibits

Exhibit 1

United States Department of Transportation

National Press Club – Infrastructure Funding Panel

Secretary Anthony Foxx

Remarks as Prepared for Delivery

National Press Club – Infrastructure Funding Panel

Washington, D.C.

September 9, 2015

Thank you, David. It is great to be here today with President Hoffa and Governor Barbour. And I want to thank all the members of the National Press Club for convening this discussion.

Friends, we have been lulled into sleep by the boldness and sacrifices of past generations. America is not exceptional just because of what previous generations did. We are exceptional because every generation picks up from where the last generation left off and carries it forward.

That generational ethic is under assault right now. Transportation is the one thing we all must do together. We can't imagine it by ourselves. We can't pay for it by ourselves. We can't build it by ourselves. But look at what is done for us generation after generation.

Are we the same country that built the Erie Canal and Transcontinental Railroad? Are we the same country that built the Golden Gate Bridge, iconic train stations, and completed the Eisenhower Interstate Highway System? Are we same the country that led the way in moving freight and building mass transit?

The answer is "yes" – we are the same country. But if you were to ask me if we were holding up that legacy for your kids and my kids, the answer is "no." As evidence of that, let's just focus for a second on what counts for success in transportation right now. What yardstick are we using to measure success?

There are a ton of bills over in Congress that are in one way or another designed to bring the Highway Trust Fund back into solvency. Is that our goal – solvency of the Highway Trust Fund?

You could argue that back in 1956 making the Highway Trust Fund solvent was tantamount to addressing the nation's transportation needs. Back then we were building a new system. But today has anybody in Congress or any commentators helped you to understand what plugging the hole in the

Highway Trust Fund actually does in terms of filling potholes or fixing broken bridges or building the new projects that are needed for a growing country or even reducing traffic?

We are not thinking clearly about what the Highway Trust Fund is supposed to do. And that, my friends, is the greatest threat because it has so much to do with what we do now. This is about what do we want transportation to do for us in the 21st century?

The Highway Trust Fund is not an outcome. It is not a result. It is a tool. If your dishwasher is broken, you are not fixing the problem by finding the wrench. The wrench may help you but only if you focus on what's wrong with the dishwasher.

The Highway Trust Fund is one of our wrenches, one of our tools, to address our transportation needs.

What do we want for the future? Do we want commutes tomorrow to be longer? Do we want roads to be in such disrepair that we can't even keep up with maintenance? Do we want our bridges to fall into such a state of disrepair that they are impassable?

That is not how we got here. That is not how we are going to move this country forward.

So where are we right now? We're on our 34th short-term funding extension. It's gotten to a point where I feel like an auctioneer. Except instead of saying going once, going twice, I am now saying, going 33, going 34.

We saw the Senate pass a bipartisan bill before August recess. The House is anticipated to move a bill out of Committee this month.

Meanwhile, Americans want their transportation problems solved. I have been to quite a few community roundtables over the last couple of years – more than 100, in fact, all over the country. And the American people are talking about this. They're tired of the traffic. They're tired of the projects that keep getting promised and either get shelved or take forever to happen.

They're talking about the cost of transportation, which for many families is the second biggest expense they have.

And as much as the American people want a better transportation system, they know the political system is failing them. It is not delivering them the benefits they need and want today.

That's their reality. Then you come to Washington – and what's the reality in Washington?

In Washington, it's not a question of how much we need; it's a question of how much money do we have. And then the talk goes into "offsets," "pay-fors" and "pension smoothing."

Well, guess what? The American people know we need a better transportation system. They know we need to pay for it. They want it. Let's give it to them.

Now I want to be clear about this. When I say let's give it to them I don't just mean a solvent Highway Trust Fund. I mean, give them a better transportation system. Use the Highway Trust Fund as the tool it was intended to be to drive outcomes in America.

Let me give you an example. In many parts of the country people get stuck in traffic for an hour or more on a single trip.

A lot of commuters wake up every morning and know that if they get on the road even 10 or 15 minutes late, that means they'll be spending an additional 60 minutes or 90 minutes inching along through rush-hour traffic. And when you add in the extra cost of fuel to the cost of lost time, it's a lot. Americans are now paying a price of close to a thousand dollars annually to endure all these delays. Americans are now spending a total of close to 7 billion extra hours stuck in traffic.

Maybe one goal of a new transportation bill should be to reduce traffic.

Now I have asked our experts at DOT to do an analysis so we could understand how much we need to invest to reduce traffic and improve commuting times.

The GROW AMERICA Act, which we put forward, twice now, makes substantial investments beyond just making the Highway Trust Fund solvent. And in fact when we apply our traffic test to the GROW AMERICA Act, travel times actually go down.

What if we applied that test to investing just enough to make the Highway Trust Fund solvent? What would happen?

Travel times go up. So here we are spending months and months wrangling over extension after extension to get a status quo bill done. And it gets us longer commutes.

The DRIVE Act, a bill that passed the Senate just this summer, increases investment in the surface transportation system by 5 percent.

I've applauded this step by the Senate as a move towards progress. But if we can only achieve a modest increase in funding, we will still get more traffic.

I don't know about you, but if I am going to pay more, I want to get more. If we are going to invest more in infrastructure and get the same crummy results, what's the point? Let's move the country forward.

I am really worried that we are spending more time trying to find the wrench and not actually fixing the dishwasher.

Our experts at DOT found that the absolute minimum level of investment to prevent traffic from getting worse was $400 billion over six years.

The bill we put forward, the GROW AMERICA Act, puts us $78 billion above that mark. The discussion is not even in that ballpark yet.

So Congress has a lot of work to do to get closer to the levels of funding we need to reduce traffic.

That is one of the reasons why we continue to urge Congress towards more funding growth.

But, you say, Mr. Secretary, you are being unrealistic – we can't possibly afford what you're talking about.

I have to smile at this. Unrealistic? It's unrealistic to think our country can keep our transportation edge by running on fumes.

And if you're looking at offsets, try factoring in the economic impact of a strong, long-term transportation bill.

We really don't have time for this. The studies we have done as a department, including Beyond Traffic, outline a massive set of trends and choices we face over the next 30 years, including that we're going to have 70 million more people competing for use of our roads, transit, & rail networks, putting even more pressure on an already constrained system.

Our economy depends on the efficient movement of freight. That is hanging in the balance.

Much of this growth will occur in megaregions in the South and West. This includes cities like Los Angeles and Atlanta that are already choking on congestion. But it also includes other fast-growing metros where it is indisputable that the infrastructure we have today won't cut it.

Unless we change course, we are going to have longer travel times and more headaches. Instead of being an asset, our surface transportation system will be a drag on our economy and quality of life.

So as Congress returns this week after a long summer recess, I urge them to look at the needs of their constituents – to focus on results, and not just the tool to drive those results. Businesses want their freight moving faster. Families don't want to be stuck on the way to school and work.

We should remember that the future is a choice, and transportation will always be about one generation working on behalf of the next. And I do believe we can pass a bill that allows us to carry this work forward. I still believe that.

Thank you all very much.

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Updated: Tuesday, September 22, 2015

United States Department of Transportation

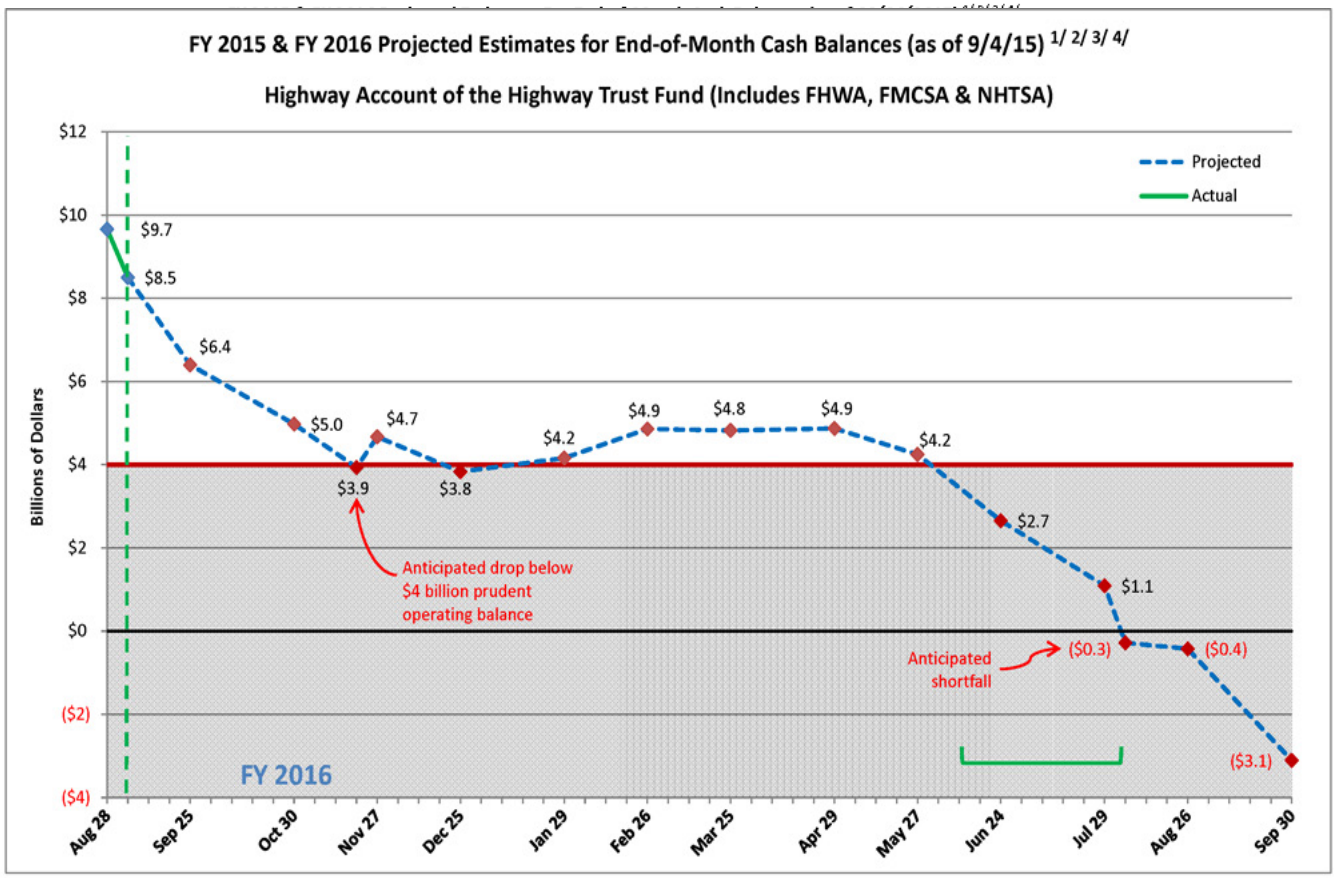
Highway Trust Fund Ticker

The Surface Transportation and Veterans Health Care Choice Improvement Act of 2015 (P.L. 114-41) authorized General Fund transfers to the Highway Account and Mass Transit of the Highway Trust Fund.

The current chart shows:

that the Highway Account will drop below safe levels on November 20, 2015 (see the monthly FHWA view below).

Highway Account - By Month



1/ Graph reflects actual data through 9/4/15 and end-of-month projections through FY 2016.

2/ Total receipt and outlay projections are based on FY 2016 Mid-Session Review assumptions. Projected monthly receipt and outlay rates are based on historic averages.

3/ The shaded area represents when the Highway Account balance drops below $4 billion, at which point cash management procedures may become necessary.

4/ Range of anticipated shortfall: Green brackets denote the estimated window of when the anticipated shortfall will occur.

Source: FHWA

However, it is important to note that most programs funded through the Highway Trust Fund are only authorized to spend money through October 29, 2015. An October 29 lapse in authorization prevents new obligations in the Highway and Transit accounts and impacts reimbursements to the States and other entities.

Mass Transit Account - By Month

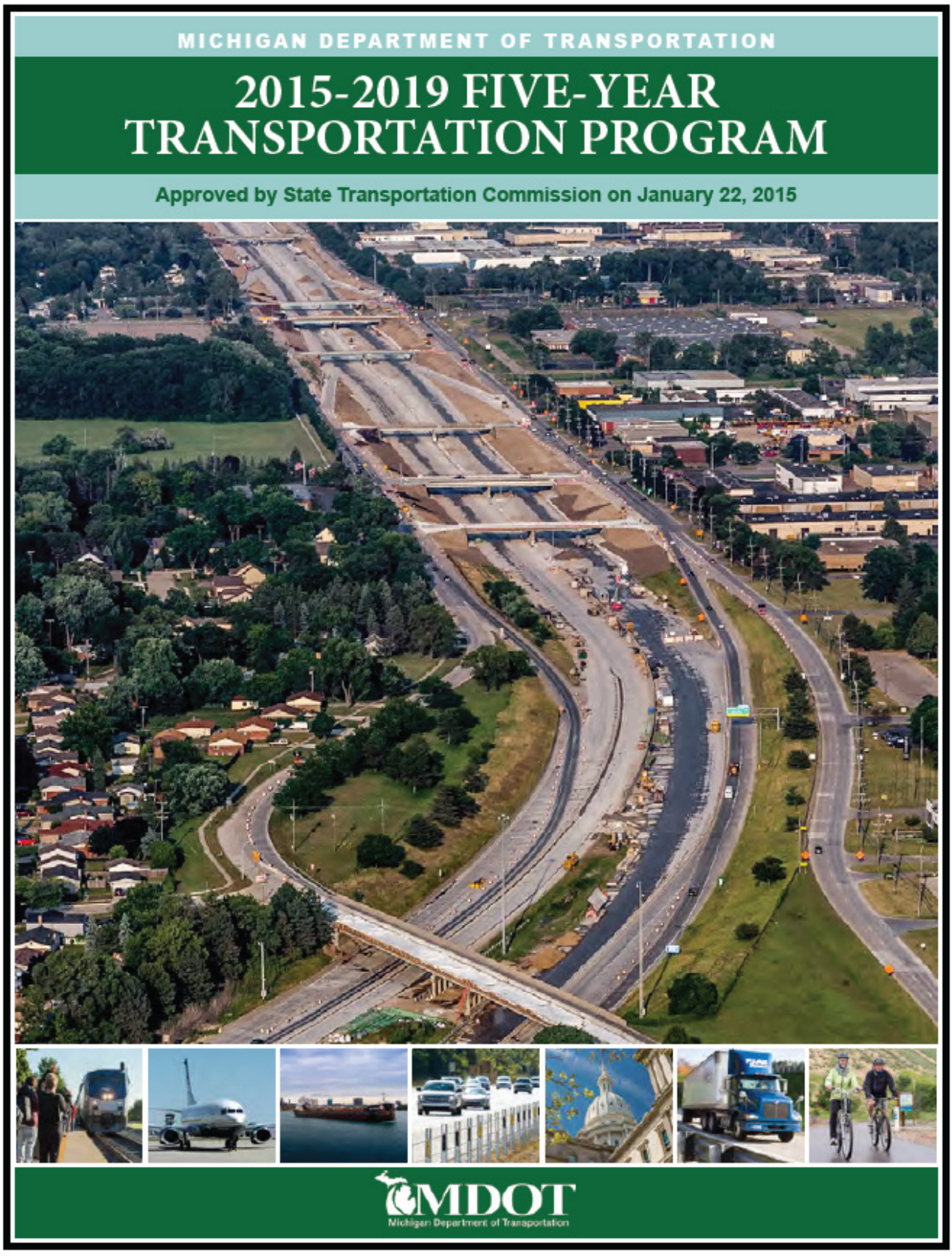
The Surface Transportation and Veterans Health Care Choice Improvement Act of 2015 (P.L. 114-41) authorized General Fund transfers to the Highway Account and Mass Transit Account of the Highway Trust Fund. Based on the most recent monthly estimate of future Highway Trust Fund balances, this general fund transfer will maintain the balance for the highway account above the prudent cash balance level of $4 billion until November 2015. At that time the Department of Transportation may be required to take additional steps to better manage the flow of federal dollars, including slowing the rate of reimbursements to states, in order to maintain a cash balance in the Trust Fund.

Trust fund balances are currently estimated to remain just at or below the prudent balance levels through May 2016, the beginning of the 2016 construction season, whereupon the balances will rapidly decline to the point where the fund will become fully insolvent and DOT will be unable to meet its financial obligations during the heart of the construction season.

It is important to note that new future Trust Fund balance estimates are generated monthly and routinely fluctuate based on updated data on receipts and expenditures. Also, importantly programs funded through the Highway Trust Fund are only authorized through October 29, 2015. Although Trust Fund balances are currently expected to be sufficient to avoid the potential of cash management until that time, should the authorization for these programs lapse on October 30, the Department will be unable to obligate new expenditures from the Highway and Transit programs, impacting reimbursements to States other entities.

Updated: Wednesday, September 16, 2015
- See more at: https://www.transportation.gov/highway-trust-fund-ticker#sthash.mQpGsjN1.dpuf15

Exhibit 2


MICHIGAN DEPARTMENT OF TRANSPORTATION
2015-2019 FIVE-YEAR TRANSPORTATION PROGRAM
Approved by State Transportation Commission on January 22, 2015
MDOT
Michigan Department of Transportation

Dear Reader:

I present to you the 2015-2019 Five-Year Transportation Program, a detailed accounting of the Michigan Department of Transportation's (MDOT) stewardship of the highway, bridge, public transit, rail, aviation, marine, and nonmotorized programs. This transportation program represents $8.3 billion in multi-modal transportation investments over the next five-year timeframe. MDOT is determined to provide the highest quality integrated transportation services for economic benefit and improved quality of life in the safest and most efficient way possible.

As you may know, additional funding for transportation improvements continues to be an issue at the national and state levels. MDOT's role is not to dictate how transportation should be funded, but rather to raise awareness of the needs and consequences of our infrastructure's deteriorating condition. It is our responsibility to provide the greatest return on investment to Michigan's taxpayers and businesses. In order to accomplish this, MDOT annually updates its Five-Year Transportation Program, which provides information on multi-modal revenues available, expected investments, performance measures, and a list of planned road and bridge projects.

MDOT consistently works to deliver the program in the most effective and efficient way possible. The department has worked hard to become better, faster, cheaper, safer, and smarter. From 1997 to today, MDOT's workforce is 26 percent smaller. Some of MDOT's other recent efficiency achievements include:

- *Closing eight facilities and reducing staff*
- *Cutting debt by refinancing bonds and accelerating contractor payments by improving financing processes*
- *Reducing costs and speeding communication with technologies:*
  - *Pioneering "paperless" construction contracts and project designs, or "e-Construction"*
  - *Conducting training through webinars and virtual meetings*
  - *Improving data collection and automating construction manuals*
  - *Increasing social media communications, including sharing traffic and construction news via Facebook, Twitter, YouTube, and the Mi Drive traffic information website and smartphone app.*

Read more about MDOT efficiencies on the department's website at www.michigan.gov/roadfunding.

Thank you for your interest in the Five-Year Transportation Program.

Sincerely,

Kirk T. Steudle
Director

2015 - 2019 FIVE-YEAR TRANSPORTATION PROGRAM

M-50 bridge slide over I-96

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M-50 bridge slide over I-96 in Kent County

Reinventing Infrastructure for Tomorrow: Major Projects and Initiatives

Today's global economy requires a safe and efficient global transportation network to move people and goods. The network includes a variety of transportation modes: aviation, rail, marine, highways, transit and pathways for bicyclists and pedestrians. The Michigan Department of Transportation (MDOT) is working to improve the state's portion of the global transportation network to further bolster Michigan's position as a major player in the world economy. This effort aligns with Gov. Rick Snyder's strategy to reinvent Michigan by stimulating economic growth and job creation.

MDOT strives to promote and build a highly integrated transportation network that will produce efficiencies and maximize the investment of public funds. There are large infrastructure needs for all transportation modes, and funding these needs will continue to be challenging.

Moving Goods

Michigan is a prominent exporter, ranking eighth in the United States. In 2013, Michigan exports totaled more than $58 billion. Almost half of Michigan's economy depends on foreign trade.

In addition to producing and exporting goods, Michigan plays an important role in moving them. In 2012, more than 34.8 percent of total U.S.-Canada trade passed through Michigan, and more than 51 percent of total Canada-Mexico trade. Another $20.3 billion in trade between the United States and the rest of the world moved through Michigan.

Several bridge, highway, rail and airport projects in this five-year program will enhance Michigan's capabilities as a key link in the global economy. By improving Michigan's infrastructure and the interfaces between transportation modes, the state will become increasingly attractive as a site for logistics and supply chain assets. These assets are vital to helping businesses move goods effectively, efficiently and on time.

A linchpin is the New International Trade Crossing (NITC) connecting Detroit and Windsor, Ontario. The bridge will feature freeway-to-freeway connections between the United States and Canada, and provide needed redundancy at a critical link in the cross-border logistical chain for goods hauled by truck. On the U.S. side, NITC will connect to I-75, which, along with I-94, has the highest truck volumes in the state. Major improvements planned for I-75 and I-94 will ease the flow of traffic through these two corridors.

Rail also is crucial to Michigan. The state has the 12th-largest rail network in the country, with almost 3,600 miles of track, and is part of freight corridors that pass through Canada, Ohio and Chicago. The proposed Continental Rail Gateway would provide a new rail tunnel underneath the Detroit River to handle modern rail cars that cannot pass through the existing underground rail tunnel. This project would help solidify Michigan's role as a logistics hub when new ships designed to take advantage of the Panama Canal's recent enlargement begin delivering cargo to Halifax, Nova Scotia, and Montreal, Canada. Another project, the Detroit Intermodal Freight Terminal (DIFT), will consolidate several intermodal freight terminals in southeast Michigan and improve the efficiency of shifting cargo from one rail line to another, and from rail to truck.

Airports are important links in the global transportation network. In 2013, Michigan airports moved about 40 million pounds of cargo. This is accomplished by both dedicated carriers (FedEx, UPS) and commercial airlines moving cargo in the "belly" of aircraft (known as belly cargo). MDOT is working with airports to improve cargo facilities and identify supply chain/logistics opportunities that aviation can support.

Michigan has about 90 port facilities, 40 of which primarily move freight. Most of these facilities are privately owned and operated, but MDOT ensures that highway access to them is maintained and efficient.

As Michigan continues to reinvent itself to create new jobs and economic growth, a key component remains a modern and well-maintained transportation network that moves both people and goods dependably and efficiently. Following is an update on ongoing and future projects to achieve this network for moving goods.

New International Trade Crossing (NITC)

The NITC project is a new freeway-to-freeway border crossing system between Detroit, Michigan, and Windsor, Ontario. This system will improve the flow of international trade between the United States and Canada at the busiest border crossing between the two countries.

The project has three primary elements: a new Detroit River crossing (bridge), new state-of-the-art border inspection areas on each side of the river for the U.S. and Canadian border services agencies (plazas), and direct connections to

highway systems in each country (I-75 in the United States and Highway 401 in Canada via the new $1.4 billion Rt. Hon. Herb Gray Parkway).

Canada has agreed to finance Michigan's NITC project components. This investment will be used for real estate purchases, utility work, construction of an I-75 interchange and local road improvements. The agreement ensures that at least $550 million is spent in Michigan and that the funds are eligible to help match federal aid for other critical highway projects across the state that are part of MDOT's 2015-2019 Five-Year Transportation Program. The funds will be repaid from toll revenue generated after the new bridge opens.

On June 15, 2012, an interlocal Crossing Agreement was signed by Gov. Rick Snyder and Canadian officials to provide a framework for a Canadian Crossing Authority (now known as the Windsor-Detroit Bridge Authority, or WDBA) to finance the new crossing under the oversight of a jointly established International Authority. The International Authority will have three members appointed by Canada and the Crossing Authority, and three members appointed by Michigan. Design, construction, operation and maintenance of the NITC will be performed by a private entity through a public-private partnership (P3) agreement.

All environmental clearances in the United States and Canada have been secured. A presidential permit for the proposed bridge was applied for in June 2012 and issued by the State Department on April 12, 2013. The U.S. Coast Guard permit was issued on May 30, 2014.

On July 30, 2014, Gov. Rick Snyder and Lisa Raitt, Canada's Minister of Transport, announced appointments to the International Authority that will oversee construction of the NITC, as well as oversee and approve key steps in the P3 procurement process for the new Windsor-Detroit bridge crossing. It also will monitor compliance of the WDBA with the Crossing Agreement signed by Canada and Michigan.

Also on July 30, 2014, Minister Raitt of Transport Canada announced appointments to the Board of the WDBA for the positions of president and chief executive officer, chairperson of the board of directors, and two directors. WDBA, created in 2012 and Canada's newest Crown Corporation, will manage the procurement process for the design, construction, operation and maintenance of the new bridge through a P3. It also will oversee the work of the P3, manage the concession agreement and payments, and set and collect tolls.

Federal Highway Administration (FHWA) authorized right-of-way and design activities for the NITC project in 2013. Implementation of this project will be complex, lengthy, and must comply with the Crossing Agreement. Procurement for the P3 concessionaire will take approximately two years, with construction taking another four to five years. The NITC is anticipated to be open to traffic in 2020.

Detroit Intermodal Freight Terminal (DIFT)

Intermodal capacity in southeast Michigan is inadequate and rail freight movement is inefficient. Freight destined for Detroit sometimes passes through the city by rail and then is trucked back to Detroit from other cities like Chicago. The DIFT project in southwest Detroit will help correct this situation by enhancing truck-to-rail and rail-to-truck intermodal freight operations at the Livernois-Junction Rail Yard.

The DIFT project comprises many individual projects that will be constructed over a 10 to 15-year time frame. Design for the Delray Project and design and construction on the West Detroit project are ongoing. Preliminary plans for the Delray interlocking improvement project, which is the railroad's top priority, have been prepared and design of the West Detroit connection project is complete with construction under way. These two projects will greatly improve rail transportation in Michigan.

Modernizing the I-94 and I-75 Corridors

The I-94 and I-75 corridors are crucial segments of Michigan's portion of the global transportation network. I-94 carries more than 20 million tons of freight annually valued at $28.7 billion, while I-75 carries 18.5 million tons of freight annually valued at more than $26 billion. The corridors are major trade routes for goods moving across the Ambassador Bridge in Detroit and the Blue Water Bridge in Port Huron. The flow of commodities through these corridors is expected to increase with the completion of the NITC, DIFT, and Continental Rail Gateway tunnel projects.

The section of I-94 through midtown Detroit needs to be reconstructed to improve safety, traffic flow, pavement and bridge condition, freight mobility, and local access to the freeway.

The project will modernize a 6.7-mile section of critical infrastructure that was built in segments more than 55 years ago. It will add continuous service drives linking the community with sidewalks along the service drives and across bridges. The 2015-2019 Five-Year Transportation Program invests $390 million to begin program manager contracts, utility easements, opportunity right-of-way purchases, design of nine modernized bridges, and construction of eight of these bridges within the corridor. Design, utility relocation and right-of-way purchases also will begin on the roadwork from Conner Avenue to Chene Street. Eighty percent of the project cost is for preservation, including reconstructing existing freeway, overpasses and utilities. Bridge construction is planned in Fiscal Year (FY) 2017 for six bridges over I-94 (Gratiot Avenue, Cadillac Avenue, Chene Street, Cass Street, Second Street and Mt. Elliott). In 2019, repairs are planned for the Dequindre Bridge, along with new structures and ramps to eastbound and westbound I-75 and construction of frontage roads.

Similarly, I-75 in Oakland County has an 18-mile section that was built in segments 40 to 56 years ago. These sections of freeway have never been reconstructed and need drainage, geometric and modernization upgrades to improve safety. In the 2015-2019 Five-Year Transportation Program, $208 million will begin program manager contracts, right-of-way purchases and reconstruction. Ninety percent of the project costs are for road and bridge preservation. In 2016, construction is planned for the I-75 interchanges with Square Lake Road and Adams Road. In 2018, construction is planned for the I-75 segments from Wattles Road to Coolidge Road.

Willow Run Airport

Willow Run Airport is located in Wayne County and, like Detroit Metropolitan Airport, is governed by the Detroit/Wayne County Airport Authority. Long neglected, it is now being recognized as a valuable complement to Detroit Metro. Willow Run has a good location, on I-94 west of Metro Airport, and the concept of an Aerotropolis has been identified as a key component in accelerating growth in southeast Michigan. The goal is to develop the area between and surrounding Detroit Metro and Willow Run airports into a global logistics hub for the movement of people, products and information. Over the long term, the Aerotropolis (now known as VantagePort) is projected to attract more than 60,000 jobs to the region and more than $10 billion of additional annual economic activity with an aggressive business attraction effort. Making Willow Run of greater value to the Aerotropolis requires modernizing and repairing its runways, taxiways and aprons, plus other airport capital improvements.

In 2014, Willow Run received approximately $23.5 million in federal, state and local Airport Improvement Program (AIP) funding to repair the airport's primary runway. An additional $20 million in AIP funding will be requested in FY 2014-2016 to build a new parallel taxiway for the repaired 5R/23L runway.

Starting in FY 2015, the airport received support from both MDOT and the Michigan Economic Development Corp. to begin an environmental assessment for the repair of runway 9/27. Once completed, these projects will elevate the handling of air freight in southeast Michigan to new heights, creating new job opportunities and making Michigan a leader in air freight to Europe and east Asia.

Future Initiatives: Continental Rail Gateway

The Continental Rail Gateway project is a public/private partnership that would build a new rail tunnel under the Detroit River, between Detroit and Windsor, to handle modern rail cars that existing tunnels cannot. This project would help solidify Michigan's role as a logistics hub when new ships designed to take advantage of the Panama Canal's recent enlargement begin delivering cargos to Halifax, Nova Scotia, and Montreal, Canada. Together, the Gateway and DIFT projects will enhance freight movement in the Detroit area. These two projects also have the potential to reduce road congestion by minimizing delays at grade crossings, and improving the efficiency of shifting cargo from one rail line to another, and from rail to truck. MDOT plans to invest $10 million in the tunnel project. Construction is estimated to start in FY 2015.

Moving People

Giving people more transportation options is a high priority for MDOT. Increased connectivity between modes provides more choices and a more effective transportation network.

MDOT continues to partner with Amtrak on the Wolverine, Blue Water and Pere Marquette passenger rail lines that connect to 22 Michigan communities and Amtrak's national network. Nearly 800,000 passengers traveled on Amtrak trains in Michigan in 2014. MDOT recently began the process of updating 135 miles of state-owned track that will enable Amtrak trains to travel at higher speeds between Detroit and Chicago. Other improvements will provide connections for rail, intercity bus and local transit, including installing a connection track to provide direct service between Dearborn and Detroit; completing new facilities at Troy/Birmingham, Grand Rapids, Dearborn and East Lansing; and planning new intermodal facilities in Ann Arbor and Detroit.

Many people rely on buses for transportation. MDOT works with 117 public transit providers across the state who served more than 97 million passengers in 2012. To move people more quickly, Grand Rapids recently began operation of the state's first bus rapid transit (BRT) system, the Silver Line, which will mature over the course of this five-year program. Analysis has begun on their second proposed BRT project, the Laker Line. A BRT also is under development in the Lansing-East Lansing area. The Regional Transit Authority (RTA) of Southeast Michigan recently adopted BRT as the locally preferred regional transit alternative for Woodward Avenue from Detroit to Pontiac, which has cleared the path for environmental analysis to begin. The RTA has also begun analysis of regional rapid transit alternatives for Gratiot and Michigan avenues and will be focusing on coordination of existing bus transit services in Wayne, Oakland, Macomb and Washtenaw counties.

The M-1 streetcar project along Woodward Avenue in downtown Detroit is under construction and streetcar operations are expected to begin in early 2016.

Improvements will continue for Michigan's commercial airports, which served more than 37 million passengers in 2013. For Ann Arbor and Lansing-area residents planning to fly out of Detroit Metropolitan Airport, an option for getting to the airport is the Michigan Flyer: Air Ride. A continued focus on access and linkages with ground transportation providers will enhance both options and efficiency for air travelers.

The Complete Streets initiative is aimed at making Michigan's transportation network work for everyone, with an emphasis on increasing opportunities and safety for those who travel by bike or foot. This requires being sensitive to removing obstacles to travel, as well as making simple improvements that improve safety for all users. The types of facilities that may be needed are dependent on context but may include things like better access to transit stops, bike parking, pedestrian signals and crosswalk markings, bike lanes, and connected networks for travel between places and within a community. MDOT has been proactively supporting this concept and already has more than 3,000 miles of wide, paved shoulders and 40 miles of marked bicycle lanes on state highways. MDOT also partners with local

agencies and other state agencies to expand the shared-use path network across the state.

Following are some of the projects that will create a more integrated and modernized transportation system to enhance connectivity and mobility.

M-1 Rail Streetcar

Working with the state and community partners, M-1 Rail – a 501c3 nonprofit – is developing a streetcar line that will become the centerpiece for economic development and future connectivity in the Detroit region. The project is an unprecedented public-private partnership, funded by $110 million from private philanthropic investments, $10 million from MDOT, and $25 million in Federal Transit Administration (FTA) funds.

M-1 Rail will be a 3.3-mile, 11-station light rail/streetcar system connecting key points and destinations along Woodward Avenue in Detroit's Central Business District to the New Center/North End district. The Woodward Avenue corridor provides a direct link to 125,000 jobs and 275,000 residents. The streetcar will improve mobility and be a catalyst for continued economic growth and job creation. It will connect to multiple modes of transportation, including the Amtrak station, and become the first piece of a more robust, coordinated transit strategy for Detroit and the region.

Construction has begun and is proceeding consistent with its schedule. Costs are estimated at $135 million to $145 million. MDOT's investment in M-1 Rail includes technical assistance and coordinating design and engineering with the department's reconstruction of Woodward Avenue from Chandler Street to Sibley Street in 2014. Streetcar operations are expected to begin in early 2016.

M-1 Rail supports initiatives and strategic investments in infrastructure and transit-related economic development, including enabling support for mass transit through a well-funded RTA. In addition, prior legislative support has enabled M-1 Rail to maximize and leverage private investment in the streetcar line for other connected and coordinated transit projects. M-1 Rail is working with federal, state, regional and city partners to identify transportation projects that can receive up to $60 million federal match, and fully supports efforts to develop a coordinated regional transit system.

Grand Rapids-Area BRT

The Rapid's Silver Line connects Grand Rapids, Kentwood and Wyoming, mainly servicing the Division Avenue corridor with 33 stations along 9.6 miles. The Silver Line is expected to reduce travel times by up to 40 percent by using a dedicated bus-only lane and signal priority during peak travel times. It is operated by the Interurban Transit Partnership, also known as the "The Rapid," which operates transit services in Grand Rapids and five adjacent communities. The Rapid expects an increase in ridership of 40 percent.

The project is Michigan's first BRT line. The Silver Line operates as an express service, with minimal stops and traffic signal priority. It coordinates with local buses and intercity buses at the Rapid Central Station. Electronic signs in shelters provide riders with real-time information. Traffic signals hold green so that the BRT can move through the signal if the light is changing.

Future Initiatives: RTA

An RTA was recently established for southeast Michigan, organized under Public Act 387 of 2012. The RTA comprises Wayne, Oakland, Macomb and Washtenaw counties. It is governed by a 10-member board with two representatives from each of the participating counties, one representative from the city of Detroit, and one non-voting member appointed by the governor who acts as chairperson. The RTA is charged with coordinating public transit services in the four counties. This includes developing a single master transit plan and coordinating the operating and capital plans of all transportation agencies and authorities in the southeast Michigan region.

Transportation Funding Challenges

January 2015 Update:

After the release of the preliminary draft of the 2015-2019 Five-Year Transportation Program on Dec. 5, 2014, the Michigan Legislature worked toward a solution to the projected state shortfall of transportation funds. The agreement struck in the early morning of Dec. 19 involves a multi-faceted plan to improve transportation funding, as well as funding for schools and local municipalities. The intention behind the ballot measure and linked bills is to address the growing need for road and bridge funding, protection for school and community funding, and tax relief for lower-income Michigan residents. The ballot measure also would mean that taxes recovered from transportation-related activities would go to transportation purposes.

The agreement calls for the Michigan voters to decide in a special election on May 5, 2015.

If approved by a vote of the people, the ballot proposal would:

- Remove the sales tax on gasoline, which currently goes predominantly to schools and local municipalities.
- Increase the sales tax from the current 6 percent to 7 percent.
  - Dedicate a portion of the additional sales tax revenue to the School Aid Fund (to be used exclusively for school districts and community colleges)
  - Dedicate a portion of the additional sales tax revenue to revenue sharing with townships, cities, and villages

If this ballot proposal is passed by voters in May, a package of approved bills would change the tax structure on both gasoline and diesel fuel that are tied to the ballot outcome. The fuel tax and registration changes in the bill package would only go into effect if the ballot measure passes. If the ballot measure fails, these changes would not happen.

As part of this bill package, fuel taxes would cease on a per gallon basis and instead be based on the wholesale price of the fuel, beginning in October 2015. A new rate would be announced every year on Oct. 1. Again, sales taxes on fuel would be dropped as part of the sale tax ballot measure. The new rates on October 2015, if the ballot measure passes, are estimated to be about 41 cents for gasoline and 46 cents for diesel. The real per gallon rate would be tightly controlled by limits on the annual rate of change. After the initial switch in October 2015, the rate would go up by the same percentage as the Consumer Price Index (CPI) for Detroit. In times of high fuel prices, the tax would not go up by more than 5 cents. Over the long term, the fuel tax rate would not go up faster than the CPI, no matter what the fuel price does.

Other bills tied to the success of the ballot measure include:

- Vehicle registration changes for regular vehicles and for heavy trucks. An additional registration fee also would be added to electric and hybrid vehicles. These registration increases would fund road and transit improvements.
- Reforms for competitive bidding and warranty requirements that would expand those already in use at MDOT to be used in local municipalities as well.
- Restore the 20 percent Earned Income Tax Credit for low-income individuals.

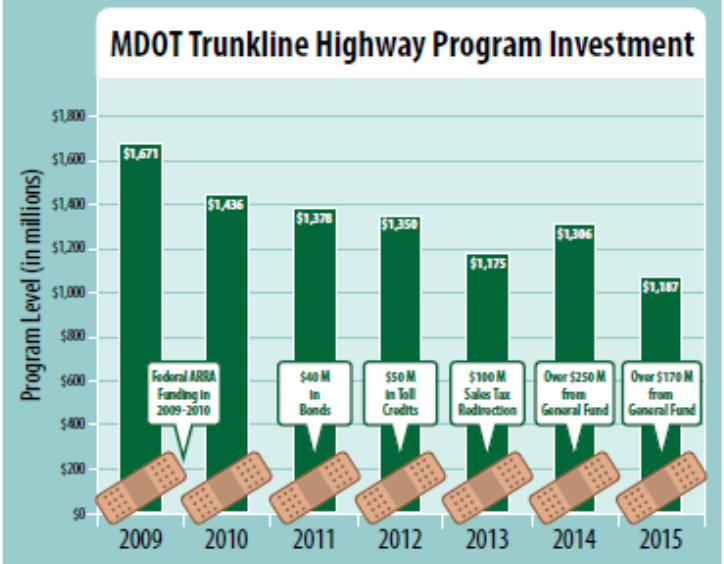
Federal and State Funding Uncertainties

Michigan faces many challenges in delivering sustainable transportation infrastructure improvements and services over the next five years. Two of the most important challenges are declining state transportation revenue and uncertainty in long-term federal funding.

Transportation agencies throughout the nation continue to struggle with the uncertainty surrounding federal investments in surface transportation. Legislation enacted reauthorizing federal highway and transit programs and funding, called the Moving Ahead for Progress in the 21st Century Act (MAP-21), expired at the end of FY 2014. History suggests that federal surface transportation programs could be operated for the foreseeable future through a series of short-term extensions of MAP-21. Following the expiration of the previous two long-term reauthorization bills that preceded MAP-21, federal programs and funding were authorized through a total of 23 short-term extensions that covered 56 months. The first short-term extension of MAP-21 was approved by Congress to continue federal programs and funding through the first eight months of FY 2015.

The federal Highway Trust Fund (HTF), which supports investments in highways and transit, continues to experience a significant structural deficit. Current federal highway and transit funding levels are projected to exceed available transportation revenue by an average of $15 billion per year for the next five years. This structural imbalance in the HTF has been a source of considerable uncertainty over the past several years. On five different occasions since 2008, Congress has either tapped the federal General Fund or relied on other one-time funding sources to transfer a combined total of $65 billion into the HTF in order to prevent cuts in highway and transit funding. Despite an $11 billion transfer into the HTF in August 2014, the fund balance is once again expected to be exhausted in May 2015. Agreement among policymakers in Congress on a long-term solution to the HTF structural imbalance remains elusive. In addition, there is general agreement among policymakers at all levels of government that current investment levels fall far short of what is necessary to meet the needs of the nation's transportation system. Uncertainty in the future path of federal funding caused by the HTF structural imbalance and the prospect of operating under short-term extensions of MAP-21 will remain big challenges to transportation agencies.

STABILITY NEEDED FOR TRANSPORTATION FUNDING



Every year, gaps in the transportation budget have been filled through the budgeting process. A longer-term fix for funding is needed. Major road and bridge projects take about five years from the planning stage to construction. In order to plan for fixes now, MDOT needs to know funding will be available in future years. MDOT uses its Five-Year Transportation Program to plan what projects can be funded throughout the state. Instability of transportation funds year to year makes planning these projects difficult.

Transportation Funding Challenges
Key Messages

Highway Program

- The Highway Program has not had sufficient funds from gas taxes and vehicle registration fees to match federal aid for several years. These shortfalls have been addressed through a variety of efficiencies, budget adjustments, program reductions, Transportation Economic Development Fund shifts, toll credits, sales tax redirection, and general fund redirections.
- Federal transportation authorization uncertainty: MAP-21, the federal highway and transit legislation, expired on Sept. 30, 2014, although it has been extended through May 2015.
- The HTF, which is the main source of federal highway and transit funding, is still reliant on infusions of funds because outlays continue to outpace revenues.
- Michigan will experience substantial decline in road and bridge system condition, service level, and reliability if funding is not increased at the federal and state levels.

Passenger Transportation Program

- Projected state revenues over the five-year time frame are not adequate to maintain even the current level of support to local agencies. FY 2015 is dependent on General Funds to access all available federal funds. Without supplemental General Funds in the out-years of the program, federal funds may be left on the table.
- Programs already have been cut and reduced to divert available revenues to maintain essential services. Capital investments have been deferred to maintain operating programs.
- In this Five-Year Transportation Program, two somewhat conflicting scenarios exist:
  - Federal formula funds are lower under MAP-21 and the Comprehensive Transportation Fund (CTF) is not keeping up with the cost of maintaining service, which will result in a continued slow decline of service levels and infrastructure state of good repair in many areas of the state.
  - In some areas of the state, there is likely to be commitments of federal discretionary funds and/or increased local funds to maintain or even expand service, but the CTF is not able to respond, so the opportunity to reverse the slow decline in these areas may be lost.

Aviation Program

- Aeronautics programs are being negatively impacted by the continued decline in aviation fuel tax revenues.
- The current $.03 per gallon excise tax rate has not been adjusted since its inception in 1929.
- Over the five-year program, a widening gap between projected revenues and identified need will reach $80 million annually.
- Declining system condition will lead to increasing costs over the five-year program and beyond.
- Lack of state revenue will continue to place an increasing burden on local communities for maintaining airport infrastructure.

Rail Program

- The bulk of federal and state funds will be invested to preserve and enhance intercity passenger rail services in Michigan.
- A significant portion of the rail investments in this five-year time frame will be funded with federal grants received previously under the Passenger Rail Investment and Improvement Act (PRIIA) of 2008.
- Beyond PRIIA funding, MDOT has very little ability to fund additional passenger rail capital improvements. In addition, it is uncertain if MDOT's revenues will be able to maintain the current operating contract for intercity passenger rail services or continue to fund rail freight programs.

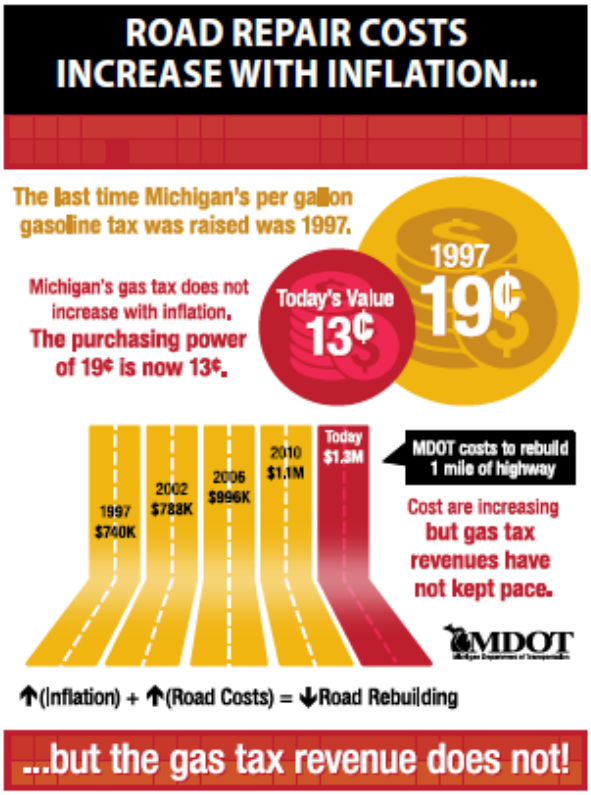
Pennsylvania, Massachusetts, Arkansas, New Hampshire, Virginia, and Wyoming are among several states to enact transportation funding initiatives to generate more transportation funding. These states are opting to increase revenues for transportation through taxes, tolls and other measures. These states are acting not just because of uncertainties in federal funding but also growing infrastructure needs nationwide. MDOT's Highway Program is predicated on the availability of federal funds. If there were to be a shortage of federal funds, it would certainly create a great detriment to Michigan highway and transit programs.

Michigan state transportation revenues have been relatively flat for the past several years. Many policymakers at the federal and state levels have acknowledged the need for additional revenues to invest in maintaining and improving transportation infrastructure. Long-term funding solutions and stability are needed to plan for capital investments for all transportation modes. Short-term budget solutions in recent years have filled the gap between the revenues generated through gasoline and vehicle registration fees, and the funding levels needed to match federal aid.

Current revenues are insufficient to meet program needs, such as preservation of roads and bridges and continuation of transit services and bus replacement. Many transportation projects require multiple years of planning to complete design and construction. Therefore, more stable funding is needed to adequately plan improvements. Increased funding and stability in funding are needed for all transportation modes to reinvent and modernize Michigan's infrastructure.

Highway Program investment levels are based on the assumption that all federal aid will be matched. For FY 2016-2019, there is a state revenue shortfall of approximately $117 million to $133 million per year. This equates to a possible annual loss of $665 million to $750 million in federal revenues.

FY 2016-2019 Annual Shortfall	
State Revenue Shortfall	$117 million - $133 million per year
Federal Aid Lost to MDOT Highway Capital Program	$665 million - $750 million per year



The infographic above depicts the decline in purchasing power of the state gasoline tax, due to the lack of indexing to inflation. More fuel-efficient vehicles also contributed to declines in state revenues. Federal gasoline and diesel taxes also are suffering from similar declines in purchasing power. Costs continue to drive upward, while gasoline revenues in particular have not kept pace.

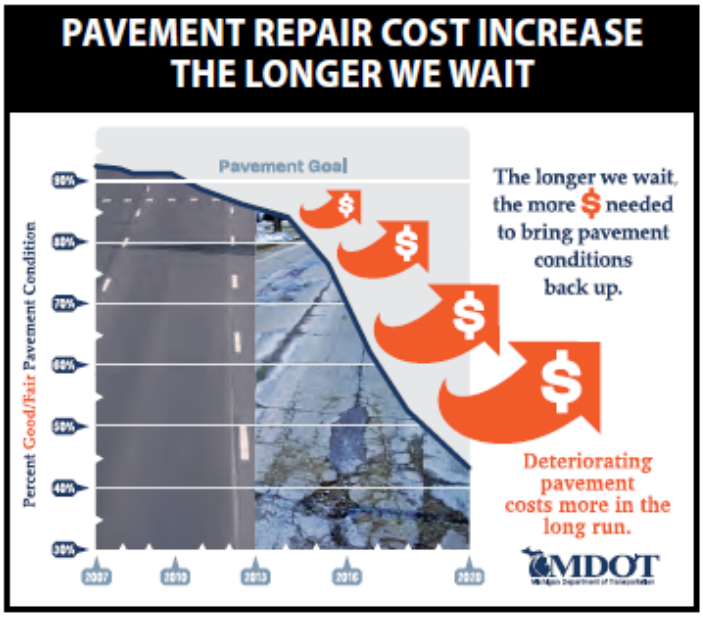
Transit funding also is suffering from the same declines since federal and state funding for transit also is allocated from the same federal and state gas taxes. Federal funding to transit agencies in Michigan has dropped considerably under MAP-21. Michigan received more than $50 million in discretionary bus and bus facility funding in 2012, while in 2013 that funding was reduced to less than $5 million. Funding for state assistance for passenger rail through the Federal Railroad Administration comes from the General Fund, and is even more uncertain in the near future given the intense focus by policymakers to reduce the federal deficit.

State funding for transit, allocated through the CTF, also is projected over the five-year time frame to have inadequate state revenues to maintain even the current level of support to local agencies.

On the aviation side, the Federal Aviation Administration Modernization and Reform Act, signed into law in February 2012, is a four-year reauthorization providing stable and predictable funding through FY 2015. Funding for the largest capital program, the AIP, was reduced by 5 percent under the legislation. Another notable change is that the new authorization bill did not continue the 95 percent federal share for most airports, so the federal share for projects at these airports has dropped back to 90 percent. Lack of state revenue will continue to place an increasing burden on local communities for maintaining the airport infrastructure.

Transportation Needs Keep Growing

MDOT continues to focus on improved safety, reliability, efficiency, and innovation as good stewards of the funding entrusted to the department by Michigan taxpayers. However, it will take more than that to overcome the challenges Michigan's transportation system faces. Without additional investment, Michigan's roads and bridges will fall further into disrepair, dragging down Michigan's economy and quality of life. Transit and rail investments, approved by Michigan taxpayers to improve local economies, will need to be balanced with the rest of the state's transit commitments. There is no easy solution, but Michigan faces a choice of paying more now or a lot more in the future. To learn more about Michigan transportation funding and needs, go to the MDOT website: ***http://www.michigan.gov/mdot/0,4616,7-151-68212_64050_64074_64091---,00.html*** .



The MDOT Highway Program is based on implementation of the goals and policies outlined by the State Transportation Commission (STC), emphasizing an asset management approach to preserving the transportation system and providing safe mobility to travelers. Road and bridge preservation projects included in the five-year program are prioritized based on approved asset management strategies, with a specific focus on doing the right repair at the right time to extend the life of Michigan roads and bridges and keep them in good condition.

MDOT pavement programs include a combination of long-term fixes (reconstruction), intermediate fixes (resurfacing/repair), an aggressive Capital Preventive Maintenance (CPM) Program, and routine maintenance of the system. Using a mix of fixes and a mix of preventive maintenance, resurfacing and reconstruction optimizes the preservation, and timely replacement of assets for available highway funding is the most cost-effective practice. It's more cost-effective to keep a pavement in good or fair condition rather than repairing it when it becomes poor. Despite these efficient approaches for pavement repair, over the last three years, the percent of pavements in good or fair condition has declined by 1.2 percent per year. At its peak in 2008, trunkline pavement condition was 92 percent good or fair. In 2014, it is 85 percent good or fair.

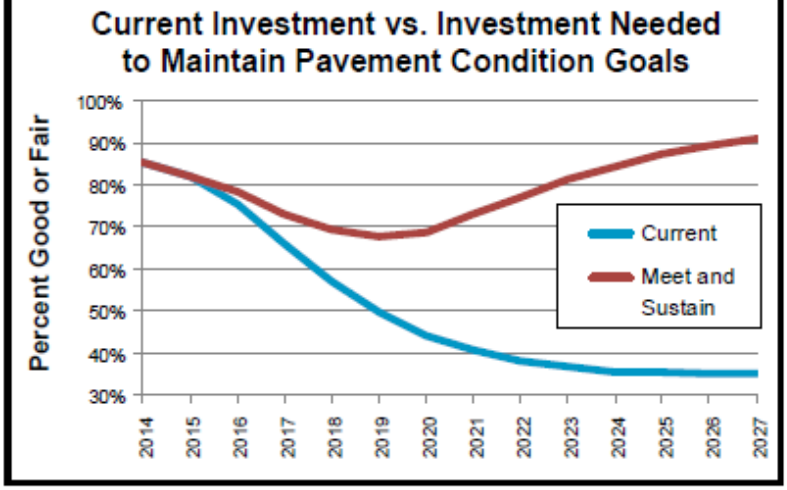
What these estimates don't fully depict is that the number of pavements in fair condition declining to poor condition will markedly increase in the coming years. The most recent estimate forecasts the rate of pavement deterioration on the trunkline to rise significantly, to nearly 7 percent annually over the next six years. This equates to about 2,000 lane miles deteriorating into poor pavement per year. This decline is depicted on the graphic on the next page. As these pavements decline quickly, there are fewer opportunities to invest in lower-cost preventive maintenance-type fixes, and only more costly reconstruction options will be effective. Reconstruction work costs approximately three times the amount of rehabilitation work and 17 times the cost of preventive maintenance.

Road Repair

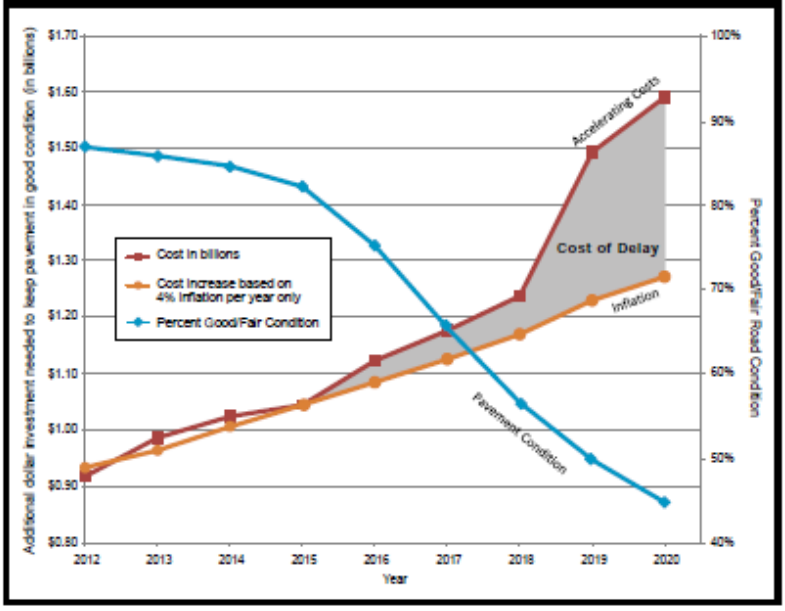
The Highway Program uses a pavement forecasting tool that forecasts pavement conditions for the trunkline network based on funding scenarios. The scenarios presented in the graph below represent two possibilities for funding into the future, featuring two very different paths. The blue line represents forecasted pavement conditions based on state investment levels that are only enough to match expected federal aid. MDOT's Highway Program and maintenance needs will outpace funding levels at this investment level, and pavement condition levels will fall to approximately 40 percent good or fair. The red line represents an additional $1.13 billion annually in state transportation revenue invested in the trunkline system, and would allow the pavement condition to meet and sustain pavement condition goals (90 percent good or fair) by 2027.

As the rate of deterioration increases in the coming years, so does the rate of cost increases associated with necessary pavement repairs. The graph on the next page shows the rise in the average annual investment needed to meet pavement condition goals. It estimates the portion of increased cost due to inflation, as well as the portion due to continued decline in pavement condition. Pavement condition continues to decline due to insufficient funding to keep good/fair pavement in a state of good repair, resulting in the use of

MDOT STATE TRUNKLINE PAVEMENT CONDITION FORECAST



TRUNKLINE PAVEMENT CONDITION VS. FUNDING NEED



lower-cost repairs and preventive maintenance fixes. Soon, only the higher-cost replacement projects will be an option.

Michigan is facing a critical decision, similar to a homeowner with a balloon mortgage. While the interest rate may have been modest at first, in time it will increase significantly. The problem can either be resolved now or delayed - resulting in paying far more later.

Each year that funding these pavement improvements has been delayed has equated to approximately $60 million in additional costs per year (prior to 2013) due to inflation and pavement deterioration (see graphic above). However, as costs and deterioration rates increase, those costs double to an additional $120 million per year.

Transit/Rail

The public is asking for increased local transit services to help improve their quality of life. There are efforts under way at the local level to expand and enhance local transit options in anticipation of federal and local investment. MDOT is supporting these efforts as much as possible with staff resources, planning funds, Act 51-required match, and local bus operating assistance. However, the first priority is to continue the current transit services, which leaves very little CTF available for expansion projects.

Special circumstances have allowed MDOT to support some new projects, such as:

Grand Rapids – The Rapid's Silver Line BRT: The Rapid's Silver Line connects Grand Rapids, Kentwood and Wyoming and mainly services the Division Avenue corridor with 33 stations along 9.6 miles. Construction of the Silver Line cost approximately $40 million, with the state providing 20 percent, or approximately $8 million. Operating costs will be about $2.2 million annually and will be covered with fares, a millage and state operating assistance. A local millage increase was approved by voters to support the operation of this project. The Rapid received a special federal grant that the CTF was able to match only because of a 2002 bond issue.

Detroit – Detroit Department of Transportation's (DDOT) efforts to get its bus fleet in a state of good repair (SGR) resulted in successfully bringing 25 percent of a nationwide FTA grant program back to Michigan for replacement buses at DDOT. There are insufficient funds in the CTF to provide the entire required match. General Funds appropriated for rail and transit use in FY 2015 will be used for the majority of the match. The competitive grant FTA will award DDOT in FY 2015 is illustrative of the special grant opportunities that will become available throughout this Five-Year Transportation Program, and in particular with MAP-21's focus on SGR.

In the absence of increased CTF revenues (or annual General Fund appropriations), MDOT will not be able to bring these funds back to Michigan as in FY 2015.

The RTA - Established the institutional capacity to plan and deliver effective regional transit services in southeast Michigan. MDOT provided temporary staff, as well as administrative funds, but the CTF could only cover a portion of the funds needed to administer the RTA. To fill the gap, the Legislature appropriated general funds to cover the rest of the start-up needs. As these are one-time funds, the RTA still needs a long-term funding solution.

However, there are several important projects in differing stages of development that either have received federal planning or construction funds and anticipate local funding that MDOT will not be able to financially support unless state funding increases:

Under Construction

Detroit – M-1 Rail Streetcar: This project is an unprecedented public-private partnership, funded by $110 million from private philanthropic investments, $10 million from MDOT, and $25 million in FTA funds. Costs are estimated at $135 million-$145 million. MDOT's investment in M-1 Rail includes technical assistance and coordinating design and engineering with the department's reconstruction of M-1 (Woodward Avenue) from Chandler Street to Sibley Street in 2014. Streetcar operations are expected to begin in early 2016. Currently, there are no CTF funds available to support operational costs.

National Environmental Policy Act (NEPA) Phase

Lansing - The Capital Area Transportation Authority (CATA) proposes to build an 8.5-mile BRT line from the State Capitol in downtown Lansing, linking Michigan State University (MSU) and downtown East Lansing to the Meridian Mall in Meridian Township. The project would replace CATA's highest ridership line and would include 28 stations, park and ride spaces, off-board fare collection, transit signal priority, and the procurement of 17 new articulated buses. The projected capital costs for the project are $215 million, and the annual forecast for operating costs is $8.7 million. The FTA provided CATA with approval to proceed with the NEPA phase for this project.

Alternative Analysis (AA) Phase

The FTA funded the following AA projects, which is a precursor to receiving FTA construction funds.

- Grand Rapids – The Rapid's Laker Line: The purpose of the Laker Line Study is to identify and implement the transit enhancement strategy that will improve connectivity between downtown Grand Rapids and Grand Valley State University.
- RTA – Woodward Avenue: The purpose of the study is to examine various options to improve and enhance public transit along the Woodward Avenue corridor from the Detroit riverfront to the city of Pontiac.
- Ann Arbor – The Connector: The purpose of the study is to examine various options to improve and enhance public transit from northeast of Ann Arbor to south of Ann Arbor, connecting the campuses of the University of Michigan, downtown, the medical center, the train station, and commercial areas.
- RTA – Michigan Avenue, Gratiot Avenue and M-59: Michigan Avenue and Gratiot Avenue will begin AA in late 2014 or early 2015. The start date for M-59 has not been determined.

The CTF's inability to respond to local financial support of operating cost increases is best demonstrated by recent events at the Suburban Mobility Authority for Regional Transportation (SMART). In order to maintain service, residents passed an increase of nearly double the current millage rate to cover the increased cost of providing service. Local Bus Operating (LBO) assistance is a line item within the CTF that is distributed by formula to reimburse a percentage of operating expenses. Because the voters in SMART's service area agreed to increase the level of local investment in transit, their share of LBO assistance will increase. However, without an increase in the CTF available for the LBO program, this assistance must come at the expense of other transit agencies.

Five-Year Transportation Program Process

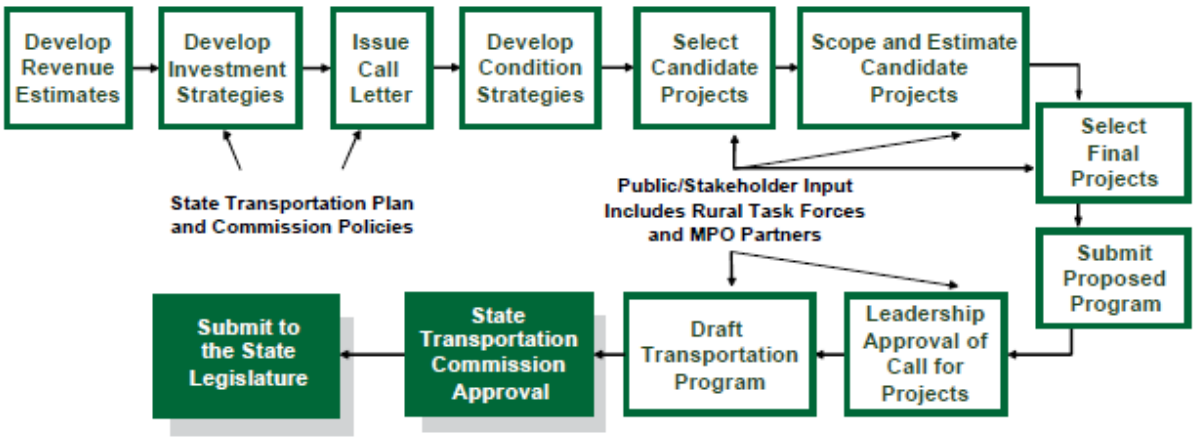
The Five-Year Transportation Program is an essential part of the governor's plan for economic growth for Michigan, and includes planned investments for highways, bridges, public transit, rail, aviation, marine, and nonmotorized transportation. Investments in all of these transportation modes provide important jobs to the Michigan economy, accessibility to urban and rural development, improved safety and efficiency of the transportation network, and enhanced quality of life for Michigan citizens.

The highway portion is a rolling program; each year, the first year is implemented, a new fifth year is added, and program/project adjustments are made to the other years. This document only pertains to that portion of the programs that MDOT delivers. It does not account for programs delivered locally with state and federal funds that are directly controlled by local agencies, such as transit agencies or county road commissions.

The Highway Program development process is a yearlong, multi-stage process as shown in the following flowchart.

MDOT strives to continually involve the public and stakeholders in development of its programs and projects. The Five-Year Transportation Program process is an important opportunity to implement the vision that citizens and businesses have for Michigan. Transportation projects are often many years in the making, so it is important to engage stakeholders early so that public participation can help shape mutually desired outcomes. The Five-Year Transportation Program creates a continuous, interactive dialogue with the users of the state transportation system to anchor MDOT's project development and delivery systems. MDOT's seven region offices, 22 Transportation Service Centers (TSCs) and statewide planning staff work throughout the year to share project lists with local agencies, stakeholders and the public. Information is presented at rural elected officials' meetings, TSC transportation summits, Rural Task Force meetings, and meetings with legislators. In addition to formal presentations, MDOT staff members informally discuss individual projects within the plan with economic development and tourism agencies, rural planning agencies, metropolitan planning organizations (MPOs), road commissions, local officials, tribal governments, businesses, local nonprofit groups and the general public.

Public participation in MDOT's Five-Year Transportation Program feeds into the State Transportation Improvement Program (STIP). The Five-Year Transportation Program serves as an opportunity for the public to be notified and provide local input to the upcoming STIP. The road and bridge projects proposed in the Five-Year Transportation Program are incorporated into MDOT's STIP. Michigan is required to complete this planning process to receive federal transportation funding.



Public Involvement

MDOT strives to continually involve the public and stakeholders in the development of its programs and projects. The Five-Year Transportation Program process is an important opportunity to implement the vision that citizens and businesses have for Michigan. Transportation projects are often many years in the making, so it is important to engage stakeholders early so that public participation can help shape mutually desired outcomes. The Five-Year Transportation Program creates a continuous, interactive dialogue with the users of the state transportation system to anchor MDOT's project development and delivery systems. MDOT's seven region offices, 22 Transportation Service Centers (TSC) and statewide planning staff work throughout the year to share project lists with local agencies, stakeholders and the public. Information is presented at rural elected officials meetings, TSC meetings, Rural Task Force meetings, and meetings with legislators. In addition to formal presentations, MDOT staff members informally discuss individual projects within the plan with economic development and tourism agencies, rural planning agencies, metropolitan planning organizations, road commissions, local officials, tribal governments, businesses, local nonprofit groups and the general public.

Public participation in MDOT's Five-Year Transportation Program feeds into the biennial State Transportation Improvement Program (STIP). The Five-Year Transportation Program also serves as an opportunity for the public to be notified and provide local input to the upcoming STIP. The road and bridge projects proposed in years one through four of the Five-Year Program are incorporated into MDOT's STIP. Michigan is required to complete this planning process to receive federal transportation funding. MDOT will work with urban Metropolitan Planning Organizations (MPOs), rural transportation agencies and the public over the next several months to arrive at a list of projects to guide investment decisions.

The public review and comment period for the Preliminary Draft of the MDOT 2015-2019 Five-Year Transportation Program was Dec. 5, 2014, through Jan. 5, 2015. On Dec. 5, MDOT placed the document on the MDOT website and issued a news release and e-mail notification to invite comments. The e-mail notice went to state transportation advocacy groups, regional planning agencies, Rural Task Force members and other interested groups. Also available on the MDOT website was an interactive state map feature, which encouraged users to view the Five-Year Transportation Program project list geographically and quickly locate projects by year. The interactive state map website containing the document and the interactive maps received more than 2,700 visits, and the document was downloaded 780 times within the comment period.

MDOT received a total of 20 submitted public comments on the draft program:

- Five comments were directed at poor road conditions and the need for improvement at a variety of trunkline locations.
- Three comments specifically mentioned the poor conditions on ramps and/or poor ramp alignments.
- Two comments suggested that programmed projects in 2017 and 2019 needed to be moved up to current year due to their poor ride quality.
- Two comments suggested the need for funding for ferry service in Chippewa County.
- One comment complained about the complete shutdown of freeways for reconstruction, specifically I-96 in Livonia, being detrimental to the business community and commuters.
- One comment suggested MDOT should advocate more on behalf of commuters through upgrading US-23, the Barton Road interchange, and completing US-127 and US-31 in Berrien County.
- One comment discussed the possibility of using sand instead of salt for winter road treatments.
- One comment focused on possible improvements for the online interactive map of projects.
- One comment asked for more emphasis on MDOT efficiencies.
- One comment suggested the need for a new interchange.
- One comment was focused on gas prices and the "Reality Check" series.
- One comment mentioned a local road network suggestion.

Information and comments received were directed to appropriate MDOT project areas or MDOT region planners. Response letters to individuals were generated to address their area of concern or recognize a comment. Local road comments were forwarded to the appropriate local offices.

MDOT appreciates receiving feedback and looks forward to providing more avenues for public involvement through MDOT's website and social media outlets.

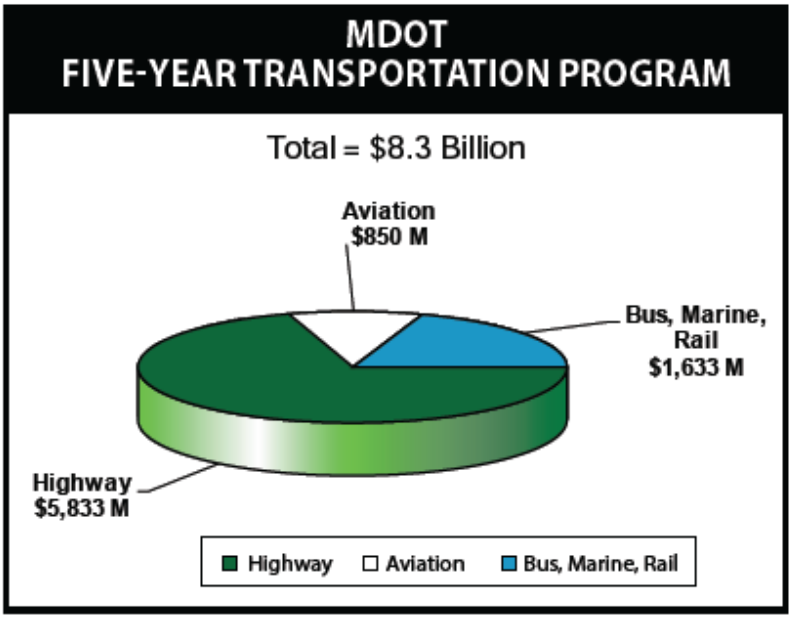
Aerial view of downtown Detroit

Revenue Assumptions and Investment Strategies Overview

Enhancing economic development by preserving and maintaining a safe transportation system remains MDOT's highest priority. This Five-Year Transportation Program invests nearly $8.3 billion in MDOT's transportation system. This includes investments in the Highway, Aviation, Bus, Rail, and Marine programs. A total of $5.8 billion (including routine maintenance) will be invested in the 2015-2019 Highway Program. Over these five years, $850 million will be invested in the Aviation Program and $1.6 billion will be invested in Bus, Rail, and Marine/Port programs (see the following pie chart).

The Highway Program focuses on system preservation through the repair and maintenance of Michigan's roads and bridges. The majority of the Multi-Modal Program concentrates on system preservation as well. Investments in Michigan's transportation system focus on a comprehensive safety program and increased emphasis on mobility and expanded work zone safety efforts. The Five-Year Transportation Program documents that MDOT's investments in the state transportation system directly benefit Michigan citizens by providing them with expanded options, mobility, and access.

M-1 (Woodward Avenue) in Detroit, in poor condition



Highway Program Revenue Assumptions

MAP-21, as mentioned earlier in this document, is the federal authorization for federal highway funding. This legislation expired in September 2014, but was extended through May 2015. The FY 2015-2019 federal-aid revenue estimate is based on MAP-21 estimates of federal funding available for Michigan. Federal funding is assumed to remain flat for FY 2015-2016 and then increase at a 2.5 percent rate in FY 2017-2019. It is projected that $3.9 billion in federal funding will be made available to the Highway Program for this Five-Year Transportation Program.

Public Act 51 of 1951 (Act 51) mandates how transportation funds are distributed and spent between MDOT and local entities. The intent of Act 51 in regard to federal highway aid is to distribute approximately 25 percent of federal aid to local jurisdictions for use on federal-aid-eligible local roads. The remainder is to be used by MDOT. The funds collected from state fuel tax and vehicle registration revenues are deposited into the Michigan Transportation Fund (MTF), the distribution fund for transportation revenues. MDOT receives approximately 39 percent of this fund (known as the State Trunkline Fund, or STF), county road commissions receive 39 percent, and cities receive about 22 percent.

The state revenue estimate is based on MDOT's share of the MTF, as estimated by the Department of Treasury, Economic and Revenue Forecasting Division. Future state revenue is forecast using a long-range forecasting model managed by MDOT's Statewide Transportation Planning Division. It is estimated that $2.4 billion in state revenue will be available for MDOT's Highway Program. This includes $127 million in one-time General Fund redirection to the STF in FY 2015 in order to match all available federal aid. It also includes $46.5 million, which also is a portion of a one-time redirection from the General Fund. This five-year program assumes that state revenues in 2016 through 2020 become available to match federal aid.

Highway Program Investment Strategy

The STC establishes policies, goals, and objectives that provide the basis for highway funding allocation decisions. MDOT developed an investment strategy process to accomplish the effective use of financial resources on the state trunkline Highway Program. The process allocates an investment amount to various program categories (bridge, road, safety, etc.) annually, based on program improvement strategy, goals, and statewide priorities. It sets the level of funding to achieve highway improvement priorities and provides a tool to constrain the overall statewide program against available revenues.

MDOT adopted a pavement preservation formula that allocates funding to its seven regions. The formula weighs four overall factors: pavement condition, eligible lane miles for pavement reconstruction and repair work, usage (average daily traffic volumes), and regional cost. These factors form the basis for how pavement preservation funds are distributed to each region. The formula is updated annually with current pavement condition, traffic, cost, and eligible lane miles.

Bridge funding is distributed to MDOT regions using the bridge preservation allocation formula. It uses the deck area of bridges in each National Bridge Inventory condition to allocate funds to each MDOT region. Funding is split into investment targets for replacement, repair, and preventive maintenance work.

The following table provides the Highway Program investments strategy for FY 2015-2019, assuming funds are available to match federal aid.

Highway Investment Program FY 2015-2019 (in millions)	FY 2015-2019 Annual Average	Five-Year Total
REPAIR AND REBUILD ROADS AND BRIDGES		
REPAIR AND REBUILD ROADS		
Repair and Reconstruction	$260	$1,300
Capital Preventive Maintenance	$93	$464
Operations	$22	$109
Freeway Lighting	$8	$39
Trunkline Modernization	$120	$598
TOTAL - ***Repair and Rebuild Roads***	**$503**	**$2,510**
REPAIR AND REBUILD BRIDGES		
Repair and Reconstruction	$95	$475
Capital and Scheduled Preventive Maintenance	$27	$137
Big Bridges	$30	$157
Special Needs	$6	$30
Blue Water Bridge-Appropriated Capital Outlay Projects	$10	$51
TOTAL - ***Bridges***	**$168**	**$850**
State Road and Bridges Program	NA	$47
Routine Maintenance	$314	$1,568
TOTAL REPAIR AND REBUILD ROADS AND BRIDGES	**$985**	**$4,976**
CAPACITY IMPROVEMENT	$4	$15
SAFETY AND SYSTEM OPERATIONS	**$120**	**$598**
TRANSPORTATION ALTERNATIVES	**$15**	**$62**
ROADSIDE FACILITES	**$3**	**$14**
WORKFORCE DEVELOPMENT	**$7**	**$35**
NON-FEDERALLY FUNDED PROGRAMS	**$27**	**$133**
TOTAL - ***Five-Year Trunkline Program***	**$1,171**	**$5,833**

The FY 2015-2019 Five-Year Transportation Program estimates that investments for the Highway Program total approximately $5.8 billion. This total reflects investments for pre-construction (scoping, design, environmental clearance and right-of-way acquisition) and construction activities. This Highway Program investment will provide Michigan travelers with approximately 120 miles of improved roads per year over the next five years, and repairs to 108 bridges per year. MDOT also will manage its road system by extending the life of approximately 1,000 miles of pavement each year through the CPM Program. Trunkline modernization includes design and construction for the I-75 corridor in Oakland County, and design and construction for the I-94 corridor in Detroit. This document includes a project listing by region for additional projects in major work categories. These projects also can be viewed on a state map and regional maps on the MDOT website at ***http://mdotnetpublic.state.mi.us/fyp/.***

The following graph illustrates the annual Highway Program investments by program categories over the five-year time frame. The annual investments range from a high of $1.22 billion in FY 2016 to a low of $1.1 billion in FY 2017.

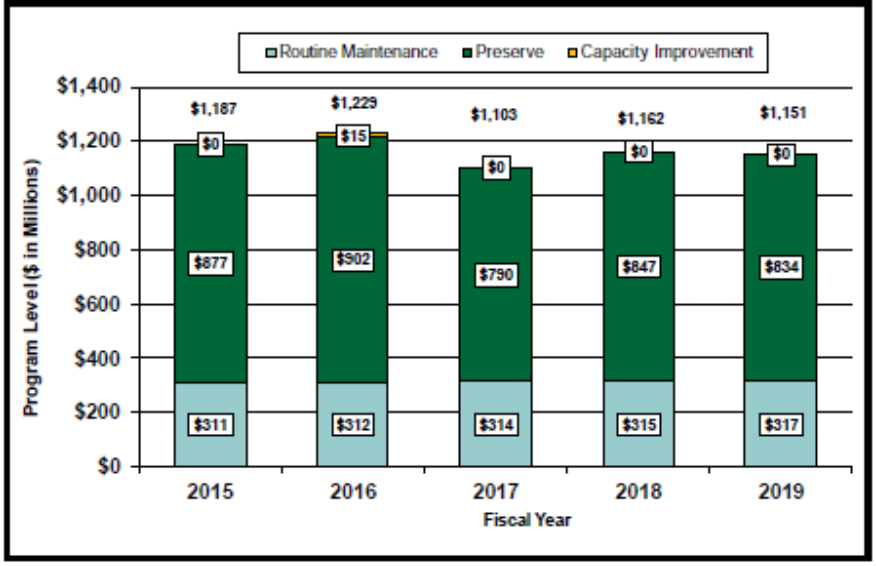
Multi-Modal Programs

MDOT's FY 2015-2019 Multi-Modal Program includes two main areas: public transportation and aviation. Public transportation programs are administered by two offices. The Office of Passenger Transportation (OPT) administers the Bus and Marine programs while the Office of Rail administers the Rail and Port Programs. The Office of Aeronautics administers the Aviation Program. These offices provide capital and operating assistance, technical support, and safety oversight.

The Multi-Modal Program focuses largely on continued safe and secure operation of the existing transportation system through routine maintenance, capital replacement/repair, and preservation of existing service levels. MDOT's approach to the Multi-Modal Program differs significantly from the Highway Program for two main reasons. First, the majority of the infrastructure is owned, managed, and operated by entities other than MDOT. Secondly, state and federal funding that MDOT programs for these modes is only a portion of the total investments made.

The multi-modal portion of the five-year program contains overview information where the modes or programs have similar conditions, and mode-specific information when appropriate due to unique considerations or funding issues.

HIGHWAY PROGRAM INVESTMENT BY PROGRAM CATEGORY FY 2015-2019



Public Transportation Revenue Assumptions (Bus, Rail, Marine, Port)

Public Transportation CTF Revenue Issues

The Public Transportation Program receives most of its state funding through the CTF. Approximately two-thirds of CTF revenues are from the MTF, which is funded by the state motor fuel tax and vehicle registration fees. Therefore, revenue declines that affect the MTF also are felt by the CTF. The CTF also receives revenues from auto-related sales tax revenue, which varies from year to year. Neither the distribution of the MTF to the CTF nor sales taxes to the CTF are constitutionally protected. Appropriation levels vary from year to year.

For CTF revenues, this five-year program is based on the FY 2015 CTF appropriation in Public Act 252 of 2014, and the Michigan Department of Treasury's May 2014 CTF revenue estimate for FY 2016. Based on current FY 2016 revenue estimates, CTF funding available for appropriation in FY 2016 is $11.6 million below the CTF appropriated in FY 2015. The amount available for programming can include the fund balance from prior years. In FY 2015, there was a one-time allocation of $11.1 million in general funds; that amount has not been carried forward into the projection for FY 2016 - 2019. This level of funding going forward is neither sufficient to maintain the current level of service for all CTF-funded programs, nor will it match the federal transportation funds the state expects to receive during this five-year period.

Office of Passenger Transportation (OPT) Program Development

In many ways, development of a five-year program for OPT's Bus and Marine programs is not feasible. The programs cover local transit (bus), marine, and intercity bus, and the vast majority of the projects are selected at the local level, not by MDOT. MDOT makes funding decisions at the "program level." For the most part, these programs are either prescribed by Act 51, restricted due to funding levels, or a response to federal funds awarded to MDOT or local agencies each year. There is very little opportunity for the programming of funds once statutory obligations are met.

The CTF supports the Bus, Marine, Rail and Port programs, placing a high degree of financial pressure on this funding source. Decisions on how to make use of the discretionary funds to support each of these modes are made on an annual basis in reaction to the most pressing need. Because of the funding pressures, it is rare that MDOT makes a multi-year funding commitment from the CTF, other than continuation of the annual programs mandated in Act 51. Therefore, what is presented in this document is MDOT's annual program for FY 2015, the estimated funding available for the remaining years of the program, and a description of the factors anticipated to influence both the funding availability and the annual decisions that will be made over the life of this program.

Local Transit Revenue Assumptions

The programs in this category provide funding for operating and capital support, training, and special projects to local bus operators that service the general public. Assistance also is provided to support transportation services focused on the needs of senior citizens and persons with disabilities, and help meet the transportation-to-work needs of low income individuals. A total of 117 transit providers (78 local agencies and 39 specialized services agencies) in all 83 Michigan counties are provided support under these programs.

Federal funds for these programs include formula and special program funds awarded to MDOT and its subrecipients that are generally rural transit agencies. In the past, these special programs funds were discretionary funds

awarded via congressional earmarks; however, that practice has been replaced by competitive special grant programs through FTA, and on occasion, the FHWA. Although nationwide transit funding levels remain about the same, Michigan's Transit Program could receive substantially less federal funding under MAP-21 due to the uncertainty of being awarded nationally competitive grants. Unless transit systems are able to raise local funds to compensate for declining available federal revenues, the condition of the transit infrastructure will decline.

It is important to note that more than 80 percent of the FTA revenues for local bus systems go directly to transit agencies and are not reflected in MDOT's program. Therefore, when state funds are not available to match federal funds, the full impact is not detailed in this five-year program document. The impact is largely on local programs that are dependent on state revenues to access federal funds. The magnitude and direct link between a shortfall in state revenues and loss of federal funds may not be reflected in this program, but it must be clearly understood that the impacts are significant.

Also part of local transit is the MichiVan Program. MDOT contracts with a private service provider to help organize and sustain vanpools as a commuting alternative. Federal funds for MichiVan come from the FHWA's Congestion Mitigation and Air Quality (CMAQ) Program and are programmed under the Highway Program. A small amount of the CTF also is used each year for MichiVan.

Marine Revenue Assumptions

Under MAP-21, the FHWA Ferryboat Discretionary Program, which in the past supported major capital improvements for Michigan's two rural ferry systems, was replaced with a formula program. While the new FHWA program provides a guaranteed annual allotment to eligible ferry systems in Michigan, the annual funding level for each system is small and inadequate for major capital improvements, such as replacing ferry vessels, expanding terminals or docks, or upgrades. MDOT is working on determining the most effective way to utilize the limited funds to ensure maximum benefit. The federal funds that will come to Michigan under the FHWA program are not shown in the Bus and Marine programs, but are included in the highway portion of this five-year program.

A new FTA ferryboat discretionary program was added under MAP-21; however, the FTA program is aimed at urban systems only and will not meet the needs of Michigan's two rural systems. It is not reflected in this five-year program since there is no way to ascertain if any Michigan system will receive funding under the program.

Intercity Bus Revenue Assumptions

The Intercity Bus Program provides both operating and capital assistance for the intercity network in the state, with a goal to allow residents access to the national transportation network. The Terminal Development Program pays for small projects using only state funds, while the Intercity Services Program is a combination of federal and state funds used for operating expenses and bus purchases in the essential intercity network. Under MAP-21, federal funds should remain at about the same level for the duration of this five-year program. MDOT anticipates state funds to be adequate to support the continuation of the current level of service.

Office of Rail Program Development

Like OPT, the Office of Rail cannot develop a comprehensive five-year program. Much of the Office of Rail's ongoing expenditures will be for operating support, which is calculated annually. Projects funded under most other Office of Rail programs are developed annually as well; many are application-based. Therefore, the Office of Rail scales its efforts to fit available funding. This five-year program details projects that have been funded by prior federal grants and programs, assuming funding will permit continuation to some degree.

Rail Revenue Assumptions

MDOT's rail programs are funded by dedicated federal aid and MTF and CTF dollars. Dedicated federal aid and MTF money support motorist safety at railroad crossings on local roads. CTF revenue supports the other freight and passenger rail activities.

MDOT will continue to compete for federal funding to assist with rail capital enhancements if/when it is made available. Federal funding generally requires 20 percent matching funds at a minimum. If state revenues are not sufficient to meet the match requirements, these opportunities would be lost.

NOTE: STF dollars and corresponding dedicated federal funds support a trunkline crossing program that also is invested as a part of the Rail Program, but those funds are accounted for as a part of the Highway Program.

Port Revenue Assumptions

The pass-through assistance provided to the Detroit-Wayne County Port Authority is expected to continue at FY 2015 levels over the next five years. FY 2015-appropriated revenue for ports is nearly $470,000.

Aviation Revenue Assumptions

In FY 2015, federal funding for the AIP is expected to remain at present levels. That authorization provides for $3.35 billion in federal funds through FY 2015 for the airport capital improvement program nationwide. AIP funding is expected to be approximately $91.98 million in 2015, and it is likely similar levels will continue for the next five years either through Continuing Resolutions (CRs) or with a new authorization bill.

Michigan's aviation fuel excise tax is the primary funding source for the State Aeronautics Fund (SAF). Over the last decade, aviation fuel tax revenues have continued to significantly decline. Revenues from aviation fuel have decreased from $8.62 million in 2000 to $5.61 million in 2013, and are continuing to fall. When adjusted for inflation, the projected aviation fuel tax revenues are less than half of those available in FY 1998.

Other sources of revenue include aircraft registration, airport licensing, tall structures permits, and aircraft dealer licensing. Additional revenue for FY 2015 includes a one-time $2 million allocation from the General Fund to match federal aid. MDOT anticipates continued budget challenges for its Aeronautics Program in the five-year period due primarily to the uncertainty of state revenues.

Since 2009, certain statewide programs funded directly from SAF were suspended or reduced. Those programs include statewide pavement maintenance, statewide paint marking, all weather access, and the Air Service Program. In the case of the pavement maintenance, paint marking, and all weather programs, these projects are now done on the same cost basis as the Airport Capital Improvement Plan (ACIP). The Air Service Program that supports the governor's dashboard is funded in FY 2015 at $300,000 but is anticipated to be eliminated if additional revenues are not identified.

In summary, the aviation program revenue assumptions are:

- Federal Revenues
  - Uncertain through 2018 but estimated at present levels
  - Continued formula apportionments, congressional earmarks, and discretionary grants
  - In partnership with locals competing for federal discretionary funds
- State Revenues
  - Committed to match all available federal funding
  - Excise fuel tax revenue in decline
  - Increase in bond debt service

Public Transportation Investment Strategy

MDOT's Public Transportation Program includes local transit, intercity bus, marine passenger, the MichiVan vanpool program, port, freight rail, and passenger rail. The program provides for some combination of capital and operating assistance, technical support, safety oversight, and compliance monitoring for each of the modes. This Five-Year Transportation Program represents the continuation of a program that has been steadily reduced over a number of years. These reductions are most notable in capital investment and state share of total operating cost.

The total Public Transportation Program (federal, state and local funds) for FY 2015 is $335.41 million, while the anticipated FY 2016 program will be $324.31 million due to the one-time General Fund allocation in FY 2015. Based on the FY 2015 program with a four-year continuation of the FY 2016 program, the five-year program would be approximately $1.6 billion. The investment of CTF revenues in the public transportation system is determined by the detailed requirements currently set forth in Act 51, as well as the annual appropriations process. Act 51 requires the majority of CTF revenues to be used for local transit. Based on the current structure of Act 51 and current revenue stream, the investments called for in this five-year program are focused heavily on the preservation of the existing passenger transportation system. However, preservation is not possible without additional funds.

Local Transit Investment Strategy

State funds are combined with federal and local dollars, including farebox revenue and local millages, to support the operation and maintenance of the local transit network. The state's annual investment strategy for the local transit program is largely determined by detailed requirements set forth in Act 51 of 1951 for annual distribution/use of CTF revenues and the eligible uses of federal formula apportionments or competitive grant awards. The budgeted funds for FY 2015 are sufficient for continuation and providing match for anticipated federal formula funds; however, the appropriated General Funds will need to be used to match any special grants received by MDOT or transit agencies. Without continued General Fund support or increased CTF, the estimated CTF funds are not sufficient to maintain the current level of support for the local transit programs. Unless replacement funding is found, there will likely be federal funds left on the table over the course of the five-year program, which will likely result in a reduced level of transit services to the public and a further deterioration of the infrastructure (e.g., buses will not be replaced, facilities will not be repaired).

The MichiVan Program will be maintained with state, federal, and local funds. Demand for new vanpools increases as fuel prices go up. Due to an increase in federal CMAQ funds, there is potential to expand the program.

MDOT's local transit investments will focus on:

- Preservation of existing services in all 83 counties via operating assistance to local transit, intercity bus, and public marine service providers.
- Preservation and maintenance of the existing infrastructure (largely locally owned) via state investment and match to federal funds for routine vehicle replacement.
- Support of local capital strategies established by individual transit agencies via matching federal capital grants for infrastructure replacement and repairs, and in very limited situations, some very minor capacity expansion.

Unfortunately, based on this model, there is no funding anticipated in the program for urban growth with projects such as M-1 Rail, CATA's Michigan Avenue/Grand River Avenue BRT, Ann Arbor-to-Detroit regional rail, the Washtenaw and Livingston Line (WALLY), or expanded transit in the new RTA in the southeast Michigan service area. Furthermore, the cost to operate these projects, if they are implemented, will further deteriorate the operating support available for all transit services.

Intercity Bus Investment Strategy

MDOT will continue to use state and federal funds to contract with intercity bus carriers to provide route service that would not otherwise exist; i.e., service that would not be provided by the carrier absent a state subsidy. MDOT also will use state and/or federal funds to enhance the intercity passenger infrastructure. The Terminal Development Program is used to maintain intermodal/intercity terminals and infrastructure so the public can safely and conveniently access intercity services. There are no major construction projects planned in the next five years, so a minimal amount of funding has been requested to maintain the current

facilities and pathfinder signs. If a carrier or community requests a new facility in the future, MDOT will assess the need and benefit to the state to determine if funding will be allocated to the project. Both state and federal funds may be allocated for a new construction project, but generally the federal funds received under the Section 5311f Program are used to maintain the service on the essential state network via operating grants and bus replacement.

Every three years, MDOT bids out the five routes in northern Michigan that private carriers have abandoned due to lack of profitability. Based on MAP-21 and anticipated CTF funding levels, the current level of service will be maintained for the life of this five-year program. This service includes a partnership with the Wisconsin Department of Transportation to co-fund two routes that benefit both states and provide meaningful connections to the national network. Vehicles used on these routes and routes in the southern portion of the state deemed essential to national connectivity also are funded with a combination of state and federal funds. The number of vehicles provided was recently reduced based on the level of service being provided.

The Intercity Program also includes regulating the commercial business activities of both intercity bus and limousine services. These activities are funded through the department's operating budget and fee collections.

Marine Passenger Investment Strategy

The two state-subsidized marine passenger systems will continue to receive operating assistance under the Local Bus Operating Assistance Program in Act 51 to preserve the service they provide. Any state marine capital funds available over the life of this program will be used for routine infrastructure maintenance and improvements to ensure the integrity of the system. As with the other passenger programs, the funding for the Marine Passenger Program is not keeping up with inflation, which makes it difficult to preserve the system and impossible to meet increased demand. MDOT has not established any performance metrics for marine passenger infrastructure. However, with changes in how federal funds are distributed under MAP-21, deterioration of the locally owned infrastructure over the life of this five-year program is possible.

Rail

MDOT's rail investments will utilize state and federal funds to preserve and enhance Michigan's freight and passenger rail systems, ensure railroad crossing safety and promote economic development.

The bulk of the state and federal funds will be invested to preserve and enhance intercity passenger rail services in Michigan. This five-year program will use existing funding to continue to enhance state-owned track to accommodate speeds up to 110 mph between Kalamazoo and Dearborn. In addition, MDOT will construct a new connection track at the West Detroit junction for intercity passenger rail services, eliminating existing conflicts with passenger/freight congestion. Several station projects also will be undertaken, including completing work at Troy/Birmingham, Grand Rapids, Dearborn and East Lansing, and planning projects at Ann Arbor and Detroit.

MDOT will replace existing intercity passenger train equipment on all three Michigan services through a federal grant. Michigan is participating in a joint procurement, led by the Illinois Department of Transportation, to obtain $268 million in next generation train equipment for the Midwest. The new equipment is expected to be delivered from FY 2016 through FY 2017.

State and federal dollars also will be invested in state-owned line preservation, freight economic development loans, rail infrastructure loans, and safety enhancements at railroad crossings. Specific projects will be identified annually based on available funding, but generally will include:

- Preservation of freight service on 665 miles of state-owned track through capital rehabilitation that supports economic development.
- Low-interest loans through the Freight Economic Development Program to assist new or expanding businesses with access to the rail system.
- No-interest loans to railroads for maintenance or repair projects that preserve track infrastructure.
- Crossing safety projects to reduce motorist risk at railroad crossings, including warning device enhancement and crossing elimination projects. Projects on the state trunkline system are accounted for under the Highway Program.

Through the Highway Program, MDOT also plans to invest $10 million in the Continental Rail Gateway. The project is expected to begin construction in FY 2015. This public-private partnership will replace the existing rail tunnel between Detroit and Windsor with a higher-clearance tunnel to accommodate today's largest rail cars.

MDOT also will continue to plan and support other passenger rail projects, including leading the multi-state effort to develop a Corridor Investment Plan for the Chicago-Detroit/Pontiac High Speed Rail Corridor and providing assistance to commuter and light rail in southeast Michigan.

Beyond federal funding programs, MDOT has very little ability to fund additional rail capital improvements in FY 2015-2019. In addition, it is uncertain if MDOT's revenues will be able to maintain an operating contract for intercity passenger rail services over the next five years. The PRIIA-related requirement that shifted operating costs of the Wolverine Service (Pontiac/Detroit-Chicago) to MDOT in FY 2014 puts the service of this line at risk, as well as the service of the Blue Water (Port Huron-Chicago) and Pere Marquette (Grand Rapids-Chicago) lines. These routes serve 22 station communities, connecting Michigan to Amtrak's national rail network.

Port

For each of the next five years, MDOT anticipates providing $468,200 in legislatively appropriated funding to the Detroit-Wayne County Port Authority to assist with operating costs and marketing activities.

Aviation Investments

AIP (Capital Outlay and Maintenance Program)

The AIP provides funding for approximately 236 public use airports for capital improvement projects and pavement maintenance. Of the 236 eligible airports, 94 receive federal entitlement funding as part of the National Plan of Integrated Airport Systems. As the majority of Michigan's public use airports that receive federal entitlement funds are owned and operated by local governments, projects using these funds are selected by the airports themselves, not MDOT. However, projects are ranked according to a priority system and encouraged to provide not only benefit to the airport but the system as well.

In addition, MDOT can and does provide supplemental funding for projects and makes the decision on which projects receive these funds through the state block grant program. The Federal Aviation Administration (FAA) also provides supplemental funding for projects at airports they select. All project funding decisions using supplemental dollars are selected on the basis of the Michigan Airport System Plan (MASP) as approved by the Michigan Aeronautics Commission or published FAA priorities, as appropriate.

Priorities are a significant part of the funding decisions that support the organizational mission and represent the overall vision driving the airport infrastructure investment strategy. While constrained, these include:

- Address MASP goals (asset management) by reducing system and facility deficiencies.
- Preservation of critical infrastructure, particularly pavements, navigational aids and airspace.
- Maximize federal funds and leverage state, local and private funding.
- Support job growth and economic development through projects related to freight/logistics, aircraft maintenance and other emerging opportunities.

To the extent possible over the next five years, efforts will continue to focus on integration with other modes of transportation, addressing environmental issues, public awareness/outreach, and education.

In 2014, the ACIP showed a gap between the needs identified by airports and anticipated funding of approximately $60 million per year, or $300 million over five years. Today, only one year later, that gap is nearly $80 million annually, or $400 million over the five-year period. This growing shortfall is due to the increased cost of delaying and phasing projects versus being able to accomplish them in a single effort. This difference can be narrowed somewhat by discretionary funding, which is distributed by FAA on a regional basis among various states. Michigan has competed well for these funds and, given the identified needs, will continue to aggressively pursue these opportunities. Additional state and other funding options will continue to be explored to impact the shortfall.

MDOT's Multi-Modal Investment Strategy		
(Subject to appropriation of state, federal and local funds)		
	Annual Average	**Five-Year Total**
AVIATION		
Airport Improvement Program (AIP)	$170 million	$850 million
PUBLIC TRANSPORTATION PROGRAM		
(Local Transit, Intercity Bus, Passenger Rail, Rail Freight, and Ports)**		$1.6 billion
TOTAL		**$2.5 billion**

**Includes comprehensive program of needed investments for primary airports and general aviation airports as identified in the MDOT ACIP.*

***Includes federal, local and sub-fund expenditure authority, which is often overstated to account for potential revenue.*

M-14 road maintenance in Washtenaw County

State Trunkline Performance Measurement and System Condition

MDOT Performance Measurement

Maintaining and growing Michigan's economy depends on the preservation, modernization, and efficient operation of its transportation system. To achieve the goals that have been set forth, it is necessary to benchmark and monitor the performance of the system. As a part of MAP-21, a national system for measuring performance is focusing on addressing national goals in many areas, including safety, infrastructure condition, congestion, and system reliability. A performance-driven approach to investment decisions represents a significant shift in the focus of the federal program. MAP-21 will likely lead to additional measures linked to federal funding.

MDOT formalized its approach to improving, measuring, and reporting the condition of its transportation networks with the STC's 1997 adoption of pavement condition goals. Since then, MDOT has developed performance measures to reflect a broader range of the transportation system. The following sections reflect a representative sample of the performance measures that MDOT is using to track the highway, aviation, and passenger transportation modes of travel. A broader suite of measures can be found online at ***www.michigan.gov/mdotperformance***, including the document *Driven by Excellence: A Report on Transportation Performance Measurement at MDOT.*

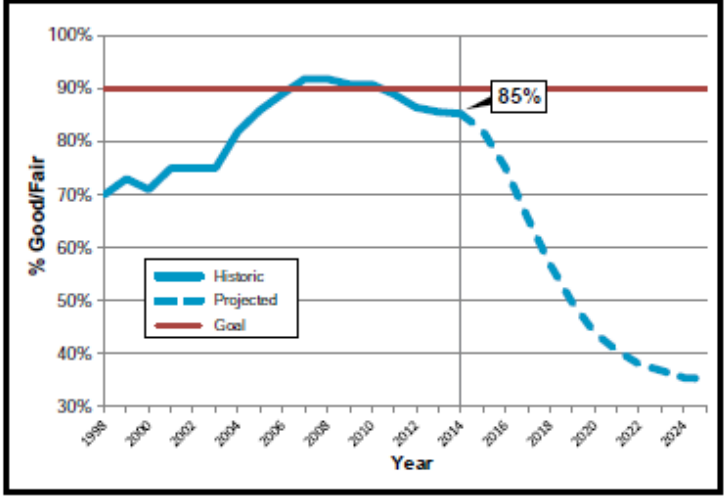
Highway Pavement Condition Goal

Highway Program information in this document only pertains to the state trunkline routes that MDOT has jurisdiction over - I, M, and US routes - which carry 51 percent of passenger traffic and 64 percent of commercial traffic in the state. These routes are important trade routes, business corridors, and keys to economic development.

As discussed earlier in this document, MDOT's pavement condition peaked in 2008. However, funding is not keeping pace with system deterioration and needs. Projections reveal 50 percent of the trunkline system, Michigan's most traveled roads, will be in poor condition by 2018 at the current funding level.

MDOT continues to make program development and project selection decisions based on the pavement's Remaining Service Life (RSL), a measure of the pavement's overall health. It is defined as the estimated remaining time in years until a pavement's most cost-effective treatment requires either reconstruction or major repair. Pavements with an RSL of two years or less are considered to be in the "poor" pavement category. MDOT uses an asset management approach of short, medium, and long-term improvements to maintain overall pavement health. Once pavements deteriorate into the "poor" category, it is more costly to bring them back into "good" condition.

MDOT HISTORIC AND PROJECTED RSL PAVEMENT CONDITION



The graph on the left shows the state trunkline system condition based on RSL. MDOT was able to maintain its goal of 90 percent of pavement in good or fair condition from 2008 to 2011. Trunkline conditions are 85 percent good or fair in 2014. As the graphic shows, the deterioration rate increases in the coming years, with the average deterioration rate in recent years at about 1.2 percent. The most recent estimate projects the rate of pavement deterioration on the trunkline system to rise to nearly 7 percent per year over the next six years, equating to approximately 2,000 lane miles deteriorating into poor pavement per year.

Possible Revisions to Pavement Condition Goal

Faced with the reality that it would be structurally impossible to achieve existing pavement condition goals assuming the current funding, an analysis was done to explore the possibility of creating new pavement condition goals that would be more in line with existing funding. However, this analysis went much farther than simply scaling back MDOT's existing goal to match likely funding levels. Rather, an entire re-imagining of the pavement condition goal structure is under exploration in an effort to use MDOT's limited resources to more specifically target areas of strategic importance to both the driving public and Michigan's economy.

This was accomplished by first referring to a series of networks that were identified in the 2005-2030 MI Transportation Plan, known as the Corridors of Highest Significance (COHS). COHS separates the trunkline system into four distinct corridor designations based on their importance to Michigan's citizens and economy: International/National, Statewide, Regional, and Local Trunkline.

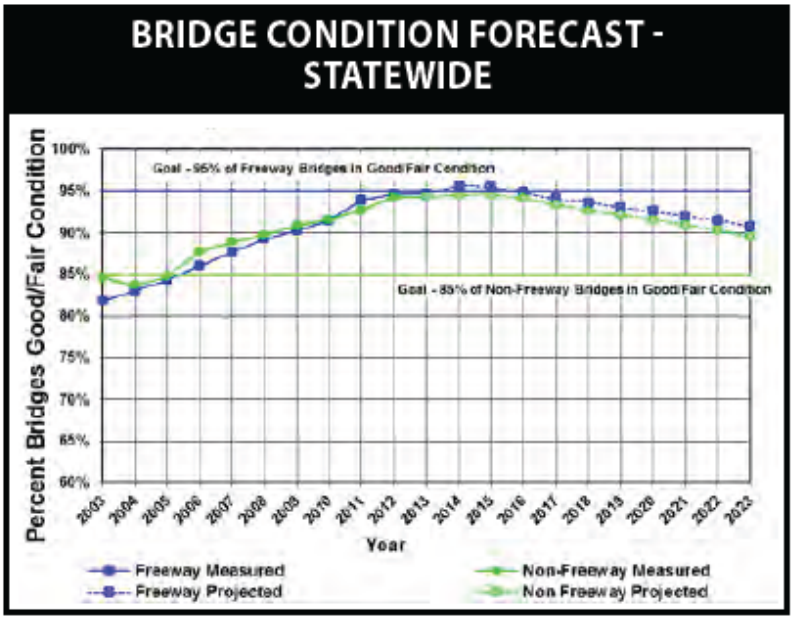
The Road Quality Forecasting System (RQFS) was used to forecast a variety of pavement condition outcomes under the concept of providing more resources to the most important corridors to maintain them at a higher level of overall condition. These options have been presented to the STC. The options included different goal scenarios of various funding levels. The options ranged from requiring an additional $465 million per year in funding to needing $775 million more per year to achieve and maintain individual corridors at stratified levels of pavement condition, ranging between 90 percent good/fair and 60 percent good/fair.

While these hypothetical condition goals are significantly lower than MDOT's current goals, they do represent goals that might actually be achievable given the current funding climate. The hope is that these new pavement goals will provide MDOT with the means to make the best investment choices in a time of limited resources.

Bridge Condition Goal

MDOT's Bridge Management System (BMS) is an important part of the overall asset management process. BMS is a strategic approach to linking data, strategies, programs, and projects into a systematic process to ensure achievement of the desired results.

An important BMS tool used by MDOT to develop preservation policies is the Bridge Condition Forecasting System (BCFS). Working from current bridge conditions, bridge deterioration rates, project costs, expected inflation, and fix strategies, BCFS estimates the future condition of the state trunkline bridge system.



As shown in the chart at left, MDOT has met and is projecting to sustain the non-freeway bridge goal of 85 percent good or fair condition.

Projections show that Michigan peaked with a bridge condition close to 95 percent good or fair at the end of 2013. MDOT has made steady progress toward its freeway bridge goal. However projections indicate that, without additional funding, freeway bridge condition will continue to decline, falling short of maintaining the freeway bridge goal of 95 percent in good or fair condition.

Safety Goals

Toward Zero Deaths™ National Strategy on Highway Safety

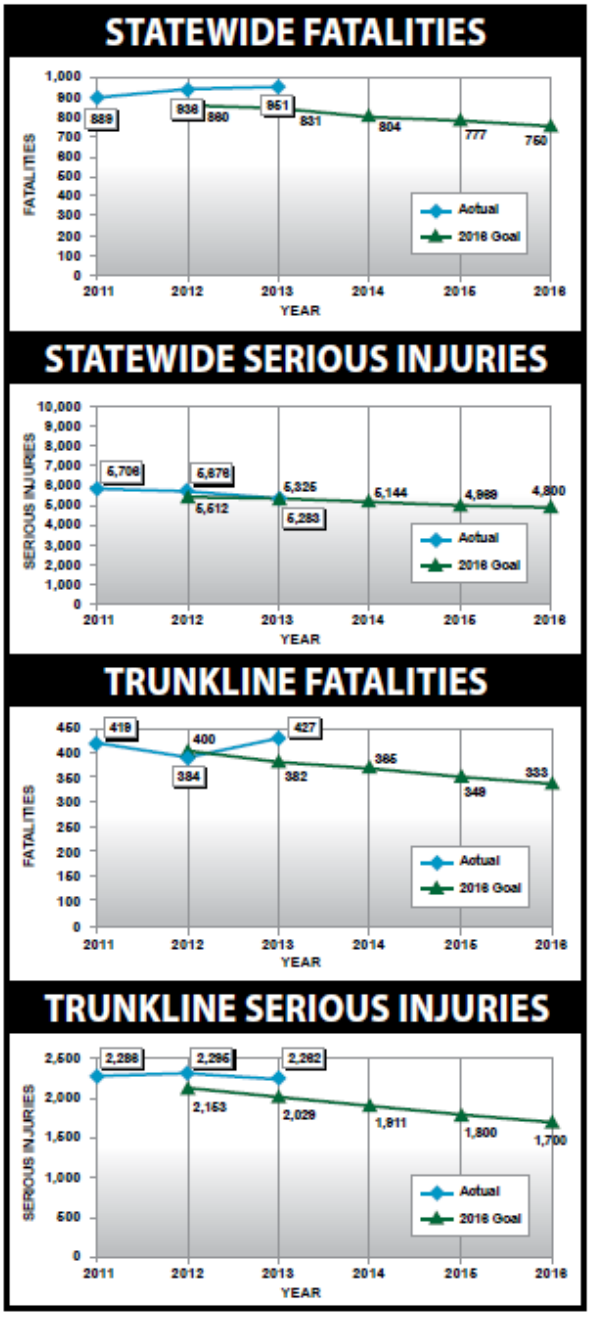
MDOT's safety goal is to reduce fatalities and serious injuries on the state trunkline system in support of the Michigan Strategic Highway Safety Plan (SHSP) and the department's efforts of achieving the vision of Toward Zero Deaths (TZD).

To meet the department's safety goal, the strategy of the Safety Program is to select cost-effective safety improvements, as identified in the SHSP, to address trunkline locations with correctable fatality (K) and serious injury (A) crashes. Locations identified will support the key focus areas of the SHSP. The purpose of the SHSP is to identify key safety needs in the state and guide investment decisions that achieve significant reductions in highway fatalities and serious injuries. SHSP identifies four broad emphasis areas: high-risk behaviors, at-risk road users, engineering infrastructure, and system administration. Of these areas, engineering infrastructure is predominately addressed by the Safety Program through intersection safety and lane departure projects. In addition, pedestrian and bicycle safety improvements are the department's emphasis for at-risk road users.

Michigan's SHSP was adopted in December 2004 by the Governor's Traffic Safety Advisory Commission and endorsed by the governor in 2006. In 2013, the SHSP was revised to reflect current safety needs and goals. An emphasis on goals established an incremental reduction of the frequency of fatalities and serious injuries. The 2013 SHSP goals are to reduce traffic fatalities and serious injuries on all roadways from 889 and 5,706, respectively, in 2011 to 750 and 4,800, respectively, in 2016. In 2013, there were 951 fatalities and 5,283 serious injuries reported statewide.

On the state trunkline system, the department's goal is to reduce fatalities and serious injuries from 419 and 2,286, respectively, in 2011 to no more than 333 and 1,700, respectively, in 2016. This equates to a 4.5 and 5.8 percent reduction per year, respectively. While this is the goal for 2016 on the state trunkline, MDOT's vision is TZD with the ultimate goal to reduce fatalities to zero and minimize serious injuries. The 2016 goal is an interim goal of that vision. In 2013, there were 427 fatalities and 2,262 serious injuries reported on the state trunkline system. Compared to 2012, fatalities increased from 384, while serious injuries decreased from 2,295.

Below are statewide and trunkline graphs that compare the actual values of fatalities and serious injuries compared to the 2016 interim goals.



To achieve this vision, MDOT has scheduled 82 safety projects for the FY 2015-2019 program consisting of intersection, lane departure, and pedestrian safety-related improvements, all specific action areas in the SHSP. Included in the safety improvements are the installation of cable median barrier along 26 miles of freeways, safety improvements to address wrong-way crashes on freeway ramps, seven roundabouts and two pedestrian projects. Overall, the 82 safety projects will address 71 fatalities and 230 serious injuries during FY 2015-2019, for an annual average of 14 and 60, respectively.

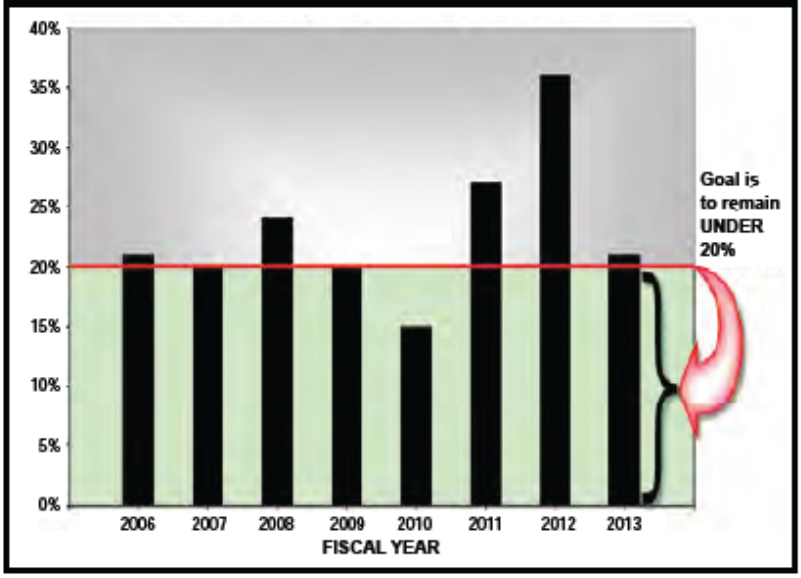
Multi-Modal Performance Measures

Local Transit Performance Measures

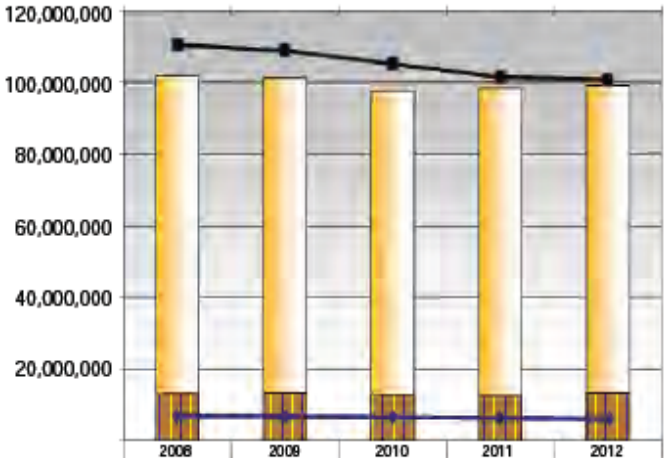
The OPT considers many factors when planning the investment strategy for local transit. Two primary performance measures considered are the condition of the rural transit fleet and the local transit level of service.

- The condition of the rural transit fleet is based on the percent of vehicles past their useful life. The goal is to have less than 20 percent of the rural fleet beyond useful life. Although Michigan made great strides toward this goal in FY 2013 due to a large federal SGR grant, these transit programs did not reach the goal. Unfortunately, this program is no longer available, nor is any discretionary funding, making Michigan very likely to fall further from this goal over the course of this five-year program.

PERCENT OF RURAL AND SPECIALIZED TRANSIT VEHICLES PAST THEIR USEFUL LIFE



LOCAL TRANSIT LEVEL OF SERVICE FY 2008 - 2012



	2008	2009	2010	2011	2012
Passenger Trips Total	101,849,957	101,217,334	97,526,236	98,215,584	99,051,688
Elderly and Disabled Passenger Trips (as subset of Total)	13,222,791	13,287,532	12,909,367	12,637,176	13,254,147
Miles of Service	110,382,367	108,816,524	105,102,288	101,387,039	100,781,091
Hours of Service	6,811,329	6,673,897	6,548,547	6,361,853	6,188,611

- The local transit level of service is measured using total annual hours and miles of service and total annual passenger trips (considering elderly/ disabled passenger trips as a subset of the total). The goal is to preserve service levels and continue providing service in all 83 counties. Service levels peaked in 2008 when gas prices soared, then started to return to lower levels as gas prices stabilized. For the last two years, service levels have increased slightly, and service is still available in all 83 counties of the state. However, with the anticipated funding reduction in FY 2015 and beyond, there will likely be cuts to service at the local level either due to decreased operating assistance or the inability to replace buses that are no longer safe to operate.

Intercity Bus Performance Measure

The factor used to determine the investment strategy for intercity bus service is to provide reasonable access to intercity bus service in rural areas where connectivity to the national transportation network is often difficult to attain. MDOT's goal is to preserve the existing level of service, which has 81 percent of the rural population within 25 miles of an intercity bus stop. The national average is 78 percent.

INTERCITY BUS SYSTEM OF MICHIGAN

MDOT does not own or control local transit service levels, nor does it own or control the entire intercity bus network in Michigan. In addition, the state and federal funding that MDOT uses to support local transit and intercity bus is only a portion of the total cost of operating and maintaining the service. While MDOT has established performance measures for these modes to help guide its investment decisions, MDOT cannot - on its own - ensure that the performance measures are met.

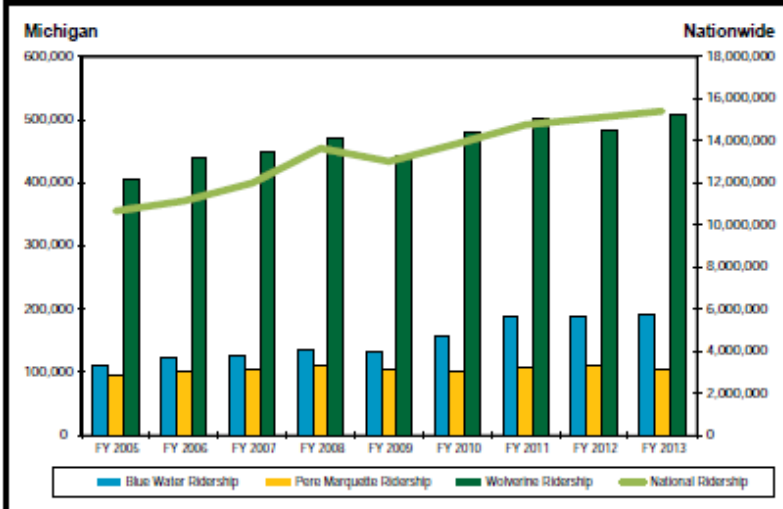
Rail Performance Measures

Two rail-related goals are included in MDOT's performance measurement efforts.

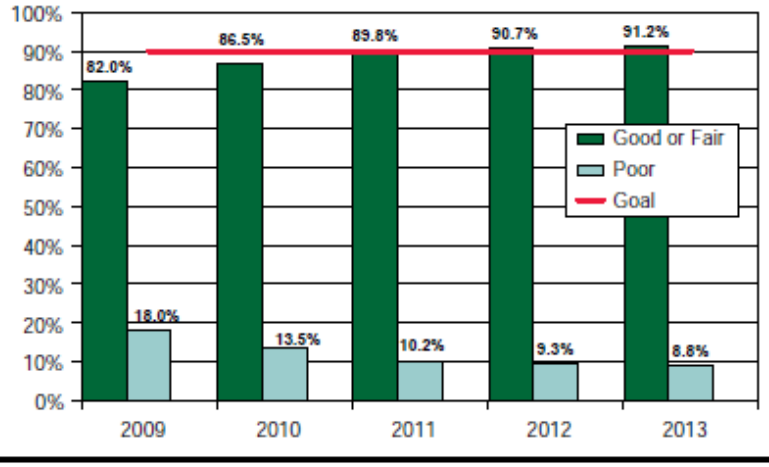
MDOT tracks the number of daily train miles and total number of passengers using state-supported passenger rail services, with a goal of maintaining ridership consistent with (within 10 percent) or better than national trends. MDOT is meeting its goal.

MDOT also tracks the railroad crossing surface condition on the state trunkline system, with a goal of at least 90 percent in good or fair condition. The percentage of the railroad crossing surfaces on the state trunkline system in at least fair condition has been increasing. As of FY 2013, 91.2 percent of the crossing surfaces were in good or fair condition.

PASSENGER RAIL RIDERSHIP TRENDS MICHIGAN ROUTES AND AMTRAK NATIONWIDE

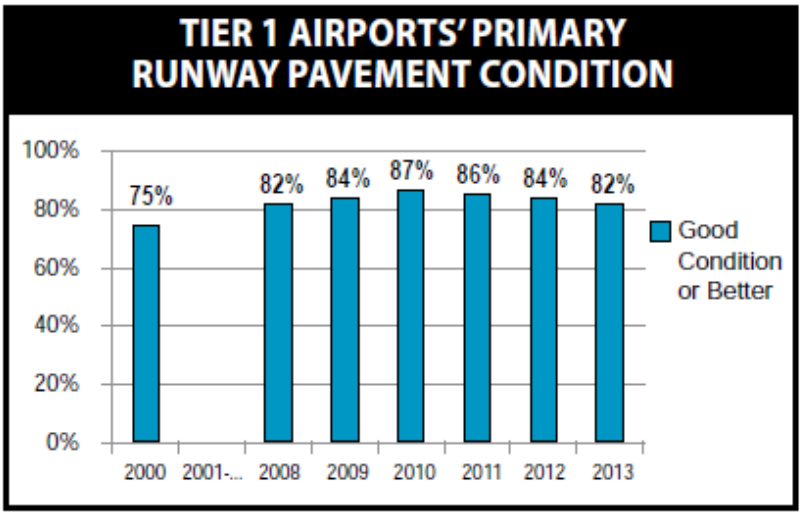


TRUNKLINE HIGHWAY-RAILROAD GRADE CROSSING SURFACE CONDITIONS



Aviation Performance Measures

The Office of Aeronautics has made significant progress toward meeting its system planning goals related to providing access to air travel for Michigan residents. The primary performance measurement goal is to keep the pavement conditions at the Tier 1 airports' primary runways at a rating of good or better according to Pavement Condition Index inspections. The goal is to have 100 percent of these pavements in good or better condition. The latest inspections show the system is at 82 percent. This is a reduction compared to prior years and it is anticipated the rate will continue to decline based on increasing and accelerating deterioration of pavements.



Pellston Airport runway in Emmet County

US-127 reconstruction in Jackson County

Highway Economic Benefits

Highway Economic Impacts

Highway infrastructure investments are a vital part of the state's overall economic development strategy. An efficient highway system in good condition plays an integral role in supporting the economy of a state. In order to assess the economic impacts of the 2015-2019 Highway Program, the Michigan Benefits Estimation System for Transportation Tool (MI BEST Tool) was used.

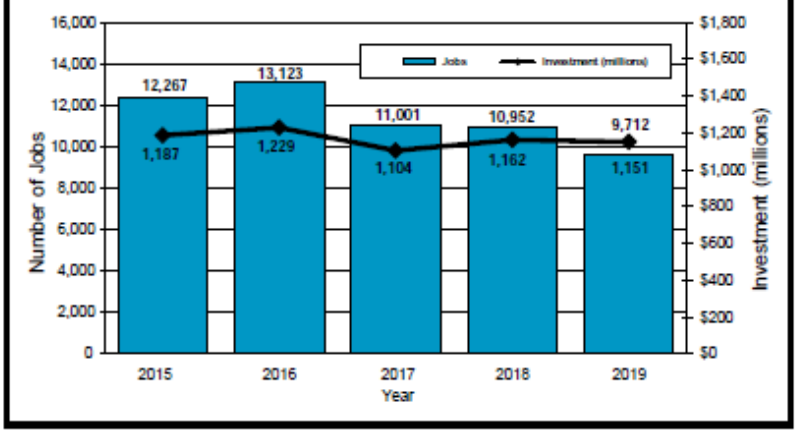
The MI BEST Tool is designed to estimate economic impacts for transportation investments like the Five-Year Transportation Program down to individual transportation projects. The economic model chosen to use for this analysis is the Regional Economic Models, Inc. (REMI) Policy Insight model.

The table and charts below show the employment impact of the 2015-2019 Highway Program for the state of Michigan. The resulting analysis is the total statewide economic impacts on the Highway Program.

Employment impacts of the current 2015-2019 Highway Program

	2015	2016	2017	2018	2019
INVESTMENT (in millions)	$1,187	$1,229	$1,104	$1,162	$1,151
EMPLOYMENT IMPACT (jobs)	12,267	13,123	11,001	10,952	9,712

EFFECT ON EMPLOYMENT OF THE FIVE-YEAR HIGHWAY PROGRAM 2015-2019



Multi-modal transportation

Multi-Modal Economic Benefits

Public Transportation Benefits

Local Transit

Transportation investments are a vital part of the state's overall economic development strategy. More than 97 million trips are made annually on local public transit in Michigan. While the direct benefits of transit to its users are clear, it can be shown that the overall benefits of these trips extend beyond transit riders. Through improved mobility, safety, air quality, and economic development, public transit also benefits users of the roadway network and the community at large. Many of these trips satisfy the mobility needs of numerous households for whom owning and driving a vehicle is not an effective or affordable transportation option. As a result, there are social benefits that result from providing essential mobility.

In order to assess the economic impacts of the 2015-2019 Public Transportation Program, MDOT staff used the REMI and the MI BEST Tool. The resulting economic impacts reflect the statewide impacts of $1.3 billion in transit capital and operational spending called for in this Five-Year Transportation Program. This would support 5,053 jobs in 2015 and an average of 4,781 jobs annually for 2015-2019, add $1.908 billion in real personal income over the five-year period, and add $1.764 billion in Gross State Product of the five-year period. In this particular analysis, the spending impacts of capital investment and operations in public transportation in Michigan were considered, but the data was not available to estimate the economic benefits of travel efficiencies as is currently done for the MDOT highway and bridge program.

Although this analysis attempts to assess the benefits of transit in a comprehensive manner, it does not account for the considerable additional benefits that can arise from rapid transit investments in urban areas. Therefore, the results of the model can be considered conservative. National models have shown that a dollar invested in light rail or rapid transit can return up to $6 in economic benefits, including local economic development around transit stops.

Rail Program Benefits

Michigan's rail system has approximately 3,600 miles of track, operated by 24 railroads. It carries about 19 percent of the state's freight tonnage. These commodities totaled more than $161 billion in 2012. Rail is particularly important for the movement of heavy and bulky commodities, as well as hazardous materials.

Growing healthy rail corridors is good for Michigan's economy, whether a corridor is specifically freight, passenger, or both. For the federally designated Chicago-Detroit/Pontiac accelerated rail corridor, MDOT will continue to improve the 135 miles of state-owned track between Kalamazoo and Dearborn. MDOT will have an opportunity to encourage and expand economic development along this corridor for both passenger and freight rail interests. In addition, MDOT will work with the Michigan Economic Development Corp., as well as the Michigan Department of Agriculture and Rural Development, to provide support to rail-reliant businesses throughout the state, most directly by helping provide access to the system through the Freight Economic Development Program.

Aviation Program Benefits

In order to maintain a competitive advantage in a global economic environment, access to convenient and efficient air travel is essential. While commercial airline services are often the most recognizable facet of aviation, the fact is that general aviation accounts for 97 percent of the nation's airports. These airports support a variety of aviation activities that employ thousands of people and create millions of dollars in economic impact and benefit.

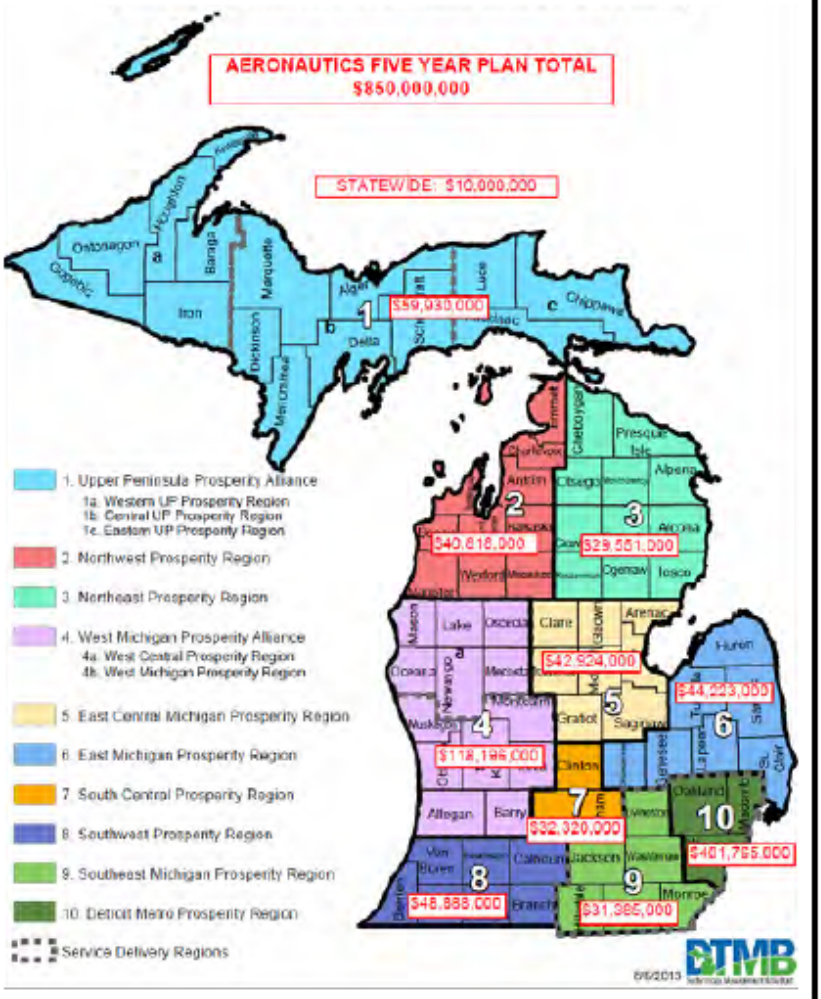
Aviation, both commercial and general, is big business in Michigan.

- Aviation contributes more than $20 billion annually to Michigan's economy.
- Michigan airports serve more than 37 million passengers each year.
- Michigan airports move more than 400 million pounds of air cargo each year.
- Michigan is in the top 10 nationwide for the number of registered business aircraft.

Businesses throughout the state depend on airports for the movement of goods and personnel. Benefits associated with airports include direct and indirect jobs, wages, and expenditures. They also include the economic ripple effects in the community, enhancing economic activity far from the airport itself. In a state like Michigan, airports serve a vital role in supporting rural communities, particularly in the Upper Peninsula.

Economic benefits also include expenditures made by those transient passengers that use the airport but spend money throughout the region. Airports also provide savings in time and money as a result of the travel efficiencies they create. In addition, economic benefits include the intangible effect an airport has on business decisions to locate or remain in a specific area. Finally, and somewhat less tangible, are quality of life benefits provided by an airport. Examples include police and firefighting support, search and rescue, recreation, emergency medical flights, on-demand charter services, and flight instruction for future pilots.

AERONAUTICS INVESTMENTS BY PROSPERITY REGION



Continued emphasis on identifying improved service delivery methods, efficiencies and innovations will compliment efforts to create jobs and align with Gov. Rick Snyder's Regional Prosperity Initiative (RPI) to support economic development. This map shows a breakdown of investments based on the new RPI Regions.

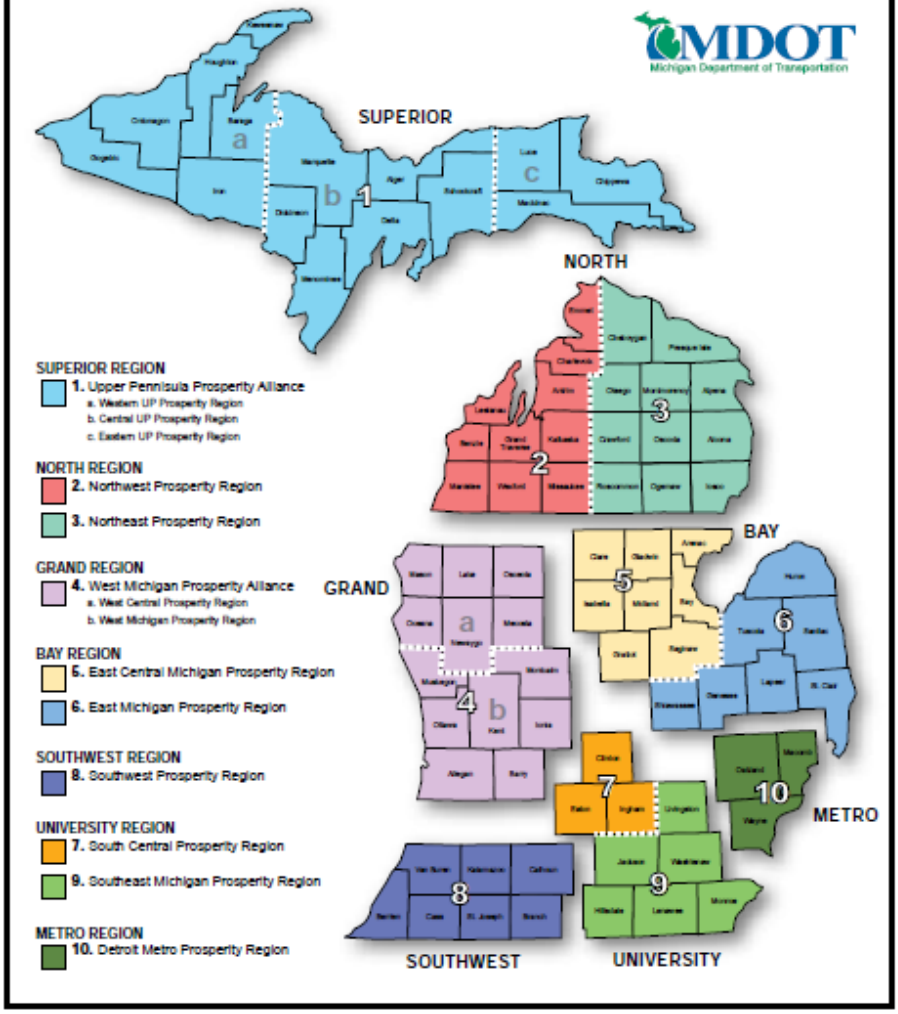
Whether through serving airline passengers at commercial service airports, accommodating corporate aviation at general aviation airports, or enhancing quality of life for residents and businesses in Michigan, aviation remains one of the key links to continued and future prosperity. Airports are proven economic engines that promote growth and vitality through the fostering of opportunities for future economic development and the creation of jobs.

Road and Bridge Project Lists

Regional Prosperity Initiative

In FY 2014, Gov. Snyder's Executive Budget recommendations included the Regional Prosperity Initiative (RPI), a voluntary competitive grant process to encourage local, private, public and nonprofit partners a framework for creating vibrant regional economies. Michigan's existing state, regional and local boundaries often had overlapping goals and competing priorities. RPI establishes a common set of 10 RPI geographic boundaries that all state agencies will recognize and use. This initiative is intended to be a catalyst for the development of a local "economic vision" in the 10 RPI areas. All state agencies can contribute to implementing a vision that is created locally, but transportation infrastructure provides the core for economic opportunities - making MDOT a significant part of this initiative.

MDOT REGIONS AND STATE OF MICHIGAN PROSPERITY REGIONS



As part of the 2015-2019 Five-Year Transportation Program, MDOT is taking its first steps toward implementing RPI. While MDOT has operated with a seven-region system for many years, these region boundaries have been realigned to better incorporate the 10 RPI boundary structure. To find your local RPI, refer to the included map.

The MDOT Road and Bridge Project List, containing planned projects for the 2015-2019 time frame, also are subdivided by RPI boundaries. The chosen projects reflect MDOT efforts to coordinate road and bridge work, preserve the existing system, address safety needs and make the most of anticipated revenues. For more information about the RPI, go to ***www.michigan.gov/regionalprosperity***. To view MDOT project lists online on an interactive map go to ***http://mdotnetpublic.state.mi.us/fyp/***.

2015 - 2019 ROAD AND BRIDGE PROJECT LISTS

BAY REGION - EAST CENTRAL MICHIGAN PROSPERITY REGION

BRIDGE - REPLACEMENT AND REHABILITATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
ARENAC	US-23 (E Huron Road)	US-23 over AU GRES RIVER	Overlay - Deep	0.182		CON			
BAY	I-75	US-10 EB over I-75	Bridge Replacement	0.05	CON				
BAY	I-75	US-10 WB and M-25 NB over I-75	Bridge Replacement		CON				
BAY	US-10	NINE MILE ROAD over US-10	Bridge Replacement	0.608	CON				
CLARE	US-10	US-10 over CHIPPEWA CREEK	Bridge Replacement	0.229		CON			
CLARE	US-10	US-10 WB over US-127	Overlay - Deep	0.027		CON			
CLARE	US-10	US-10 WB over M-115	Overlay - Deep	0.361		CON			
CLARE	US-10	US-10 EB over M-115	Overlay - Deep			CON			
CLARE	US-27	US-127 NB over TOWNLINE CREEK	Overlay - Deep	1.567		CON			
CLARE	US-27	US-127 SB over TOWNLINE CREEK	Overlay - Deep			CON			
GLADWIN	M-30	M-30 over No Name Drain	Culvert Replacement	0.218		CON			
GRATIOT	M-57 (West Cleveland Road)	M-57 over BRADLO DRAIN	Culvert Replacement	0.963		CON			
GRATIOT	US-127	US-127 BR over US-127	Superstructure Repair, Steel	0.03	CON				
ISABELLA	US-127	BASELINE ROAD over US-127	Overlay - Deep	0.32	CON				
ISABELLA	US-127	BEAL CITY ROAD over US-127	Overlay - Deep	0.914	CON				
ISABELLA	US-127	ROSEBUSH ROAD over US-127	Overlay - Epoxy		CON				
MIDLAND	M-20 (East Isabella Road)	M-20 over TITABAWASSEE RIVER and CSX RR (Abandoned)	Bridge Replacement	1.036				CON	
SAGINAW	I-75	I-75 NB over KOCHVILLE DRAIN	Deck Replacement	0.621		CON			
SAGINAW	I-75	I-75 SB over KOCHVILLE DRAIN	Deck Replacement			CON			
SAGINAW	I-75	KING ROAD over I-75	Bridge Replacement	3.498	CON				
SAGINAW	I-75	HESS ROAD over I-75	Bridge Replacement		CON				
SAGINAW	I-75	BAKER ROAD over I-75	Bridge Replacement	0.736	CON				
SAGINAW	I-75	M-54 and M-83 over I-75	Substructure Repair	0.2	CON				
SAGINAW	M-13 (East Road)	M-13 over FLINT RIVER	Bridge Replacement	0.494	CON				
SAGINAW	M-13 (East Road)	M-13 over BIRCH RUN OUTLET DRAIN	Bridge Replacement	0.494	CON				
SAGINAW	M-13 (East Road)	M-13 over KOEPKE DRAIN	Bridge Removal	1.04	CON				
SAGINAW	M-13 (East Road)	M-13 over MILKS DRAIN	Bridge Replacement	1.321	CON				
SAGINAW	M-13 (East Road)	M-13 over MESSNER DRAIN	Culvert Replacement		CON				
SAGINAW	M-46 (Gratiot Road)	M-46 EB over SWAN CREEK	Overlay - Deep	0.334	CON				
SAGINAW	M-46 (Gratiot Road)	M-46 WB over SWAN CREEK	Overlay - Shallow		CON				
SAGINAW	M-57 (East Broad Street)	M-57 over SHIAWASSEE RIVER	Bridge Replacement	0.12		CON			
SAGINAW	M-57 (West Broad Street)	M-57 over BRANCH OF DEER CREEK	Culvert Replacement	0.131		CON			
SAGINAW	M-81 (East Washington Road)	M-81 over WEAVER DRAIN	Culvert Replacement	0.871		CON			
SAGINAW	M-83 (S Main Street)	M-83 over CASS RIVER	Superstructure Repair, Steel	0.271			CON		
				16.636					

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
BAY	I-75	COTTAGE GROVE ROAD TO LINWOOD ROAD	Restoration and Rehabilitation	1.801			CON		
BAY	I-75	M-13 CONNECTOR TO BEAVER ROAD	Restoration and Rehabilitation	4.541					CON
BAY	M-13 (Bay City Road)	ZILWAUKEE BRIDGE TO BAY CITY SOUTH CITY LIMITS	Resurface	6.268			CON		
BAY	M-13 (Huron Road)	NORTH STREET TO BAY/ARENAC COL	Resurface	3.335					CON
CLARE	US-10	US-127 TO LEATON ROAD	Restoration and Rehabilitation	3.241					CON
GRATIOT	US-127	WASHINGTON ROAD TO VAN BUREN ROAD	Resurface	5.492		CON			
GRATIOT	US-127	VAN BUREN ROAD TO BEGOLE ROAD	Restoration and Rehabilitation	3			CON		
ISABELLA	US-10	LEATON ROAD BRIDGE TO MIDLAND/ ISABELLA COUNTY LINE	Restoration and Rehabilitation	5.805				CON	

EPE= Study/Environmental PE=Preliminary Engineering/Design PE-B=Preliminary Engineering/Design for Bridges
UTL=Utility work ROW=Right of way/Real Estate CON=Construction

2015 - 2019 ROAD AND BRIDGE PROJECT LISTS

BAY REGION - EAST CENTRAL MICHIGAN PROSPERITY REGION

REPAIR AND REBUILD ROADS - continued

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
SAGINAW	I-75	I-675 NORTH JUNCTION TO SAGINAW/BAY COUNTY LINE	Reconstruction	0.838		CON			
SAGINAW	I-75	DIXIE HIGHWAY TO HESS	Major Widening	3.765	CON				
SAGINAW	M-46 (Gratiot Road)	WEST LIMITS OF MERRILL TO BRENNAN ROAD	Resurface	4.785				CON	
SAGINAW	M-46 (Gratiot Road)	BRENNAN ROAD TO M-52	Resurface	5.975			CON		
SAGINAW	M-57 (W Brady Road)	SAGINAW/GRATIOT COUNTY LINE TO M-52	Restoration and Rehabilitation	10.194				CON	
				59.04					

CAPACITY IMPROVEMENT

US-127, I-69 to ITHACA

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
GRATIOT	US-127	GRATIOT COUNTY LINE NORTH TO BAGLEY ROAD	NEW ROUTES	10.385	ROW				
				10.385					

BAY REGION - EAST MICHIGAN PROSPERITY REGION

BRIDGE - REPLACEMENT AND REHABILATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
GENESEE	I-475	I-475 over ATHERTON ROAD	Overlay - Epoxy	0.075		CON			
GENESEE	I-475	I-475 over LEFT-TURN LANE NO. 3	Substructure Repair			CON			
GENESEE	I-69	LAPEER ROAD over I-69	Deck Replacement	0.248		CON			
GENESEE	I-69	I-69 EB over HAMMERBERG ROAD	Widen - Maint Lanes	0.339			CON		
GENESEE	I-69	I-69 WB over HAMMERBERG ROAD	Widen - Maint Lanes				CON		
GENESEE	M-15 (State Road)	M-15 over PADDISON CO DRAIN	Culvert Replacement	0.308		CON			
LAPEER	I-69	LAKE NEPESSING ROAD over I-69	Deck Replacement	0.359	CON				
SANILAC	M-25 (Lakeshore Road)	M-25 over MILL CREEK	Bridge Replacement	0.124		CON			
SANILAC	M-46 (West Sanilac Road)	M-46 over MIDDLE BRANCH OF CASS RIVER	Culvert Replacement	0.987		CON			
SANILAC	M-53 and M-19	M-53 over SOUTH BRANCH CASS RIVER	Overlay - Deep	1.501		CON			
SANILAC	M-53 and M-19	M-19 over SOUTH FORK CASS RIVER	Overlay - Shallow			CON			
SANILAC	M-53 and M-19	M-53 over Greenman Creek	Overlay - Shallow	0		CON			
SANILAC	M-90 (East Peck Road)	M-90 over POTTS DRAIN	Deck Replacement	1.499	CON				
ST. CLAIR	I-69	I-69 EB over PINE RIVER	Overlay - Deep	2.51	CON				
ST. CLAIR	I-69	I-69 over RILEY-WALES DRAIN	Culvert Replacement		CON				
ST. CLAIR	I-69	I-69 EB over BURT DRAIN	Culvert Replacement		CON				
ST. CLAIR	I-69	I-69 WB over BURT DRAIN	Culvert Replacement		CON				
ST. CLAIR	I-69	BARTH ROAD (TAYLOR) over I-69	Superstructure Replacement		CON				
ST. CLAIR	M-25	M-25 over HOWE DRAIN	Superstructure Replacement	0.184				CON	
				8.134					

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
GENESEE	I-475	SAGINAW STREET TO CLIO ROAD	Restoration and Rehabilitation	1.401		CON			
GENESEE	I-475	CARPENTER ROAD TO SAGINAW STREET	Restoration and Rehabilitation	1.788				CON	
GENESEE	I-69	BALLENGER HIGHWAY TO FENTON ROAD	Reconstruction	1.556			CON		
GENESEE	M-15 (State Road)	LEXINGTON STREET TO FLINT STREET	Reconstruction	0.755					CON
GENESEE	M-54 (Dort Highway)	COLDWATER ROAD TO MT. MORRIS ROAD	Resurface	2.027					CON
SANILAC	M-46 and M-25	M-46, WHITNEY DRIVE TO M-25, M-25, OAKWOOD BOULEVARD TO HURON STREET	Reconstruction	1.076				CON	
ST. CLAIR	I-69	TAYLOR ROAD TO WALES CENTER - EB ONLY	Reconstruction	6.067	CON				
ST. CLAIR	I-69 EB	WALES CENTER ROAD TO M-19 (EB ONLY)	Reconstruction	4.507	CON				
ST. CLAIR	M-29	GREEN STREET/MAIN STREET TO PALMS ROAD	Reconstruction	5.406		CON			
TUSCOLA	M-25 (Bay City Forestville Road)	BAY PARK ROAD TO THE HURON COUNTY LINE	Resurface	3.911	CON				
TUSCOLA	M-46 (Sanilac Road)	VASSAR ROAD TO SHERIDAN ROAD	Resurface	4.939		CON			
				33.433					

CAPACITY IMPROVEMENT

BLUE WATER BRIDGE PLAZA AND I-94 / I-69 AT THE BLACK RIVER BRIDGE, PORT HURON

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
ST. CLAIR	I-94/I-69	I-94/I-69 FREEWAY	WELCOME CENTER ON RELOCATED ROUTE	0	CON				
ST. CLAIR	I-94/I-69	ALONG WB I-94/I-69, NEW PORT HURON WELCOME CENTER	WEIGH STATION ON RELOCATED ROUTE	0	CON				
				0					

EPE= Study/Environmental PE=Preliminary Engineering/Design PE-B=Preliminary Engineering/Design for Bridges
UTL=Utility work ROW=Right of way/Real Estate CON=Construction

2015 - 2019 ROAD AND BRIDGE PROJECT LISTS

GRAND REGION - WEST MICHIGAN PROSPERITY ALLIANCE

BRIDGE - BIG BRIDGE

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
KENT	I-196	I-196 WB over GRAND RIVER, US-131, LOCAL STREETS	Overlay - Deep	0.07		CON			
				0.07					

BRIDGE - REPLACEMENT AND REHABILATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
KENT	I-196	I-196 M-21 WB over PLYMOUTH ROAD	Bridge Replacement	0.326				CON	
KENT	I-196	I-196 WB RAMP TO M-11 over I-196 EB	Overlay - Deep	0.001		CON			
KENT	I-196 (Gerald R Ford Freeway)	I-196 EB over M-45 WB RAMP TO I-196 WB	Overlay - Shallow	0	CON				
ALLEGAN	I-196 AND US-31 NB	I-196 and US-31 NB over OLD ALLEGAN ROAD	Overlay - Deep	0.326	CON				
ALLEGAN	I-196 AND US-31 SB	I-196 and US-31 SB over OLD ALLEGAN ROAD	Overlay - Deep	0.319	CON				
ALLEGAN	I-196 AND US-31 SB	I-196/US-31 SB over KUIPERS DRAIN	Culvert Replacement	0.804					CON
OTTAWA	I-196 BL	I-196 BL EB over BRANCH OF BLACK RIVER	Overlay - Deep	0.33			CON		
OTTAWA	I-196 BL	I-196 BL WB over BRANCH OF BLACK RIVER	Overlay - Deep				CON		
KENT	I-196 EB	I-196 EB over M-45	Overlay - Shallow	0	CON				
IONIA	I-96	CUTLER ROAD over I-96	Bridge Replacement	0.604				CON	
IONIA	I-96	M-66 NB over I-96	Overlay - Shallow	0.002		CON			
IONIA	I-96	M-66 SB over I-96	Overlay - Shallow			CON			
KENT	I-96	CHENEY AVENUE over I-96	Deck Replacement	0		CON			
KENT	I-96	CASCADE ROAD over I-96	Bridge Replacement	0	CON				
KENT	I-96	MORSE LAKE AVENUE over I-96	Overlay - Shallow	0.982		CON			
KENT	M-21	M-21 over GTW RR	Superstructure Replacement	0.087	CON				
BARRY	M-66	M-66 over QUAKER BROOK	Bridge Replacement	0.092					CON
ALLEGAN	M-89	M-89 over KALAMAZOO RIVER OVERFLOW	Superstructure Replacement	1.504				CON	
ALLEGAN	US-131	M-222 over US-131	Bridge Replacement	0.001	CON				
KENT	US-131	I-196 BS (FRANKLIN) over US-131, I-196 BS and CSX RR	Substructure Replacement	0.13		CON			
KENT	US-131	US-131 RAMP B M-21 over VACANT LAND	Substructure Patching			CON			
KENT	US-131	US-131 RAMP A M-21 over VACANT LAND	Substructure Patching			CON			
KENT	US-131 NB	US-131 NB over WHITE CREEK AVENUE	Overlay - Deep	0.277				CON	
KENT	US-131 SB	US-131 SB over WHITE CREEK AVENUE	Overlay - Deep	0.436			CON		
MUSKEGON	US-31	PONTALUNA ROAD over US-31	Overlay - Shallow	0.16		CON			
OTTAWA	US-31	US-31 over BARRMAN DRAIN	Culvert Replacement	0.52		CON			
OTTAWA	US-31	US-31 NB over BLACK RIVER	Overlay - Deep	0.344		CON			
OTTAWA	US-31	US-31 SB over BLACK RIVER	Overlay - Deep			CON			
OTTAWA	US-31	US-31 over I-196 BL	Overlay - Deep	0.035		CON			
OCEANA	US-31 BR (Polk Road)	US-31 BR (POLK ROAD) over RUSSELL CREEK	Culvert Replacement	0.492					CON
				0.326					

EPE– Study/Environmental PE–Preliminary Engineering/Design PE-B–Preliminary Engineering/Design for Bridges
UTL–Utility work ROW–Right of way/Real Estate CON–Construction

2015 - 2019 ROAD AND BRIDGE PROJECT LISTS

GRAND REGION - WEST MICHIGAN PROSPERITY ALLIANCE

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
ALLEGAN	I-196	SB ONLY, 130TH AVENUE NORTH TO US-31	Reconstruction	7.375					CON
KENT	I-196 (Gerald R Ford Freeway)	FULLER AVENUE TO I-96	Reconstruction	2.051				CON	
KENT	I-196 (Gerald R Ford Freeway)	I-196 (EB) over Plymouth Avenue	Bridge Replacement					CON	
OTTAWA	I-196 WB	32ND AVENUE EAST TO OTTAWA/KENT COUNTY LINE	Reconstruction	4.477					CON
OTTAWA	I-196 WB	32ND AVENUE EAST TO OTTAWA/KENT COUNTY LINE	Maintenance of Traffic	4.868				CON	
KENT	I-96	WEST RIVER DRIVE TO THE GRAND RIVER	Reconstruction	0.472				CON	
KENT	M-11	HAYES STREET TO WILSON AVENUE	Resurface	2.209	CON				
MUSKEGON	M-120 (Holton Road)	WHITEHALL ROAD EAST TO MID-MICHIGAN RR	Restoration and Rehabilitation	0.696			CON		
MUSKEGON	M-120 (Holton Road)	MID-MICHIGAN RR EAST TO GETTY STREET	Restoration and Rehabilitation	1.203					CON
KENT	M-21 (Main Street)	VALLEY VISTA DRIVE EAST TO KENT/IONIA COUNTY LINE	Resurface	2.298	CON				
NEWAYGO	M-37 (Maple Street)	COMMERCE STREET TO STATE STREET	Resurface	0.332				CON	
NEWAYGO	M-37 (State Road)	M-82 (S JUNCTION) NORTH TO THE MUSKEGON RIVER	Resurface	1.541				CON	
ALLEGAN	M-40	FROM 134TH AVENUE TO REIMINK ROAD	Reconstruction	1.754				CON	
ALLEGAN	M-40	FROM CABILL DRIVE TO NORTH OF 52ND STREET	Traffic Operations or Safety Work	1.494	CON				
KENT	M-44 (Belding Road)	WOLVERINE BOULEVARD EAST TO BLAKELY DRIVE	Reconstruction	1.044			CON		
MONTCALM	M-46 (Howard City - Edmore Road)	M-66 TO SECOND STREET	Restoration and Rehabilitation	2.003					CON
IONIA	M-66 (State Road)	BARRY/IONIA COUNTY LINE NORTH TO PORTLAND ROAD	Restoration and Rehabilitation	6.994					CON
KENT	US-131	10 MILE ROAD TO M-46 (S JUNCTION)	Maintenance of Traffic	7.513	CON				
KENT	US-131	KENT SOUTH COUNTY LINE TO 76TH STREET	Maintenance of Traffic	4.053					CON
OSCEOLA	US-131	SOUTH OF US-10 INTERCHANGE TO NORTH OF US-10	Restoration and Rehabilitation	2.27	CON				
OSCEOLA	US-131	SOUTH COUNTY LINE TO SOUTH OF US-10	Restoration and Rehabilitation	3.362	CON				
ALLEGAN	US-131 NB	FROM GUN RIVER BRIDGE (B02) NORTH TO 110TH AVENUE	Restoration and Rehabilitation	1.311	CON				
KENT	US-131 NB	10 MILE ROAD TO M-46 (S JUNCTION)	Reconstruction	7.422				CON	
MECOSTA	US-131 NB	6 MILE ROAD NORTH TO 13 MILE ROAD	Restoration and Rehabilitation	7.373		CON			
KENT	US-131 SB	10 MILE ROAD TO M-46	Reconstruction	7.403			CON		
MASON	US-31	US-10 TO 0.8 MILES N OF NORTH MASON COUNTY LINE	Restoration and Rehabilitation	16.695					CON
OCEANA	US-31	FRUITVALE ROAD NORTH TO WINSTON ROAD	Resurface	5.366		CON			
OTTAWA	US-31	8TH STREET TO LAKEWOOD BOULEVARD	Reconstruction	1.188		CON			
OTTAWA	US-31	LAKEWOOD BOULEVARD TO QUINCY STREET	Major Widening	2.898		CON			
MUSKEGON	US-31 BR (Colby Street)	HALL STREET TO THE WHITE RIVER	Resurface	1.234			CON		
MUSKEGON	US-31 BR (Seaway Drive)	US-31 NORTH TO SHORELINE DRIVE	Resurface	5.471	CON				
MUSKEGON	US-31 BR (Seaway Drive)	US-31 BR over LITTLE BLACK CREEK	Overlay - Epoxy		CON				
				114.37					

CAPACITY IMPROVEMENT

US-31, HOLLAND TO GRAND HAVEN

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
OTTAWA	US-31	LAKEWOOD BOULEVARD NORTH TO QUINCY STREET	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG	2.898		CON	CON	CON	
OTTAWA	US-31	LAKEWOOD BOULEVARD NORTH TO QUINCY STREET	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG		PE	PE			
OTTAWA	US-31	LAKEWOOD BOULEVARD NORTH TO QUINCY STREET	MAINTENANCE OF TRAFFIC	2.898	CON	CON	CON		
				5.796					

NEW ROADS

US-31, HOLLAND TO GRAND HAVEN

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
OTTAWA	I-96	OVER ABANDONED GTW RR	BRIDGE REMOVAL	0	CON	CON			
OTTAWA	I-96	AT M-231	NEW STRUCTURE - EXISTING ROUTE	2.237	CON	CON			
OTTAWA	M-104 (Cleveland Street)	124TH AVENUE TO I-96 (EB)	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG	0.724	CON				
OTTAWA	M-231	M-45 TO LITTLE ROBINSON CREEK	NEW ROUTES	4.476	CON				
OTTAWA	M-231	M-45 TO LITTLE ROBINSON CREEK	NEW ROUTES		UTIL	UTIL	UTL		
OTTAWA	M-231	OVER THE GRAND RIVER (RIVER SPAN)	NEW STRUCTURE ON NEW ROUTE	0	CON	CON			
OTTAWA	M-231	OVER THE GRAND RIVER (APPROACH SPANS)	NEW STRUCTURE ON NEW ROUTE	1.328	CON	CON			
OTTAWA	M-231	THE GRAND RIVER NORTH TO M-104	NEW ROUTES	1.996	CON				
OTTAWA	M-231	THE GRAND RIVER NORTH TO M-104	NEW ROUTES		UTIL				
OTTAWA	M-231	OVER LEONARD STREET	NEW STRUCTURE ON NEW ROUTE	0	CON				
OTTAWA	M-231	OVER RICH STREET	NEW STRUCTURE ON NEW ROUTE	0	CON	CON	CON		
OTTAWA	M-231	OVER BUCHANAN STREET	NEW STRUCTURE ON NEW ROUTE	0	CON	CON	CON		
OTTAWA	M-231	OVER SLEEPER STREET	NEW STRUCTURE ON NEW ROUTE	0	CON	CON	CON		
				10.761					

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METRO REGION

METRO REGION - DETROIT METRO PROSPERITY REGION

BRIDGE - BIG BRIDGE

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
OAKLAND	I-696	PLAZA OVER I-696, SOUTHFIELD	Drain System Clean/Repair	0.276		CON			
OAKLAND	I-696	PLAZA OVER I-696, IN OAK PARK	Drain System Clean/Repair			CON			
OAKLAND	I-696	PLAZA & CHURCH STREET OVER I-696 IN OAK PARK	Drain System Clean/Repair	0.189		CON			
WAYNE	I-75	I-75 over ROUGE RIVER, DEARBORN STREET and RR	Deck Replacement	0.08			CON		
WAYNE	I-75	I-75 NB OFF RAMP over ROUGE RIVER, RR, MAINT ROAD	Deck Replacement				CON		
WAYNE	I-75	I-75 SB ON RAMP over ROUGE RIVER and PLEASANT STREET	Deck Replacement				CON		
WAYNE	I-75	I-75 over FORT STREET	Deck Replacement	0.369			CON		
WAYNE	I-96	EVERGREEN ROAD over I-96 and CSX RR	Overlay - Deep	0.175	CON				
				1.089					

BRIDGE - REPLACEMENT AND REHABILATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
MACOMB	M-53	M-53 SB over CLINTON RIVER	Overlay - Deep	0.372				CON	
MACOMB	M-53	M-53 NB over CLINTON RIVER	Overlay - Shallow					CON	
OAKLAND	I-696	I-696 over I-96 and I-275	Overlay - Deep	0.028		CON			
OAKLAND	I-75	JOHN R SB TURNAROUND RAMP over I-75	Superstructure Repair, Steel	0	CON				
OAKLAND	M-5	I-96 BL (GRAND RIVER) over M-5	Overlay - Deep	0				CON	
OAKLAND	M-5	DRAKE ROAD over M-5	Deck Patching	0				CON	
OAKLAND	TROWBRIDGE ROAD	TROWBRIDGE ROAD over GTW RAILROAD	Superstructure Repair, Concrete	0.01				CON	
WAYNE	I-275	I-275 SB over CSX RR	Substructure Repair	0.658	CON				
WAYNE	I-275	I-275 SB over M-14	Substructure Replacement		CON				
WAYNE	I-75	I-75 East-North RAMP over M-10	Deck Replacement	0.214			CON		
WAYNE	I-75	I-94 West-South Ramp over I-75 and Ramp	Superstructure Repair, Steel	0.123	CON				
WAYNE	I-75	I-75 SOUTH-WEST RAMP over NORTH SERVICE ROAD	Superstructure Repair, Steel	0.01	CON				
WAYNE	I-75	I-75 NB over ALLEN ROAD	Superstructure Repair, Steel	0.205				CON	
WAYNE	I-75	I-75 SB over ALLEN ROAD	Superstructure Repair, Steel					CON	
WAYNE	I-75 (US-24 Connector)	I-75 SB over US-24 CONNECTOR	Deck Replacement	9.359				CON	
WAYNE	I-75 (US-24 Connector)	I-75 NB over EUREKA ROAD	Deck Replacement					CON	
WAYNE	I-75 (US-24 Connector)	I-75 SB over EUREKA ROAD	Deck Replacement					CON	
WAYNE	I-75 (US-24 Connector)	I-75 NB over NORTH LINE ROAD	Deck Replacement					CON	
WAYNE	I-75 (US-24 Connector)	I-75 SB over NORTH LINE ROAD	Deck Replacement					CON	
WAYNE	I-94	CSX RR over I-94	Substructure Repair	0				CON	
WAYNE	I-94	CONRAIL RR over I-94	Substructure Repair					CON	
WAYNE	I-94	GTW and CONRAIL RR over I-94	Painting Complete					CON	
WAYNE	I-94	I-94 WB over WAYNE ROAD	Substructure Repair	0.07				CON	
WAYNE	I-94	I-94 WB over ECORSE ROAD	Bridge Replacement	0.375				CON	
WAYNE	I-94	I-94 EB RAMP TO M-10 over I-94 WB and M-10 SB	Overlay - Shallow	0				CON	
WAYNE	I-94 (Ford Freeway)	TRUMBULL AVENUE over I-94, Wayne County	Bridge Replacement	0.179	CON				
WAYNE	I-96	CHERRYLAWN PEDESTRIAN STRUCTURE over I-96	Deck Replacement	0.311		CON			
WAYNE	M-10	RAILROAD PEDESTRIAN WALK over M-10	Bridge Removal	0.079			CON		
WAYNE	M-10 (John C Lodge Freeway)	M L KING (STIMSON) over M-10	Superstructure Replacement	0.111				CON	
WAYNE	M-14 OLD	OLD M-14 over MIDDLE ROUGE RIVER	Bridge Replacement	0.139			CON		
WAYNE	M-14 OLD	HINES DRIVE over OLD M-14 (ANN ARBOR ROAD)	Bridge Replacement	0.139			CON		
WAYNE	M-3 (Gratiot Avenue)	M-3 NB Connector over I-75 and I-375	Superstructure Repair, Steel	0.001	CON				
WAYNE	M-3 (Gratiot Avenue)	M-3 SB Connector over I-75 and I-375	Superstructure Repair, Steel		CON				
WAYNE	M-39	SAWYER AVENUE WALKOVER over M-39	Bridge Replacement	1.542			CON		
WAYNE	M-39	TOURNIER AVENUE WALKOVER over M-39	Bridge Replacement				CON		
WAYNE	M-39	CATHEDRAL AVENUE WALKOVER over M-39	Bridge Replacement				CON		
WAYNE	M-39	VASSAR AVENUE WALKOVER over M-39	Bridge Replacement				CON		
WAYNE	M-39	GLENDALE WALKOVER over M-39	Bridge Replacement				CON		

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METRO REGION - DETROIT METRO PROSPERITY REGION

BRIDGE - REPLACEMENT AND REHABILITATION continued

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
WAYNE	M-39	CSX RR over M-39	Painting Complete				CON		
WAYNE	M-8	SB OAKLAND AVENUE over M-8, DAVISON FREEWAY	Deck Replacement	0.1	CON				
WAYNE	M-8	NB OAKLAND AVENUE over M-8, DAVISON FREEWAY	Painting Complete		CON				
WAYNE	M-8 EAST-SOUTH RAMP	M-8 East-South Ramp over GTW RR	Overlay - Deep	2.687	CON				
WAYNE	M-85	M-85 over Michigan Central RR (Abandoned)	Bridge Removal	0.07	CON				
WAYNE	M-85	M-85 NB over MARSH CREEK	Bridge Replacement	1.282	CON				
WAYNE	M-85	M-85 SB over MARSH CREEK	Overlay - Shallow		CON				
WAYNE	M-85	M-85 NB over FRANK and POET DRAIN	Overlay - Shallow		CON				
WAYNE	M-85	M-85 SB over FRANK and POET DRAIN	Overlay - Shallow		CON				
WAYNE	S I-75/WARREN RAMP	I-75 SB EXIT RAMP over I-75 EB and WB TO SB TURN ROADWAY	Deck Replacement	0				CON	
WAYNE	US-24 (Telegraph Road)	US-24 NB over FRANK and POET DRAIN	Bridge Replacement	0.06				CON	
				18.124					

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
MACOMB	M-53 (Van Dyke Road)	15 MILE ROAD TO 18 MILE ROAD	Reconstruction	3.244	CON				
MACOMB	M-59 (Hall Road)	M-53 TO HAYES ROAD	Reconstruction	1.807			CON		
OAKLAND	I-96	FROM NORTH OF 5 MILE ROAD TO I-696/I-96 INTERCHANGE	Resurface	12.994		CON			
OAKLAND	M-24	HARMON ROAD TO GOLDENGATE AVENUE	Resurface	4.989		CON			
WAYNE	I-75 (Walter P Chrysler Freeway)	N OF CANFIELD STREET TO S OF PIQUETTE STREET	Resurface	0.999			CON		
WAYNE	M-14 OLD	NEWBURGH ROAD TO MARKET STREET	Reconstruction	0.393			CON		
				24.426					

NEW INTERNATIONAL TRADE CROSSING (NITC)

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
WAYNE	I-75 (NITC)	AT I-75 AND TO THE NITC	NEW ROUTES	1.755	EPE	EPE			
WAYNE	I-75 (NITC)	AT I-75 AND TO THE NITC	NEW ROUTES				CON	CON	CON
WAYNE	I-75 (NITC)	AT I-75 AND TO THE NITC	NEW ROUTES		ROW	ROW	ROW		
WAYNE	I-75 (NITC)	AT I-75 AND TO THE NITC	NEW ROUTES				PE		
WAYNE	I-75 (NITC)	AT I-75 AND TO THE NITC	NEW ROUTES				UTL	UTL	
				1.755					

TRUNKLINE MODERNIZATION

I-75, FROM M-59 TO 8 MILE ROAD

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
OAKLAND	I-75	FROM NORTH OF COOLIDGE ROAD TO SOUTH BOULEVARD	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG	3.678		CON	CON	CON	
OAKLAND	I-75	FROM NORTH OF COOLIDGE ROAD TO SOUTH BOULEVARD	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG		PE	PE	PE		
OAKLAND	I-75	FROM 8 MILE TO M-59, OAKLAND COUNTY	PROJECT MANAGEMENT CONTRACT	18.54	EPE	EPE	EPE	EPE	EPE
OAKLAND	I-75	FROM 8 MILE TO M-59, OAKLAND COUNTY	REAL ESTATE ACTIVITIES	18.54		ROW	ROW	ROW	ROW
OAKLAND	I-75	FROM NORTH OF WATTLES ROAD TO NORTH OF COOLIDGE ROAD	MAJOR REHABILITATION	1.582				CON	CON
OAKLAND	I-75	FROM NORTH OF WATTLES ROAD TO NORTH OF COOLIDGE ROAD	MAJOR REHABILITATION			PE	PE	PE	
OAKLAND	I-75	FROM NORTH OF I-696 TO SOUTH OF 12 MILE	MAJOR REHABILITATION					PE	PE
				42.34					

TRUNKLINE MODERNIZATION

I-94, I-96 TO EAST OF CONNER AVENUE IN DETROIT

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
WAYNE	I-94 (Ford Freeway)	VAN DYKE (M-53) OVER I-94 IN THE CITY OF DETROIT	BRIDGE REPLACEMENT	0.283	CON				
WAYNE	I-94 (Ford Freeway)	VAN DYKE (M-53) OVER I-94 IN THE CITY OF DETROIT	BRIDGE REPLACEMENT		UTL	UTL			
WAYNE	I-94 (Ford Freeway)	M-3 OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		UTL	UTL			
WAYNE	I-94 (Ford Freeway)	M-3 OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT	0.001			CON	CON	CON
WAYNE	I-94	CHENE STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT	0.339			CON	CON	
WAYNE	I-94	CHENE STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		ROW	ROW			
WAYNE	I-94	CHENE STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE-B	PE-B	PE-B		
WAYNE	I-94 (Ford Freeway)	SECOND AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT	0.074			CON	CON	
WAYNE	I-94 (Ford Freeway)	SECOND AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		ROW	ROW			
WAYNE	I-94 (Ford Freeway)	SECOND AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE	PE	PE		
WAYNE	I-94 (Ford Freeway)	SECOND AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE-B	PE-B	PE-B		
WAYNE	I-94 (Ford Freeway)	SECOND AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		UTL	UTL	UTL		
WAYNE	I-94 (Ford Freeway)	CADILLAC AVENUE, DETROIT, WAYNE COUNTY	BRIDGE REPLACEMENT	0.01			CON	CON	
WAYNE	I-94 (Ford Freeway)	CADILLAC AVENUE, DETROIT, WAYNE COUNTY	BRIDGE REPLACEMENT		ROW	ROW			

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METRO REGION - DETROIT METRO PROSPERITY REGION

TRUNKLINE MODERNIZATION - continued

I-94, I-96 TO EAST OF CONNER AVENUE IN DETROIT

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
WAYNE	I-94 (Ford Freeway)	CADILLAC AVENUE, DETROIT, WAYNE COUNTY	BRIDGE REPLACEMENT		PE	PE	PE		
WAYNE	I-94 (Ford Freeway)	CADILLAC AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE-B	PE-B	PE-B		
WAYNE	I-94 (Ford Freeway)	CADILLAC AVENUE, DETROIT, WAYNE COUNTY	BRIDGE REPLACEMENT		UTL	UTL			
WAYNE	I-94	FRENCH RD OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT	0.189				CON	CON
WAYNE	I-94	FRENCH RD OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		ROW	ROW			
WAYNE	I-94	FRENCH RD OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE	PE	PE		
WAYNE	I-94	FRENCH ROAD OVER I-94	BRIDGE REPLACEMENT		PE-B	PE-B	PE-B		
WAYNE	I-94	FRENCH RD OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		UTL	UTL			
WAYNE	I-94 (Ford Freeway)	CONCORD AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT	0.129				CON	CON
WAYNE	I-94 (Ford Freeway)	CONCORD AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		ROW	ROW	ROW		
WAYNE	I-94 (Ford Freeway)	CONCORD AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE	PE			
WAYNE	I-94 (Ford Freeway)	CONCORD AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		UTL	UTL	UTL		
WAYNE	I-94	MOUNT ELLIOT STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT	0.074			CON	CON	
WAYNE	I-94	MOUNT ELLIOT STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		ROW	ROW			
WAYNE	I-94	MOUNT ELLIOT STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE	PE	PE		
WAYNE	I-94	MOUNT ELLIOT STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE-B	PE-B	PE-B		
WAYNE	I-94	MOUNT ELLIOT STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		UTL	UTL	UTL		
WAYNE	I-94 (Ford Freeway)	CASS AVENUE, DETROIT, WAYNE CO.	BRIDGE REPLACEMENT	0.13			CON	CON	
WAYNE	I-94 (Ford Freeway)	CASS AVENUE, DETROIT, WAYNE CO.	BRIDGE REPLACEMENT		ROW	ROW			
WAYNE	I-94 (Ford Freeway)	CASS AVENUE, DETROIT, WAYNE CO.	BRIDGE REPLACEMENT		PE	PE	PE		
WAYNE	I-94 (Ford Freeway)	CASS AVENUE OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE-B	PE-B	PE-B		
WAYNE	I-94 (Ford Freeway)	CASS AVENUE, DETROIT, WAYNE COUNTY	BRIDGE REPLACEMENT		UTL	UTL	UTL		
WAYNE	I-94 (Ford Freeway)	BRUSH STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT	0.138				CON	CON
WAYNE	I-94 (Ford Freeway)	BRUSH STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		ROW	ROW	ROW		
WAYNE	I-94 (Ford Freeway)	BRUSH STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		PE	PE	PE		
WAYNE	I-94 (Ford Freeway)	BRUSH STREET OVER I-94	BRIDGE REPLACEMENT		PE-B	PE-B			
WAYNE	I-94 (Ford Freeway)	BRUSH STREET OVER I-94, WAYNE COUNTY	BRIDGE REPLACEMENT		UTL	UTL	UTL		
WAYNE	I-94 (Ford Freeway)	NORTHEAST QUADRANT OF I-94 AND I-75	REAL ESTATE ACTIVITIES	0.131	CON				
WAYNE	I-94 (Ford Freeway)	NORTHEAST QUADRANT OF I-94 AND I-75	REAL ESTATE ACTIVITIES		ROW				
WAYNE	I-94 (Ford Freeway)	I-96 TO CONNER AVENUE, WAYNE COUNTY	PROJECT MANAGEMENT CONTRACT	7.239	EPE	EPE	EPE	EPE	EPE
WAYNE	I-94 (Ford Freeway)	FROM I-96 TO EAST OF CONNER AVENUE	REAL ESTATE ACTIVITIES	7.239	ROW	ROW	ROW	ROW	
WAYNE	I-94 (Ford Freeway)	FROM CONNER AVENUE TO CHENE STREET	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG	7.598					CON
WAYNE	I-94 (Ford Freeway)	FROM CONNER AVENUE TO CHENE STREET	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG					ROW	
WAYNE	I-94 (Ford Freeway)	FROM CONNER AVENUE TO CHENE STREET	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG					PE	PE
WAYNE	M-1 (Woodward Avenue)	M-1 (WOODWARD AVENUE) OVER I-94	BRIDGE REPLACEMENT	0.073	CON	CON	CON		
				23.647					

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2015 - 2019 ROAD AND BRIDGE PROJECT LISTS

NORTH REGION - NORTHEAST PROSPERITY REGION

BRIDGE - BIG BRIDGE

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
CHEBOYGAN	US-23	US-23 over CHEBOYGAN RIVER	Superstructure Repair, Steel	0.097		CON			
				0.097					

BRIDGE - REPLACEMENT AND REHABILATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
CHEBOYGAN	I-75	I-75 SB over M-27	Bridge Barrier Railing Replace	0.369		CON			
CHEBOYGAN	I-75	I-75 NB over M-27	Bridge Barrier Railing Replace			CON			
CHEBOYGAN	US-23	US-23 over LITTLE BLACK RIVER	Bridge Replacement	0.374	CON				
CRAWFORD	M-72	I-75 BL, M-72 over AU SABLE RIVER	Bridge Barrier Railing Replace	0.133	CON				
ROSCOMMON	I-75	M-18 over I-75	Overlay - Deep	0.36				CON	
ROSCOMMON	M-18	M-18 over BACKUS CREEK	Culvert Replacement	2.145					CON
				3.381					

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
CHEBOYGAN	M-33	FROM M-27 TO LONG LAKE ROAD	Restoration and Rehabilitation	6.258					CON
CRAWFORD	M-72	KALKASKA COUNTY LINE TO M-93 INTERSECTION	Restoration and Rehabilitation	6.048			CON		
IOSCO	US-23 (Huron Road)	TAWAS BEACH ROAD TO KIRKLAND DRIVE	Reconstruction	5.628			CON		
MONTMORENCY	M-32	JEROME STREET TO HAAS ROAD	Restoration and Rehabilitation	3.381				CON	
OGEMAW	I-75 NB	FROM OGEMAW COUNTY LINE NORTHERLY TO COOK ROAD	Restoration and Rehabilitation	6.487					CON
OSCODA	M-33	POPPS ROAD TO EAST OF THE M-33/M-72 JCT	Restoration and Rehabilitation	6.719					CON
ROSCOMMON	US-127	M-55 TO MUSKEGON RIVER BRIDGE	Restoration and Rehabilitation	5.191		CON			
				39.712					

NORTH REGION - NORTHWEST PROSPERITY REGION

BRIDGE - BIG BRIDGE

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
CHARLEVOIX	US-31	US-31 over ISLAND LAKE OUTLET	Superstructure Repair, Steel	0.072		CON			
				0.072					

BRIDGE - REPLACEMENT AND REHABILATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
GRAND TRAVERSE	US-31	US-31 over BOARDMAN RIVER	Overlay - Deep	0.271			CON		
				0.271					

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
ANTRIM	US-131	NORTH JUNCTION OF M-32 TO THUMB LAKE ROAD	Reconstruction	7.647		CON			
BENZIE	M-115	FROM US-31 WEST APPROX. 2.4 MILES	Reconstruction	2.381		CON			
BENZIE	M-115	FROM BRIDGE STREET EAST 4 MILES	Restoration and Rehabilitation	4.109			CON		
EMMET	US-31	FROM DOUGLAS LAKE ROAD TO E LEVERING ROAD	Restoration and Rehabilitation	4.19				CON	
EMMET	US-31	FROM LIBERTY STREET TO ROSEDALE AVENUE	Reconstruction	1.339				CON	
EMMET	US-31 (Charlevoix Avenue)	CAMP DAGGETT ROAD TO US-131	Restoration and Rehabilitation	4.189	CON				
GRAND TRAVERSE	M-113	N OF M-186 SOUTH TO US-131	Restoration and Rehabilitation	5.088		CON			
GRAND TRAVERSE	US-31	3 MILE ROAD TO HOLIDAY HILLS ROAD	Reconstruction	1.555	CON				
KALKASKA	M-72	GRAND TRAVERSE COUNTY LINE EAST TO KALKASKA ROAD	Restoration and Rehabilitation	7.731				CON	
MISSAUKEE	M-66/55	JENNINGS ROAD TO 1ST STREET	Reconstruction	0.968		CON			
WEXFORD	US-131 OLD	N OF US-131 S CROSSING TO M-42	Reconstruction	5.483			CON		
				44.68					

EPE= Study/Environmental PE=Preliminary Engineering/Design PE-B=Preliminary Engineering/Design for Bridges
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2015 - 2019 ROAD AND BRIDGE PROJECT LISTS

SOUTHWEST REGION - SOUTHWEST PROSPERITY REGION

BRIDGE - REPLACEMENT AND REHABILATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
BERRIEN	I-196	M-63 over I-196	Bridge Replacement	0.3				CON	
BERRIEN	I-94	COUNTY LINE ROAD over I-94	Overlay - Shallow	2.643	CON				
BERRIEN	I-94	CARMODY ROAD over I-94	Overlay - Shallow		CON				
BERRIEN	I-94	EMPIRE ROAD over I-94	Overlay - Shallow		CON				
BERRIEN	I-94	LAPORTE ROAD over I-94	Overlay - Deep	1.511				CON	
BERRIEN	I-94	KRUGER ROAD over I-94	Overlay - Deep					CON	
BERRIEN	I-94	LAKESIDE ROAD over I-94	Overlay - Deep					CON	
BERRIEN	I-94 EB AND WB	I-94 EB over PUETZ ROAD	Overlay - Deep	1.477		CON			
BERRIEN	I-94 EB AND WB	I-94 WB over PUETZ ROAD	Substructure Repair			CON			
BERRIEN	I-94 EB AND WB	I-94 EB over CSX RR Spur (Abandoned)	Overlay - Deep	1.508		CON			
BERRIEN	I-94 EB AND WB	I-94 WB over CSX RR Spur (Abandoned)	Overlay - Deep			CON			
BRANCH	US-12	US-12 over MICHIGAN SOUTHERN RR	Bridge Replacement	0.189		CON			
BRANCH	US-12	US-12 over SWAN CREEK	Bridge Replacement	0.38	CON				
CALHOUN	I-69	L DRIVE NORTH over I-69	Overlay - Deep	0.973	CON				
KALAMAZOO	I-94	CORK STREET over I-94	Bridge Removal	0.063	CON				
KALAMAZOO	I-94	I-94 over EAST MICHIGAN AVENUE (40TH STREET)	Bridge Replacement	1.028		CON			
KALAMAZOO	US-131	US-131 NB over AMTRAK and KL AVENUE	Deck Replacement	0					CON
KALAMAZOO	US-131	US-131 SB over AMTRAK and KL AVENUE	Deck Replacement						CON
ST. JOSEPH	M-86	M-86 over PRAIRIE RIVER	Bridge Replacement	0.999		CON			
VAN BUREN	BLUE STAR HIGHWAY	BLUE STAR HIGHWAY over BLACK RIVER	Superstructure Replacement	0.001		CON			
VAN BUREN	I-94	64TH ST (CR687) over I-94	Overlay - Shallow	1.979	CON				
VAN BUREN	I-94	62ND STREET over I-94	Overlay - Shallow		CON				
VAN BUREN	I-94	52ND STREET (CR 365) over I-94	Overlay - Shallow		CON				
VAN BUREN	I-94	50TH STREET over I-94	Overlay - Shallow		CON				
VAN BUREN	I-94	I-94 EB over EAST BRANCH OF PAW PAW RIVER	Superstructure Replacement	2.413	CON				
VAN BUREN	I-94	I-94 WB over EAST BRANCH OF PAW PAW RIVER	Superstructure Replacement		CON				
				15.464					

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
BERRIEN	I-196	I-94 TO NORTH OF M-63 (EXIT 7)	Resurface	8.089				CON	
BERRIEN	I-94 WB	RED ARROW HIGHWAY (EXIT 16) TO I-94 BL (EXIT 23)	Resurface	4.991		CON			
BERRIEN	I-94 EB	RED ARROW HIGHWAY (EXIT 16) TO I-94 BL (EXIT 23)	Resurface	5.736			CON		
BRANCH	M-60	ST. JOSEPH COUNTY LINE TO CALHOUN COUNTY LINE	Resurface	7.989				CON	
CALHOUN	I-94	17 1/2 TO 21 1/2 MILE ROAD	Resurface	4.445			CON		
CALHOUN	I-94	I-94 EB over RICE CREEK	Healer Sealer				CON		
CALHOUN	I-94	I-94 WB over RICE CREEK	Healer Sealer				CON		
CALHOUN	I-94 BL (E Michigan Avenue)	29 MILE ROAD/CLARK STREET TO I-94	Resurface	1.964		CON			
CALHOUN	I-94 BL	WEST OF I-69 TO EAST OF SYCAMORE STREET	Restoration and Rehabilitation	1.624	CON				
CALHOUN	M-311 (11 Mile Road)	M-60 TO I-94 BL	Restoration and Rehabilitation	13.432					CON
CALHOUN	M-99 (Superior Street)	ASH STREET TO VINE STREET,ALBION	Reconstruction	0.374		CON			
CASS	M-40	1 MILE SOUTH OF M-60	Reconstruction	0.5				CON	
KALAMAZOO	I-94	UNDER SPRINKLE ROAD IN KALAMAZOO	Interchange Reconstruct	0.848	CON				
KALAMAZOO	I-94	SPRINKLE ROAD over I-94	Interchange Reconstruct		CON				
KALAMAZOO	I-94	AT E MICHIGAN AVENUE (40TH STREET)	Interchange Reconstruct	1.028		CON			

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SOUTHWEST REGION - SOUTHWEST PROSPERITY REGION

REPAIR AND REBUILD ROADS - continued

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
KALAMAZOO	I-94 BL	EAST OF SENECA LANE TO MICHIGAN AVENUE	Reconstruction	2.762		CON			
KALAMAZOO	US-131	FROM I-94 TO SHAVER ROAD	Resurface	6.616	CON				
ST. JOSEPH	M-60	IN THE VILLAGE OF MENDON	Reconstruction	1.086	CON				
ST. JOSEPH	US-131	FROM BROADWAY ROAD TO COON HOLLOW ROAD	Reconstruction	1.169				CON	
VAN BUREN	I-94 WB	0.7 MILES EAST OF CR 687 TO 0.8 MILES WEST OF M-51	Resurface	9.439	CON				
VAN BUREN	I-94 WB	I-94 over HOG CREEK	Joint Repair		CON				
VAN BUREN	M-140	CITY OF WATERVLIET TO CR 378	Resurface	7.218		CON			
				79.31					

CAPACITY IMPROVEMENT

I-94 IN KALAMAZOO

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
KALAMAZOO	I-94	EAST OF OAKLAND DRIVE TO WEST OF SPRINKLE ROAD	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG	4.899	ROW	ROW	ROW	ROW	ROW
KALAMAZOO	I-94	EAST OF LOVERS LANE TO EAST OF PORTAGE ROAD	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG	1.16	ROW	ROW	ROW	ROW	ROW
KALAMAZOO	I-94	I-94 OVER PORTAGE ROAD	REPLACE BRIDGE, ADD LANES		PE-B	PE-B	PE-B	PE-B	PE-B
KALAMAZOO	I-94	KILGORE ROAD OVER I-94	REPLACE BRIDGE, ADD LANES		PE-B	PE-B	PE-B	PE-B	PE-B
KALAMAZOO	I-94	PORTAGE ROAD TO SPRINKLE ROAD	RECONSTRUCT AND ADD LANE(S) OVER 0.5-MILE LONG	1.2	ROW	ROW	ROW	ROW	ROW
KALAMAZOO	I-94	I-94 OVER OLMSTEAD CREEK	REPLACE BRIDGE, ADD LANES		PE-B	PE-B	PE-B	PE-B	PE-B
KALAMAZOO	I-94	I-94 OVER NORFOLK SOUTHERN	REPLACE BRIDGE, ADD LANES		PE-B	PE-B	PE-B	PE-B	PE-B
KALAMAZOO	I-94	I-94 EB OVER GTW RAILROAD	REPLACE BRIDGE, ADD LANES		PE-B	PE-B	PE-B	PE-B	PE-B
KALAMAZOO	I-94	I-94 WB OVER GTW RAILROAD	REPLACE BRIDGE, ADD LANES		PE-B	PE-B	PE-B	PE-B	PE-B
				7.259					

NEW ROADS

US-31 RELOCATED, BERRIEN COUNTY

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
BERRIEN	I-94	BRITAIN AVENUE TO I-196	RELOCATION OF EXISTING ROUTE	3.015	PE	PE	PE	PE	PE
				3.015					

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2015 - 2019 ROAD AND BRIDGE PROJECT LISTS

SUPERIOR REGION - UPPER PENINSULA PROSPERITY REGION

BRIDGE - REPLACEMENT AND REHABILATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
MACKINAC	I-75	I-75 BL over I-75	Overlay - Deep	0.19	CON				
MARQUETTE	M-35	M-35 over BRANCH WARNER CREEK	Culvert Replacement	3.669	CON				
HOUGHTON	M-38	M-38 over SILVER RIVER	Bridge Replacement	1.4	CON				
ONTONAGON	M-64	M-64 over FLOODWOOD RIVER	Deck Replacement	0.588					CON
DELTA	US-2	US-2, US-41 over ESCANABA RIVER	Bridge Replacement	0.357			CON		
DELTA	US-2	E&LS RR over US-2	Bridge Replacement				CON		
DELTA	US-2	US-2 over OGONTZ RIVER	Bridge Replacement	0.983	CON				
MACKINAC	US-2	US-2 over BREVORT RIVER	Deck Replacement	5.617				CON	
MENOMINEE	US-2	US-2 over BIG CEDAR RIVER	Deck Replacement	0.722					CON
ONTONAGON	US-45	US-45 over EAST BRANCH BALTIMORE RIVER	Culvert Replacement	0.496	CON				
DICKINSON	US-8	US-8 over MENOMINEE RIVER	Overlay - Deep	0.343				CON	
				14.365					

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
MACKINAC	I-75 BL	MACKINAC TRAIL TO THE NORTH END OF I-75 BL	Reconstruction	0.62	CON				
MACKINAC	I-75 BL	FROM GRONDEN ROAD TO MACKINAC TRAIL	Reconstruction	1.108			CON		
CHIPPEWA	I-75 BS	EASTERDAY AVENUE TO THE POWER CANAL	Reconstruction	0.253	CON				
CHIPPEWA	I-75 BS (Ashmun Street)	FROM I-75/3 MILE ROAD RAMPS TO M-129	Reconstruction	1.739				CON	
LUCE	M-123	M-28 TO SOUTH OF TRUMAN STREET, NEWBERRY	Restoration and Rehabilitation	3.479		CON			
MENOMINEE	M-35	THE NORTH MENOMINEE CITY LIMIT NORTH 6 MILES	Resurface	6	CON				
MARQUETTE	M-553	M-553, SANDS TOWNSHIP, MARQUETTE COUNTY	Reconstruction	1.2			CON		
SCHOOLCRAFT	M-94	FROM CHIPPEWA AVENUE TO US-2	Reconstruction	1.281	CON				
DICKINSON	M-95	FROM CHANNING NORTH TO MARQUETTE COUNTY LINE	Restoration and Rehabilitation	9.494				CON	
DICKINSON	US-2	FROM DAWN'S LAKE ROAD TO BALER ROAD	Reconstruction	0.95		CON			
IRON	US-2	FROM URBAN STREET TO COUNTY ROAD 424	Restoration and Rehabilitation	2.39	CON				
IRON	US-2	FROM OSS ROAD EAST TO CRYSTAL FALLS	Resurface	5.165			CON		
IRON	US-2	BATES-AMASA ROAD TO EAST LAKE EMILY ROAD	Resurface	3.098		CON			
MACKINAC	US-2	EAST LIMITS OF NAUBINWAY TO BORGSTROM ROAD	Restoration and Rehabilitation	5.409					CON
GOGEBIC	US-2 (Cloverland Drive)	FROM CURRY STREET TO ROOSEVELT ROAD	Reconstruction	0.956	CON				
BARAGA	US-41	FROM OLD US-41 NORTH TO THE HOUGHTON COUNTY LINE	Restoration and Rehabilitation	6.946				CON	
HOUGHTON	US-41	THE LIFT BRIDGE TO LINCOLN DRIVE, HANCOCK	Reconstruction	0.929		CON			
MARQUETTE	US-41	IROQUOIS STREET IN NEGAUNEE TO ISHPEMING	Reconstruction	2.907			CON		
MARQUETTE	US-41	CR HQ TO WEST OF BRICKYARD ROAD, MARQUETTE	Reconstruction	1					CON
MARQUETTE	US-41/M-28	FROM THE CARP RIVER NORTH 0.6 MILES	Resurface	0.75	CON				
				55.674					

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2015 - 2019 ROAD AND BRIDGE PROJECT LISTS

UNIVERSITY REGION - SOUTH CENTRAL PROSPERITY REGION

BRIDGE - REPLACEMENT AND REHABILATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
EATON	I-69	AINGER ROAD over I-69	Overlay - Deep	0.348				CON	
EATON	M-100	M-100 over COUNTY DRAIN	Bridge Replacement	0.715	CON				
EATON	M-100	M-100 over SHARP DRAIN	Culvert Replacement		CON				
EATON	M-100	M-100 over GTW RR	Bridge Replacement		CON				
INGHAM	I-496	I-496 WB over I-496 EB RAMP TO I-96 EB	Painting Complete	0.688	CON				
INGHAM	I-496	I-496 and US-127 SB over I-96 EB	Overlay - Epoxy		CON				
INGHAM	I-96	I-96 EB over I-96 BL RAMPS	Overlay - Deep	0.15	CON				
INGHAM	I-96	I-96 WB over I-96 BL RAMPS	Overlay - Deep		CON				
INGHAM	I-96	I-96 EB over CEDAR STREET	Superstructure Repair, Steel	1.376	CON				
INGHAM	I-96	I-96 WB over CEDAR STREET	Superstructure Repair, Steel		CON				
INGHAM	I-96	I-96 EB over SYCAMORE CREEK	Substructure Patching	1.413	CON				
INGHAM	I-96	I-96 WB over SYCAMORE CREEK	Substructure Patching		CON				
INGHAM	I-96	I-96 EB over CONRAIL RR	Deck Patching		CON				
INGHAM	I-96	I-96 WB over CONRAIL RR	Substructure Patching		CON				
INGHAM	I-96	AURELIUS ROAD over I-96	Deck Replacement	0.244	CON				
				4.934					

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
EATON	I-69	VERMONTVILLE HIGHWAY TO I-96	Reconstruction	5.559			CON		
INGHAM	M-43 (Grand River Avenue)	PARK LAKE ROAD TO DOBIE ROAD	Resurface	2.07		CON			
				7.629					

CAPACITY IMPROVEMENT

US-127, I-69 TO ITHACA

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
CLINTON	US-127	NORTH OF ST. JOHNS TO THE CLINTON COUNTY LINE	NEW ROUTES	5.385	ROW				
				5.385					

UNIVERSITY REGION - SOUTHEAST MICHIGAN PROSPERITY REGION

BRIDGE - REPLACEMENT AND REHABILATION

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
JACKSON	I-94	I-94 over PARMA ROAD	Bridge Rehabilitation	1.171		CON			
JACKSON	I-94	GIBBS ROAD over I-94	Bridge Rehabilitation			CON			
JACKSON	I-94	BLACKMAN ROAD over I-94	Bridge Rehabilitation			CON			
JACKSON	I-94	I-94 over CONRAIL RR AND GRAND RIVER	Bridge Replacement	0.404				CON	
JACKSON	I-94	M-106 NB over I-94	Bridge Replacement	0.159				CON	
JACKSON	I-94	M-106 SB over I-94	Bridge Replacement					CON	
MONROE	I-75	I-75 over SANDY CREEK	Bridge Replacement	0.946	CON				
MONROE	I-75	I-75 over GTW and CR RR	Bridge Replacement		CON				
MONROE	I-75	I-75 over CN, GTW and NS RR	Bridge Replacement		CON				
MONROE	I-75	I-75 over SANDY CREEK ROAD	Bridge Replacement		CON				
MONROE	I-75	I-75 NB over STONY CREEK	Bridge Replacement	0.724	CON				
MONROE	I-75	I-75 SB over STONY CREEK	Bridge Replacement		CON				
MONROE	US-23	SUMMERFIELD ROAD over US-23	Bridge Replacement	0.21		CON			
WASHTENAW	US-23	NORTH TERRITORIAL ROAD over US-23	Bridge Replacement	0.605		CON			
WASHTENAW	US-23	6 MILE ROAD over US-23	Bridge Replacement			CON			

EPE-Preliminary Engineering/Design PE-Preliminary Engineering/Design for Bridges
UTL-Utilities ROW-Right of way/Land Acquisition CON-Construction

2015 - 2019 ROAD AND BRIDGE PROJECT LISTS

UNIVERSITY REGION - SOUTHEAST MICHIGAN PROSPERITY REGION

BRIDGE - REPLACEMENT AND REHABILATION - continued

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
WASHTENAW	US-23	8 MILE ROAD over US-23	Bridge Replacement			CON			
WASHTENAW	US-23	US-23 NB over MDOT RR	Widen - Maint Lanes	0.553		CON			
WASHTENAW	US-23	US-23 SB over MDOT RR	Widen - Maint Lanes			CON			
WASHTENAW	US-23	US-23 NB over BARKER ROAD	Widen - Maint Lanes			CON			
WASHTENAW	US-23	US-23 SB over BARKER ROAD	Widen - Maint Lanes			CON			
				4.772					

UNIVERSITY REGION - SOUTHEAST MICHIGAN PROSPERITY REGION

REPAIR AND REBUILD ROADS

COUNTY	ROUTE (COMMON NAME)	LOCATION	TYPE OF WORK	LENGTH	2015	2016	2017	2018	2019
JACKSON	I-94	M-60 TO SARGENT ROAD	Reconstruction	8.925				CON	
JACKSON	I-94 BL (Michigan Avenue)	BROWN TO LOUIS GLICK	Reconstruction	0.991		CON			
JACKSON	M-50	M-50, US-127 TO NAPOLEON ROAD	Resurface	5.916		CON			
JACKSON	M-50 (West Avenue)	GANSON STREET TO NORTH STREET	Reconstruction	0.284		CON			
JACKSON	M-60	EMERSON ROAD TO RENFREW ROAD	Restoration and Rehabilitation	2.528			CON		
JACKSON	M-60	CHAPEL ROAD TO EMERSON ROAD	Resurface	1.567			CON		
MONROE	I-75	DIXIE HIGHWAY TO I-275	Reconstruction	5.609	CON				
MONROE	I-75	I-75 FROM OHIO STATE LINE TO ERIE ROAD	Reconstruction	5.06					CON
WASHTENAW	M-17/US-12 BR (Cross Street)	NORMAL STREET TO MICHIGAN AVENUE, I-94 TO MICHIGAN AVENUE, HAMILTON STREET TO ECORSE ROAD	Resurface	2.588		CON			
WASHTENAW	US-12 (East Michigan Avenue)	US-12 FROM B01 TO MAPLE ROAD	Reconstruction	0.94		CON			
				34.408					

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MICHIGAN DEPARTMENT
OF TRANSPORTATION

2015-2019
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MDOT
Michigan Department of Transportation

Providing the highest quality integrated transportation
services for economic benefit and improved quality of life.

Creating Success with Our Transportation Assets

2040 Regional Transportation Plan for Southeast Michigan

Executive Summary

June 20, 2013

SEMCOG . . . Shaping the future of Southeast Michigan
Southeast Michigan Council of Governments

SEMCOG. . . *Shaping the future of Southeast Michigan*

Mission

SEMCOG, the Southeast Michigan Council of Governments, is the only organization in Southeast Michigan that brings together all of the region's governments to solve regional challenges.

SEMCOG strengthens local governments and regional decision making by:

- Providing data and unbiased analysis for informed decision making affecting Southeast Michigan and its local governments;
- Promoting the efficient use of tax dollars for both long-term infrastructure investment and shorter-term governmental efficiency;
- Delivering direct assistance to member governments in the areas of transportation, environments, and community and economic development;
- Solving regional issues that go beyond the boundaries of individual local governments; and
- Advocating on behalf of Southeast Michigan in Lansing and Washington.

Creating Success with Our Transportation Assets

June 20, 2013

Abstract

Creating Success with Our Transportation Assets: 2040 Regional Transportation Plan for Southeast Michigan describes how over $50 billion in revenues will be invested to support our transportation system, including the approximately $36 billion directed by this plan. It is responsive to the many new realities in the region, the country, and the world. Actions needed to improve the quality and reliability of the transportation system, increase our economic prosperity, reach a higher level of fiscal sustainability, broaden our access to vital destinations, make our communities more desirable, and protect our environment are described. Implementation of this plan will help improve Southeast Michigan's quality of life. The plan includes transportation projects anticipated during the life of the plan. *Creating Success with Our Transportation Assets* can be viewed online at www.semcog.org.

Preparation of this document may be financed in part through grants from and in cooperation with the Michigan Department of Transportation with the assistance of the U.S. Department of Transportation's Federal Highway Administration and Federal Transit Administration; U.S. Department of Housing and Urban Development; the Michigan Department of Natural Resources with the assistance of the U.S. Environmental Protection Agency; and local membership contributions.

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Executive Summary

Southeast Michigan's Transportation Assets

Southeast Michigan has a wealth of transportation assets that are vital to the economy and quality of life, and that are essential to the well-being of our residents and business community.

Southeast Michigan Transportation Assets

Southeast Michigan has a sophisticated transportation network that includes 23,400 miles of roads and supports over 100 million miles of travel each and every day.

It connects people to work, school, shopping, hospitals, social events, and other businesses.

- **23,400 miles of major roads**
- **More than 2,900 bridges**
- **More than 2,300 miles of fixed-route bus service**
- **at least 600 miles of walking or biking paths**
- **4,000 miles of all-season truck routes**
- **800 miles of main line rail**
- **35 airports**
- **Eight international border crossings**
- **Five commercial marine ports**
- **Seven rail/truck terminals**

Our transportation system connects residents with their individual community, the region, and to areas beyond. A variety of travel choices gives people who have differing transportation needs access to jobs, health care, shopping, educational and recreational opportunities, and the everyday necessities of life. Our transportation assets also provide for movement of freight throughout the region, and connect us to markets around the globe. Clearly, an effective transportation system is vital to economic vitality, business attraction and expansion, trade, tourism, and quality of life.

Southeast Michigan's transportation assets are key drivers of our economy and can be major contributors to the desirable communities that attract and retain a talented workforce.

Our transportation system supports and attracts private sector investment by linking businesses with customers, markets, supply chains/distribution networks, and employees.

Creating Success with Our Transportation Assets

Creating Success with Our Transportation Assets, Southeast Michigan's 2040 Regional Transportation Plan, is designed to reflect SEMCOG's adopted outcomes and performance measures. It emphasizes effectively using our finite resources to meet the needs of residents, businesses, and visitors in a manner that fits with the realities of the 21st Century and contributes to:

1. Economic Prosperity
2. Desirable Communities
3. Fiscally Sustainable Public Services
4. Reliable, Quality Infrastructure
5. Healthy, Attractive Environmental Assets
6. Access to Services, Jobs, Markets, and Amenities

The following *Creating Success in Southeast Michigan* framework highlights the performance measures SEMCOG will be tracking to monitor how our region's progress in achieving our desired outcomes. As a result of undertaking this more holistic, comprehensive approach to the Regional Transportation Plan, several lessons were learned. These lessons are described in many of the findings and culminated in the creation of a new framework for setting targets and maximizing our rate of return on our transportation investments. This framework is described in Chapter 4: Investing in Transportation.

Figure 1

Creating Success in Southeast Michigan Outcomes and Performance Measures

What We Need to Achieve: Outcomes

We Manage What We Measure: Performance Measures

Economic Prosperity	Desirable Communities	Fiscally Sustainable Public Services	Reliable, Quality Infrastructure	Healthy, Attractive Environmental Assets	Access to Services, Jobs, Markets, & Amenities
Percent of population age 25 and over with a bachelor's degree or above	Percent of 4th and 8th grade students at or above proficiency in reading, math, and science (MEAP scores)	Community Fiscal Indicator Score – number that are: - fiscal neutral - fiscal watch - fiscal stress	Percent of roads in good, fair, poor, condition	Percent of time in compliance with air quality standards	Percent of households with access to jobs
Percent of population age 25 and over with an associate's degree	ACT scores	Municipal credit rating	Percent of bridges in good, fair, poor condition	Percent of green cover	Percent of households with reasonable access to amenities such as: - entertainment venues - museums/cultural attractions - walking/biking facilities - parks - sports venues
Change in real regional Gross Domestic Product (GDP)	Violent crime rate Property crime rate	Number of region's local governments with multi-year budget	Infrastructure utilization rate	Volume of stormwater flowing into our waterways	Percent of households with reasonable access to services such as: - educational institutions - medical facilities/hospitals - libraries - full service grocery stores
Real per capita personal income growth	Number/percent of occupied housing units	Local governments unfunded liabilities relative to budget	Peak infrastructure service demand and total consumption: - water - sewer - energy - transportation	Number of areas with known water quality impairments	Rate of export activity
Poverty rate	Access to amenities such as: - entertainment venues - museums/cultural attractions - walking/biking facilities - parks - sports venues		Percent of water and sewer system in good, fair, poor condition	Condition of macroinvertebrates (bugs) in rivers	Broadband accessibility
Labor underutilization rate (U-6)	Access to services such as: - educational institutions - medical facilities/hospitals - libraries - full service grocery stores		Percent of drinking water meeting standards	Diversity of fish species	
Change in jobs	Migration rates		Transit ridership	Number of known invasive species	
Industry concentration	Voter participation rate		Rate of traffic fatalities and serious injuries		
Consumer confidence	People's desire to reside in community	Citizen satisfaction with local government services	Citizen satisfaction with quality/reliability of roads, water, and sewer systems	Perceptions about outdoor environment making this a nice place to live	Residents' ability to get to jobs, amenities, outdoor environment/recreation, and services

Several measures that reflect the outcomes will be based on a regional survey. In general, they will measure public sentiment related to all six outcomes. (See examples above.)

Creating Success with Our Transportation Assets: Key points in the plan

Specifically, *Creating Success with Our Transportation Assets*, Southeast Michigan's 2040 Regional Transportation Plan:

- promotes an infrastructure management approach, and the strategic investment of limited financial resources, in ways that prioritize needs and leverage our resources;
- provides information to the public to aid in decision-making;
- sets forth policies, actions, and recommendations to maintain and maximize the integrity of our transportation system;
- guides efforts to enhance transportation connections across various types of travel, with residents, within communities, and across the globe;
- provides for the flexibility needed to be responsive and adaptable in an increasingly dynamic environment;
- provides a framework for, and relies upon, collaboration and alignment among numerous organizations to implement its recommended actions;
- summarizes how over $50 billion in total revenue will be invested through 2040, including the approximately $36 billion directed by this plan;
- specifically identifies $3.8 billion in near-term projects programmed between 2014 and 2017; and
- is interwoven with other mutually reinforcing SEMCOG plans and programs such as the comprehensive economic development strategy, sustainability framework, housing strategy, environmental programs, green infrastructure, and complete streets, to name a few.

Key Findings Impacting Actions and Recommendations in *Creating Success with Our Transportation Assets*

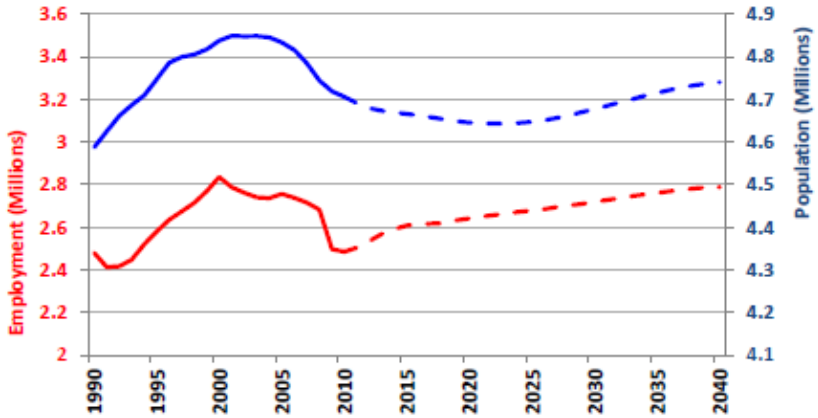
The complete version of *Creating Success with Our Transportation Assets* contains an extensive set of findings and data developed to inform the plan. The collection of data and analysis was driven by the adopted measures in SEMCOG's Creating Success program (Figure 1).

Following is a consolidated list of findings developed to communicate the breadth of issues addressed in this plan. Notably, during SEMCOG's ongoing outreach efforts as this plan was being developed, a few comments referenced the approach as a "360 degree" look at a complicated topic.

Forecasts and their Implications for this Transportation Plan

- From 2000 to 2009, the Southeast Michigan region lost an astounding 351,000 jobs. Ironically, the region gained a similar number, almost 357,000 jobs, in the robust growth era between 1990 and 2000. Almost 198,000 of the job losses – over half of them – occurred in a single year, during the devastating crash of 2009. Some of those losses are likely permanent.
- After a deep recession, all three domestic auto companies are now making a profit, but with a smaller work force.
- Cautious optimism is reflected in SEMCOG's forecast for the region. We are recovering from a very deep recession induced by a financial crisis where recovery is slow. Therefore, SEMCOG predicts lower levels of growth for the region.

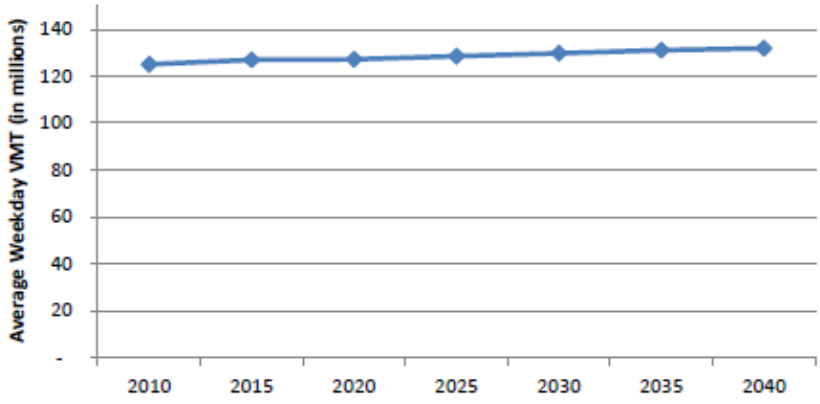
Figure 2
Past and Expected Future Change in Population and Employment



Source: SEMCOG 2040 Regional Development Forecast

- This demographic forecast contributes to a similarly modest forecast for growth in daily levels of travel.

Figure 3
Forecasted Growth in Regional Travel Is Modest
Including Impact of Projects in 2040 RTP



Feedback and Insight from Southeast Michigan Residents

An extensive regional survey on resident's knowledge and opinions on Southeast Michigan's infrastructure system[1] found the following:

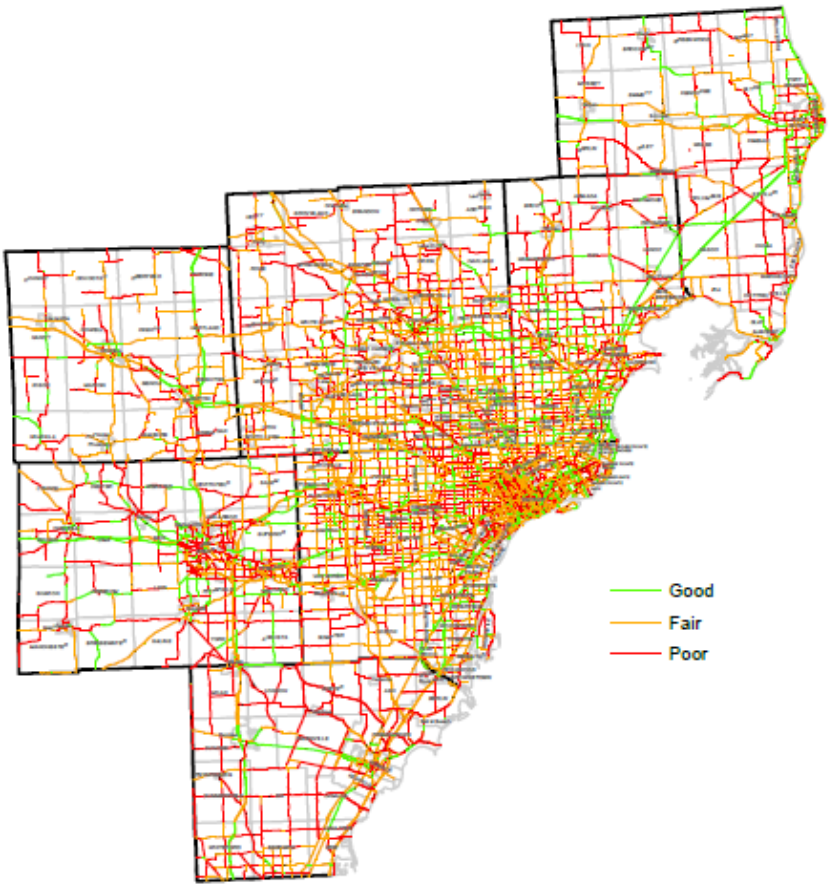
- Overall, the vast majority of residents feel that the region's infrastructure condition is deteriorating. Roads are only rated good/excellent by one-quarter of residents. Most people predict road condition will stay the same or get even worse in the future.
- Most residents rate the current transit system as fair/poor and nearly half expect the transit system condition to stay the same.
- Nearly half believe the current ways of funding infrastructure won't work in the future (49 percent).
- While 70 percent indicate more funding is needed, 73 percent also say the amount of funding is not the problem; it's how efficiently we're using it.
- There is a great deal of confusion about how our infrastructure is funded. For example, over 50 percent of the region's residents incorrectly believe that most funding for roads is derived from property taxes.
- In general, the majority of residents prefer to personally engage in actions to reduce costs rather than pay more for services.
- The vast majority of residents (80 percent) believe "we must reinvest in the region's infrastructure so we can prosper economically."

Pavement Condition

SEMCOG and the Michigan Department of Transportation have some of the more comprehensive data on pavement condition anywhere.

[1] SEMCOG; Infrastructure Public Opinion Survey, November 2012.

Figure 4
Pavement Condition, 2011



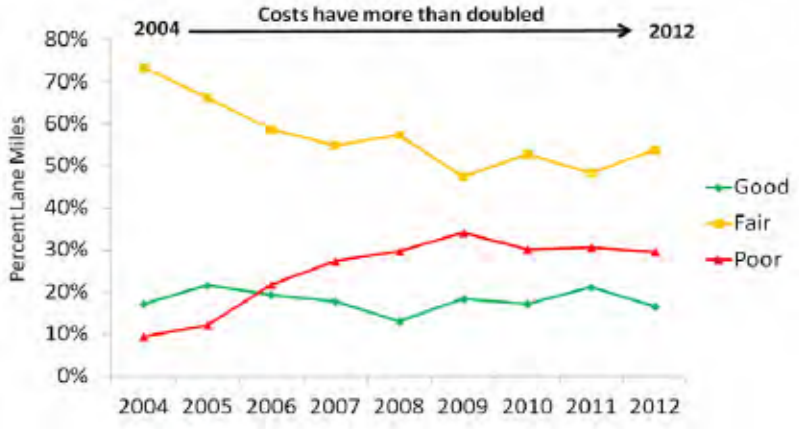
Source: SEMCOG

- These asset management data, collected to guide decision-making, are consistently sending the same message: current levels of investment are not strategic, they are inadequate. This is most evident in the continued deterioration in pavement condition.

Figure 5

Road Condition is Deteriorating and Taxpayer Costs are Escalating

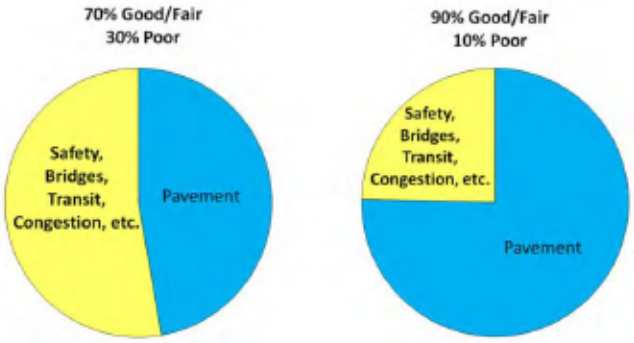
Changing Pavement Condition and Resulting Escalation in Maintenance Costs



- Investment levels for other parts of the transportation system are heavily impacted by road-condition decisions. To illustrate, improving the regional average road condition from its current 70 percent good/ fair condition to 90 percent good/ fair condition would require that over three-fourths of all funds be dedicated to pavement management. Therefore, performance measure targets must be viewed holistically.

Figure 6

Impact of Different Pavement Performance Targets on Funding for Other Needs



Bridge Condition

- Overall, the condition of bridges has improved each year since 2008.

Table 1
Condition of Bridges in Southeast Michigan

Year	Trunkline				Non-Trunkline				Total			
	Good	Fair	Poor	Percent Good or Fair	Good	Fair	Poor	Percent Good or Fair	Good	Fair	Poor	Percent Good or Fair
2008	508	812	179	88.1%	688	478	232	83.4%	1196	1290	411	85.8%
2009	552	789	162	89.2%	681	492	231	83.5%	1233	1281	393	86.5%
2010	536	825	143	90.5%	677	515	217	84.6%	1213	1340	360	87.6%
2011	577	824	103	93.2%	678	523	211	85.1%	1255	1347	314	89.2%

Source: Michigan Department of Transportation

Levels of Congestion in the Region

- A SEMCOG analysis using traffic counts and travel model data shows that sustained periods of congestion in the region are fairly limited.
  - Using the 0.9 percent V/C threshold, only six percent of roadways in the region are congested throughout either the 3-hour morning peak period or the 3-hour evening peak.
  - Two percent of all roadways are congested throughout both the morning and evening peak periods.
  - And only 0.4 percent is persistently congested from 7am to 6pm.
- On the other hand, over 600 miles of roadway in the region may have more traffic lanes than are needed to accommodate current and expected future travel. One or more lanes on these roadways could potentially be removed or repurposed (e.g., allow for green infrastructure to reduce stormwater runoff, provide bike lanes, etc.). Policy is needed to address this excess capacity in order to reduce long-term costs and advance other Creating Success outcomes.

Trends in Safety

- Over 300 people are killed and approximately 2,000 are severely injured in traffic crashes every year on the roads in our region.
- In addition to the tragic loss of life, traffic fatalities cost our economy billions of dollars annually.

Figure 7
Fatalities, 2007-2012

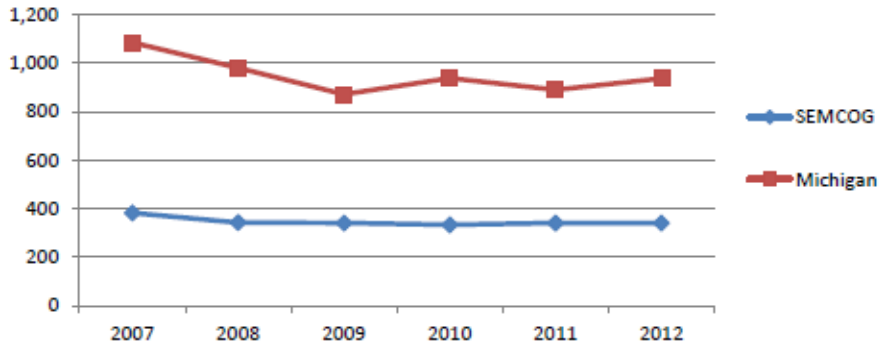
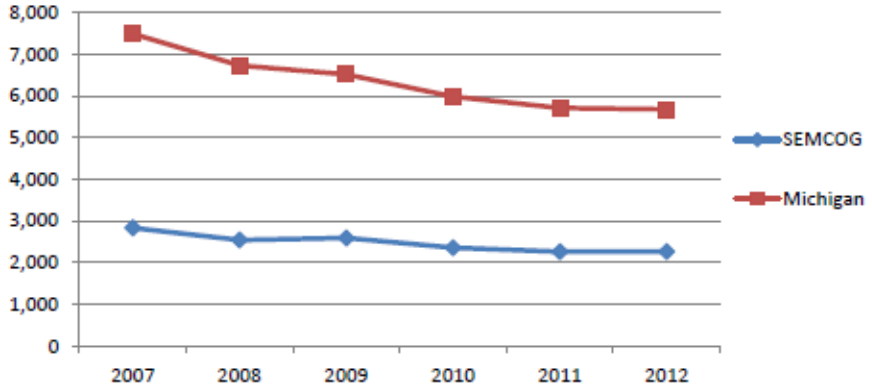


Figure 8
Severe Injuries, 2007-2012

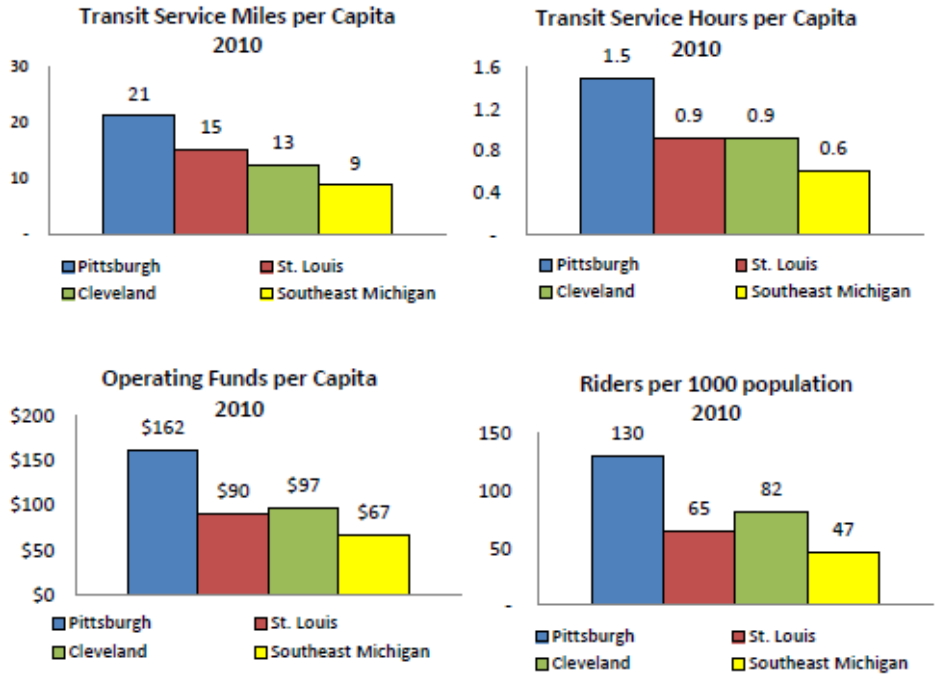


Transit and Access

- One of the guiding principles of SEMCOG 2040 Regional Transportation Plan is that transit service in the region must be significantly improved in order to attract the same levels of ridership that exists in thriving metropolitan areas across the country. There are several reasons for this principle including: the need to attract and retain young professionals, the need to connect people to jobs, and the need to address the challenges presented by a rapidly increasing elderly population. To provide some context as to how Southeast Michigan's transit service competes at present, our region currently ranks below Pittsburgh, St. Louis and Cleveland in both the amount of service and funding it provides, as well as the amount of ridership it attracts.

Figure 9

No Matter How it is Measured, Southeast Michigan Transit Ranks Poorly



- Southeast Michigan also rates poorly when compared with many other major metropolitan areas. Data from the National Transit Administration[2] shows that, of the 25 largest metropolitan areas in the country, Southeast Michigan ranks:
  - 22nd in transit ridership,
  - 23rd in hours and miles of transit service per capita, and
  - 22nd in total transit operating funds per capita.

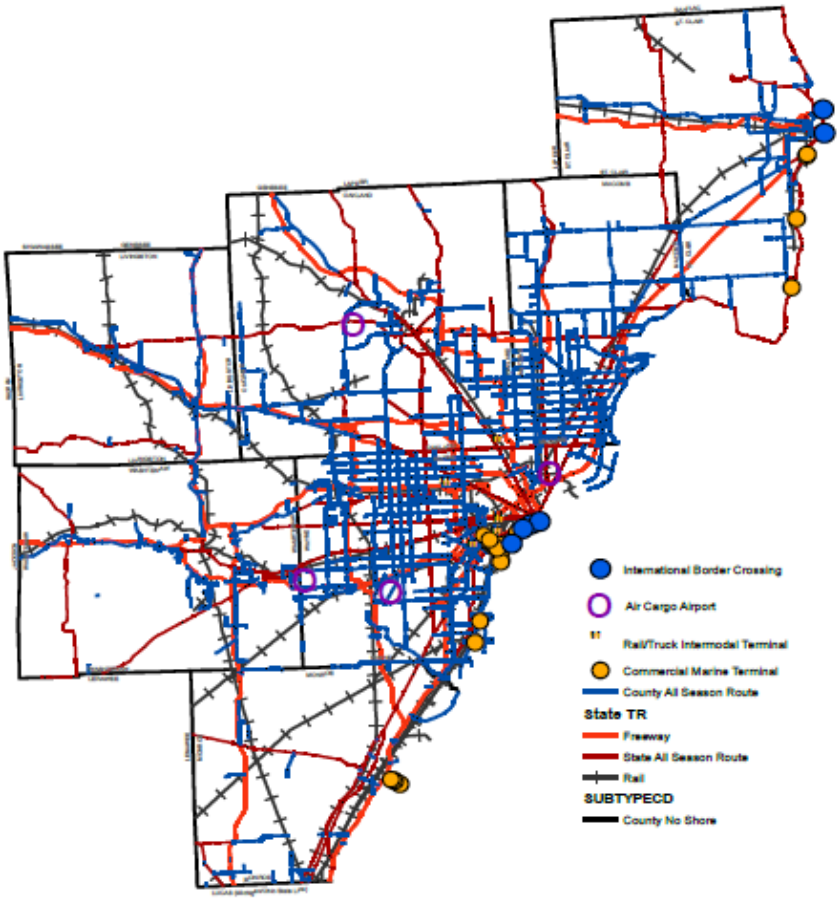
A Regional Look at Freight Movement and Economic Vitality

- The present-day regional freight system is an extensive network of interstate highways, arterial roads, international border crossings, railroads, commercial marine ports, airports, and pipelines.
- Southeast Michigan is home to the United States' most valuable collection of international land border crossings, hosting over one-third (34.5 percent in 2012) of trade with Canada, our largest trading partner.
- The freight system is important to the growth and health of Southeast Michigan's regional economy. It delivers materials for core utility and manufacturing activity, carries goods produced here to North American and world markets, and supplies consumers with finished products for purchase at stores or delivery.

[2] Federal Transit Administration; National Transit Database Profiles, 2010.

- Plans to address critical link deficiencies have led to project proposals for a new international bridge and rail tunnel connecting Detroit and Windsor, Ontario; improvements to the urban rail and intermodal terminal network in Detroit; and a new customs plaza for the Blue Water Bridge in Port Huron.

Figure 10
Southeast Michigan's Freight System is Extensive and Complex



Source: SEMCOG

Economic Vitality and its Connections with Housing, Land Use, Safety, and Nonmotorized Travel

- There is currently an over-supply of commercial and industrial properties in the region.
- Redevelopment can take many forms, ranging from repurposing buildings and parcels of property to utilizing green infrastructure, creating public spaces and greenway connections, and mixed use development.
- Connecting transportation corridors with surrounding neighborhoods can contribute to economic development along the corridor, help create a sense of community, make a community more livable, and further individual access to employment and needed services.
- Whether single family, multi-family, or vacant, housing is the single largest land use in the region, comprising 45 percent of the land in Southeast Michigan.
- There is a serious misalignment of housing supply and demand in the region resulting from the loss of 125,000 residents since 2000 and the aging of the region's population.
- Maintaining and promoting housing and neighborhoods that are diverse and equitable is vital for a sustainable and thriving region.
- Land use diversity, site design, and density play an integral component in creating walkable and bikeable communities, whether within a small or a large community.
- Bike lanes have become one of the most popular facilities for increasing mobility and access of bicycle travel. Communities are asking for more facilities that promote complete streets in an effort to increase community attractiveness, value, and economic vitality.
- Walking and biking are more than recreation; they are legitimate modes of transportation, especially in urban areas. Residents are relying on an interconnected nonmotorized system to help them reach employment, transit service, retail, educational, medical, entertainment, cultural or recreational activity centers.
- Coupled with education and traffic enforcement programs, walking and biking facilities can decrease crash rates between automobiles, pedestrians, and cyclists. Such facilities provide added safety benefits to all roadway users by creating a predictable travel path for nonmotorized users.

Transportation and Environmental Sustainability

- Southeast Michigan has 680 square miles of impervious surfaces. Approximately 245 square miles of impervious surfaces are designated as roadways.
- These roadways contribute approximately 100 billion gallons annually of stormwater runoff that is mostly unmanaged.
- Typically, stormwater management is an eligible cost under the federal system, but is often viewed as an "add on" by road agencies. When having to choose spending limited road funding on resurfacing additional roads or adding stormwater management to their projects, runoff management is often not included.
- The shortage of revenue to even maintain the existing transportation system is causing the perpetuation of actions that increase long-term costs associated with the entire system. One example is that incorporating stormwater management in design is far cheaper than retrofitting.
- Federal air quality standards continue to be more stringent, making compliance increasingly complicated and expensive. This plan conforms to the State Implementation Plan for air quality as required under the federal Clean Air Act.

- Air pollutant emissions from vehicles have been steadily declining due to tightened vehicle emissions standards for both cars and trucks. Even accounting for future growth in regional travel, these emission reductions will continue to decline through 2035 as the fleet turns over and older, more polluting vehicles are replaced by newer, cleaner ones.

What We Know About Transportation Funding and Transportation Costs

- Current methods of funding transportation infrastructure are largely outdated and mostly out of alignment with current realities.
- While important, improving efficiency and reducing costs will be completely insufficient to compensate for revenue losses resulting from this structural obsolescence.
- Until both formulas for funding and levels of funding change, costs to the public will continue to escalate.
- It is essential that we shift to infrastructure funding mechanisms that are more sustainable and equitable. A possible option for transportation is to shift from a tax on the gallons of fuel used to a charge per vehicle mile traveled (VMT).

Figure 11

New Fuel Economy Standards Will Significantly Reduce Transportation Revenue

Projected Impact of New Fuel Economy Standards on State Gas Tax Revenue Generated in Southeast Michigan

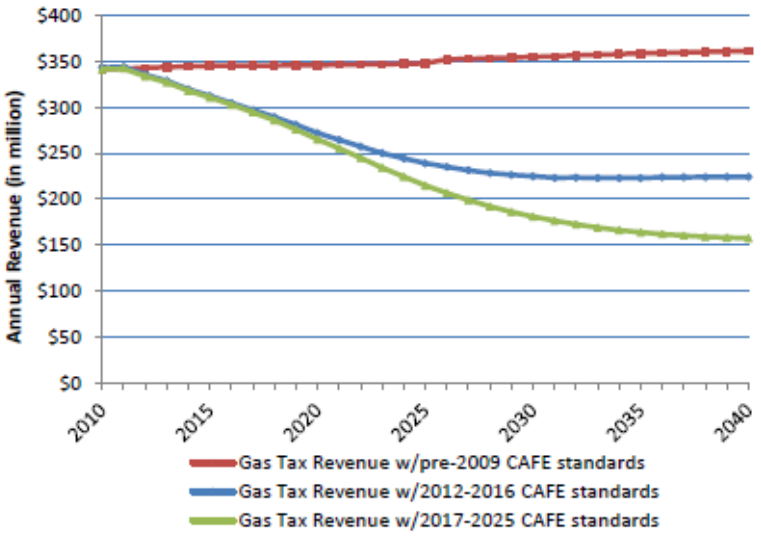
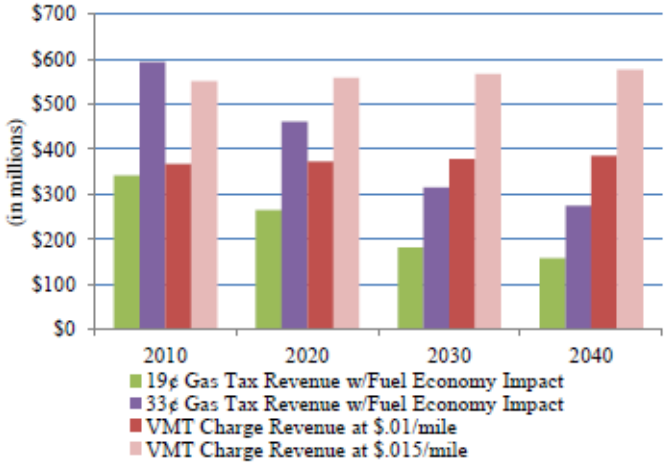


Figure 12

Funding Transportation Through Fuel Tax is Fiscally Unsustainable

Annual Revenue Generated in Southeast Michigan from Different Funding Mechanisms
Gas Tax vs.VMT Charge



- Low-cost tools are available that could significantly reduce congestion. For example, small adjustments in travel decisions can have a significant impact on reducing congestion at virtually no out of pocket cost and often with benefits of increased convenience. A combination of ridesharing, increased use of transit, expanded use of flexible work hours to allow employees to travel during non-peak hours, and providing real-time data to advise travelers of less-congested alternative routes will help increase use of our existing infrastructure and reduce costs.
- Additionally, technological innovations are making real-time management of traffic less costly and more readily available to drivers. Some of these innovations in communications can be used to make some travel unnecessary.

Positioning Southeast Michigan for Greater Success

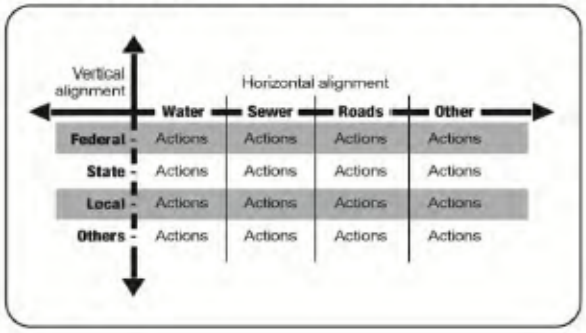
- A business-as-usual approach will continue to be a limiting factor in reaching the region's potential economic vitality, even if the most strategic distribution of current revenues is achieved. This is because available revenues are drastically insufficient in comparison to needs. A primary basis of current funding (a flat tax on fuel consumption) has little to do with the real cost of creating and maintaining a quality transportation system.
- Maximizing the benefits of our transportation system and positioning the region for success requires a much higher degree of investment in public transit.
- We all have a stake in improving transit in the region. A quality transit system plays a key role in providing access to jobs, services, and amenities; improving income; and creating desirable communities. A recent survey by SEMCOG shows that a significant portion of the public understands this; 62 percent of respondents agreed that transit affects each one of us.
- A quality transit system that is competitive with other major metropolitan areas must include core bus service as well as rapid transit corridors that are supported by integrated feeder bus service. The system must also include demand responsive service to accommodate those with special needs.

- The responsibilities and authorities provided to the newly formed Regional Transit Authority address the oversight and governance issue consistent with SEMCOG's Regional Transportation Plan. The new law also gives the RTA the much needed ability to seek voter-approved local funding for additional transit service. These changes represent a major step forward in positioning the region for success.
- Several other positive developments in the area of public transit are positioning the region to move forward in improving and expanding service:
  - Commuter rail service between Downtown Detroit and Ann Arbor will begin with event service, scheduled to start in 2013.
  - Results of SEMCOG's recently completed public opinion survey showed significant support for transit and a strong conviction by residents that the quality of the region's transit service impacts each one of us.
  - The advancement of the M-1 Streetcar project, which will begin construction in 2013 and provide service on a three-mile segment of Woodward Avenue, between Downtown Detroit and the New Center area.
  - A transit alternatives analysis is currently underway to review higher-level transit options for the 27-mile Woodward Avenue corridor from the Detroit River to the City of Pontiac. The analysis will be completed in early 2014.
  - A federal government commitment to the RTA for an additional $6.5 million to study transit development in other high-priority transit corridors including express bus, rail, and bus rapid transit (e.g., Gratiot Ave. (M-3) from Detroit to Mt. Clemens; M-59 corridor between Pontiac and Mt. Clemens; and Michigan Ave. (M-12) from Downtown Detroit to Ann Arbor, including service to Detroit Metropolitan Airport). The RTA will be responsible for prioritizing these corridors and securing local matching funds for these studies.
  - Funding has been received to continue developing stations for commuter rail service between Ann Arbor and Howell, which will begin in 2013.
- Significant and competing infrastructure needs in the region, coupled with limited resources to meet these needs, necessitates a reduction in service costs. Adopting different levels of service offer an opportunity to realize some of this cost reduction and improve fiscal sustainability.
- Lowering infrastructure costs will require both a change in policies related to managing these services and willingness on the part of the public to accept and embrace this new approach. To make this happen, more detailed information on the costs associated with differing levels of service must be developed and shared with policy makers and the public.
- A comprehensive approach is required to integrate corridor transportation planning and implementation activities in a manner that supports economic development, considers community desires, creates quality of place, and promotes environmental and fiscal sustainability. A comprehensive approach recognizes that different corridors and various locations along a single transportation corridor have different and unique characteristics.
- Some limited investment in capacity expansion may be needed to support commerce and the economy. In particular, strategic investments that may facilitate movement of freight and on-time delivery of products and parts may be needed.
- More strategic investment is likely when there is consistency of purpose in the actions taken by one or more of the three levels of government: federal, state, and local. Some refer to this as vertical alignment in government decision-making.

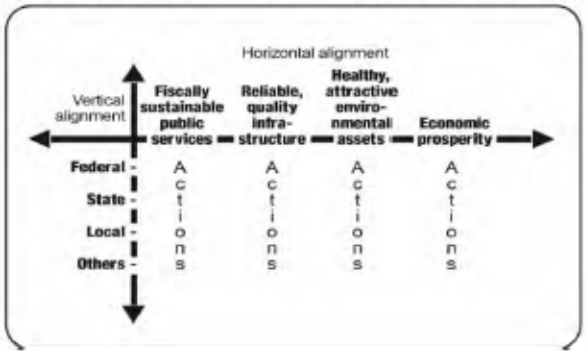
- Strategic investment is also more likely when there is consistency of purpose in actions taken by any particular level of government across infrastructure services (transportation, water, sewer, energy, etc.). Some refer to this as horizontal alignment within and between service providers.
- Focusing on a common set of outcomes and measures provides a means for achieving the needed consistency of purpose. It results in more aligned actions at all levels of government (vertical) and across all sectors (horizontal).

Figure 13
Leveraging Actions in Differing Decision Structures

Actions in a subject matter decision structure are less aligned



Actions in an outcome focused decision structure are more aligned



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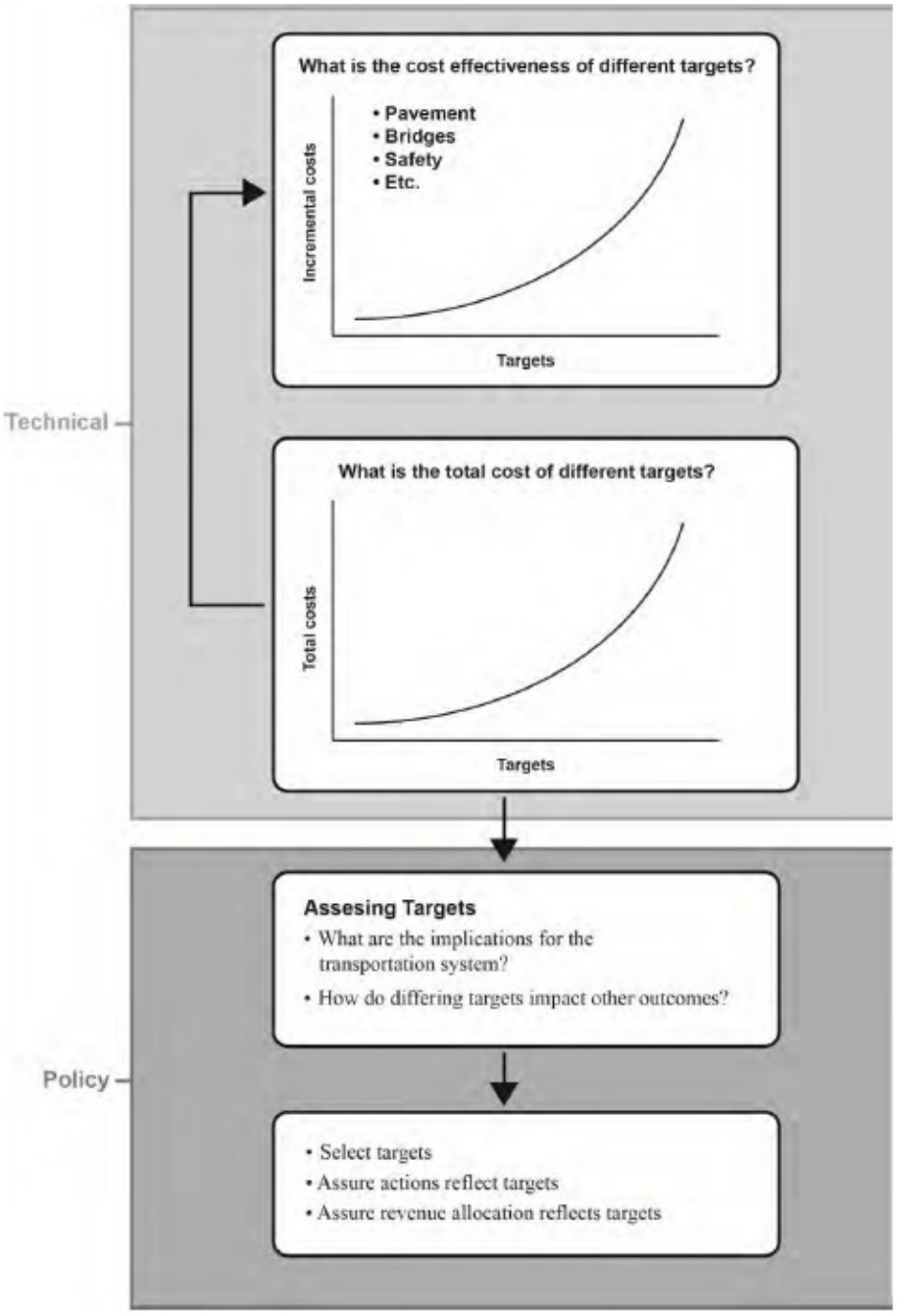
- Positioning Southeast Michigan for greater success requires a continued transitioning to a more holistic, strategic approach where transportation performance targets are agreed upon based on a combination of three factors:
  - How much achieving the target contributes to performance relative to a specific issue area within the transportation system (e.g., road condition);
  - How much achieving the target contributes to performance of the overall transportation system (e.g., mobility, access, condition, etc.); and
  - How much achieving the target contributes to achieving other outcomes and performance targets also valued by the region (e.g., fiscal sustainability, healthy environmental assets, etc.).

Figure 14
Strategic Investment That Encompasses All Outcomes



Advancing Outcomes through Actions in this Regional Transportation Plan

The findings in *Creating Success with Our Transportation Assets* were driven by the high-level performance measures chosen for Creating Success. Recognizing that we manage what we measure, the actions in this Plan are driven by lessons learned contained in these findings. The actions are focused on the six outcomes for a thriving Southeast Michigan (Figure 1). Several are highlighted below in this Executive Summary.

Note that most of the actions below could have been listed under any number of other outcomes. Consistent with SEMCOG's desire to make a transformation from siloed, single-topic approaches to decision making, the plan deemphasizes categorical thinking in favor of holistic thinking. Nonetheless, for illustrative purposes, key actions are summarized by outcome with complete understanding that different stakeholders have varying perspectives and would probably organize them differently. The degree to which different stakeholders interested in this plan associate an action with others of the six outcomes is a measure of our success toward more comprehensiveness.

Economic Prosperity

- The international border crossing that Southeast Michigan shares with Ontario, Canada, is essential to the operations of existing industry and to the value proposition for expanding supply chain and logistics activity. SEMCOG will continue to support and advocate for border infrastructure improvements, such as the New International Trade Crossing and the Blue Water Bridge customs plaza, which will enable increases in the efficiency, reliability, safety, and security of cross border travel. In addition, SEMCOG will continue to work collaboratively with bi-national stakeholders to improve the operational reliability and security of the existing border crossings.
- The regional freight system is an important economic asset. SEMCOG will continue to partner with initiatives to promote growth in supply chain and logistics activity and gather information on freight industry needs. Examples of these initiatives include, but are not exclusive to:
  - Michigan Economic Development Corporation's Logistics and Supply Chain Strategic Plan implementation,
  - Detroit Regional Chamber's *Translinked* initiative, and
  - VenturePort and I-69 Corridor Next Michigan Development Corporation activities.
- SEMCOG will also continue facilitating collaboration between various infrastructure service providers focusing on reducing costs and providing more efficient service. Examples include:
  - programming and scheduling of projects
  - reducing project delivery time
  - ensuring consistency in local utility permitting requirements
  - coordinating long-term plans
  - setting service level targets
  - more specifically quantifying the costs of differing levels of service

- SEMCOG will work with appropriate stakeholders to develop and implement a more refined and comprehensive Strategic Investment Process as generically illustrated in Figure 14. Details will be added to ensure the process design accomplishes the following:
  - generation of information on the incremental and total costs of differing targets;
  - setting of targets for measures based partly on the cost effectiveness of different levels of investment as they relate to the transportation system;
  - setting of targets for measures based partly on the cost effectiveness of different levels of investment as they relate to all six of the region's outcomes;
  - accountability to continue to assure the public that investments made are aligned with adopted targets;
  - use of asset management in evaluation and implementation of projects;
  - transparency in all parts of the process; and
  - collaboration and opportunity for input by other infrastructure service providers including water, sewer, and energy.

Reliable, Quality Infrastructure

- SEMCOG will advocate for and pursue determining infrastructure revenue needs based on the long-term, real costs of service including:
  - maintenance,
  - capital,
  - financing,
  - replacement, and
  - costs associated with achieving environmental protection.
- SEMCOG will promote and support a framework for paying transportation infrastructure costs using a two-part formula:
  - Part 1: A variable cost based on extent of use.
  - Part 2: Some costs for all based on principle that everyone benefits regardless of use (e.g., fixed fee).
  - Each of these parts would include some portion of investing in replacement of infrastructure.
- SEMCOG will identify options for more fully incorporating asset management for roads and bridges into project selection.
- SEMCOG will allocate resources to assisting operating agencies in using its tools for maximizing the benefit of varying distributions of available revenues.
- SEMCOG will allocate resources to refining these tools based on updated data or improved knowledge.
- SEMCOG will work with implementing agencies to set targets based on:
  - incremental costs of achieving differing targets,
  - total costs of achieving differing targets, and
  - other transportation needs.

Desirable Communities

- SEMCOG will work with local governments to prioritize repurposing of areas with excess capacity using some combination of:
  - nonmotorized travel and
  - green infrastructure.
- SEMCOG will create a comprehensive toolkit that will allow communities, and others, with a vested interest in corridor redevelopment, to easily find information on appropriate tools that address the unique characteristics of a location and meet community needs.
- SEMCOG will engage in technical support activities in the priority corridors for higher levels of transit to help identify systematic opportunities. This includes applying some of the tools included in the corridor toolkit.
- SEMCOG will support financially incentivizing housing development in mature areas – especially infill development near or along transit corridors and locations near employment centers and services.
- SEMCOG will use its Sustainable Community Recognition Program to assist in, and to encourage; higher density, Transit Oriented Development (TOD), and the LEED-ND Smart Location and Linkage rating system to increase housing development in areas that already have existing infrastructure.
- SEMCOG will assist communities interested in maximizing walkability and bikeability through its Sustainable Communities program and auditing activities.
- SEMCOG will seek opportunities to further connect and integrate nonmotorized facilities in the broader transportation network, especially when repaving, restoring, and reconstructing existing roadways.
- SEMCOG will continue to pursue opportunities to include or expand nonmotorized facilities and bicycle parking on all fixed-route bus lines, at activity centers, and in future rapid transit corridors in the Nonmotorized Plan.
- SEMCOG will continue to advocate for investment in safety and collaborate with partners to leverage resources.

Access to Services, Jobs, Markets, and Amenities

To help position the region for the needed expansion of transit service, SEMCOG recommends that the RTA's initial steps include the following:

- Quickly begin working with transit operators to identify and implement additional service coordination and consolidation, and to adopt a common set of service standards and performance measures. These actions must be clearly communicated to the public so they understand the progress being made.
- Work with transit operators to identify actions that resolve the likely confusion that would result from several votes on "funding transit" at different times and in different parts of the region.
- When estimating the amount of revenue needed to fund a proposed transit system, SEMCOG recommends this be based on the real cost of that system. The real cost includes capital needs, operations, maintenance, and long-term replacement of both regional and local service.
- Begin its planning using the Regional Transit Coordinating Committee (RTCC) and Ann Arbor Transit Authority (AATA) transit plans, but subsequently conduct a high-level review of these

plans to identify and, if necessary, adopt updates at the level of specificity needed to align local bus service with rapid transit service in the four priority corridors: Woodward, Gratiot, M-59, and Michigan Avenue. SEMCOG offers to assist with this update with the understanding that the purpose is narrowly focused on proposing modifications as described above, not revisiting the basic direction already established in these plans.

- SEMCOG will promote actions that the RTA can take to improve public transit with an emphasis on linking housing to jobs and services.

Fiscally Sustainable Public Services

- In order to improve the quality and fiscal sustainability of our infrastructure services, we must seize the opportunity presented by the public's willingness to take personal actions that help more cost-effectively deliver services. Examples include carpooling, use alternative routes, using public transit, and traveling at non-peak times.
- Advocate that construction and maintenance techniques be reviewed by Michigan's Asset Management Council and implemented based on consideration of both short- and long-term costs.
- SEMCOG will continue collaborating with the large service providers to advocate for a transition from higher-cost infrastructure designs aimed at addressing short-duration peak demand, to less expensive infrastructure designs aimed at providing quality service a majority of the day.
- SEMCOG's analytical tools for maximizing pavement and bridge condition benefits from available revenue should be used by operating agencies as part of project programming.

Healthy, Attractive Environmental Assets

- SEMCOG will advocate that a revised structure for transportation funding include the design, construction, maintenance, and replacement of necessary stormwater management infrastructure.
- SEMCOG will continue to work with the state and local stakeholders to monitor local air quality and use its holistic approach to ensure that the region attains and maintains all national ambient air quality standards in a manner most consistent with supporting the region's six adopted outcomes.
- SEMCOG will promote using various funding sources, including the new Transportation Alternatives Program, to implement projects that address both transportation and environmental outcomes.
- SEMCOG will complete and promote implementation of the Regional Green Infrastructure Vision.

Overview of Projects in the 2040 Regional Transportation Plan

Federal law requires that SEMCOG maintain two project lists. The first list represents projects programmed to date for the 2040 Regional Transportation Plan. Projects in the plan will be implemented via the region's short-range 2014-2017 Transportation Improvement Program (TIP), which represents the list of projects programmed for funding over the next four years. Both of these lists must be financially constrained; meaning that the cost of planned projects cannot exceed the amount of funding reasonably expected to be available over respective periods.

SEMCOG maintains detailed data sources used to track the condition of the region's transportation system. SEMCOG has received national recognition for its work in safety, asset management using pavement data and for facilitating collaboration on managing operations.

In preparation for the Regional Transportation Plan and the Transportation Improvement Program, SEMCOG and road and transit implementing agencies all used the data in various ways to support decision-making. Examples include:

- Condition of roads;
- Condition of bridges;
- Vehicle counts;
- Current and future demographic data by traffic analysis zone on population, age of population, households, and jobs;
- Forecasted travel by road segment;
- Safety data by road segment;
- Transit user survey data;
- Representative public perspective on infrastructure;
- Location of sensitive environmental resources; and
- Intermodal connectivity.

Several other sections of this plan include various analyses undertaken using these data. These analyses were designed and used to guide decision-making for policies, actions and project selection.

Based on these analyses, a series of policies and principles to guide plan development were proposed and adopted by the elected officials representing the region. These policies and principles were used to structure a formal call for submittal of projects in fall 2012.

Specifically, the call for projects was based on all of the following, each of which is described in considerable detail in other parts of this plan:

- Consistency with the national goals set forth in the new federal transportation program Moving Ahead for Progress in the 21st Century (MAP-21),
- SEMCOG's Creating Success Outcomes and Performance Measures,
- Guiding Principles and Policies adopted by SEMCOG,
- Recognition of key societal changes impacting the provision of transportation services and,

- Identification of congested corridors through the Congestion Management Process.

Investment Prioritization

SEMCOG's various needs analyses demonstrated that much of the existing system continued to decline despite the heavy emphasis already placed on maintaining it. SEMCOG recommended retaining priorities in the 2035 Plan, stressing continued emphasis on care of the current system by focusing on the following:

- Road and bridge condition;
- Household access to jobs, services, and amenities;
- Safety;
- Transit ridership; and
- The infrastructure utilization rate.

Performance Measures

SEMCOG noted its expectation that in the future, increasing emphasis would be placed on setting targets for performance measures to guide investment and distribution of transportation funding. SEMCOG noted the need for a process where decisions on distribution of funds would be increasingly weighted by their rate of return on investment and value in moving the region toward achieving the adopted targets. In fact, that structure has now been framed and is described in Figure 16.

Summary of Projects and Investment in the Region's Transportation System

There are over a 1,000 projects in the Regional Transportation Plan. The following table is a sample of projects found in the Regional Transportation Plan.

Table 2
Example Projects from the Regional Transportation Plan

Transit			
Ann Arbor - Detroit commuter rail service: Illustrative	From Ann Arbor to Detroit	Construct and operate commuter rail service	Wayne County Washtenaw County
Huron and Jackson Real Time Transit Traveler Information	Along Huron/Jackson Corridor	Ridership enhancement	Washtenaw County
Preventive maintenance	Regionwide	Maintain vehicles or equipment	Regionwide
Bridge			
Grand River	At West Branch of Cedar River	Replace Bridge	Livingston County
New International Trade Crossing	From Southwest Detroit to Windsor Ontario	New Bridge	Wayne County Essex County, Ontario
Pavement			

I-96	From Newburgh to Telegraph (US-24)	Reconstruct	Wayne County
Lewis Avenue	From Todd to Lulu	Mill and fill, edge, repair	Monroe County
11 Mile Road	From Inkster to 2200' East	Rehabilitate	Oakland County
Capacity			
Jefferson Avenue	From Crocker to Metropolitan Parkway	Widen from 2 to 5 lanes	Macomb County
I-94	From I-96 to Connor	Widen from 6 to 8 lanes, reconstruct interchanges	Wayne County
Safety			
I-94 EB	Near Kalmbach Road	Install de-icing system	Washtenaw County
Krafft Road	From Campbell to State	Add center turn lane	St. Clair County
M-24 (Lapeer Rd)	At Harmon	Upgrade traffic signal and indirect left.	Oakland County
Traffic Operations			
M-10 (Lodge Freeway)	At M-39 (Southfield Freeway)	Road Weather Information system	Oakland County
SEMCOG MI Rideshare	Regionwide	Continue operating SEMCOG's regional MiRideshare program	Regional
MITS Center operations	Regionwide	Continue control room operations activities	Regional
Optimize signals	Along M-1 (Woodward Ave)	Optimize signals	Oakland County
Nonmotorized			
Detroit Riverfront Walk	Along the Detroit River from Meldrum and Belle Isle	Construct nonmotorized path	Wayne County
Border to Border Trail	Trail linking communities and destinations along the Huron River	Construct nonmotorized path	Washtenaw County
Studies			
Ann Arbor Connector Study	From Plymouth at US-23 to State at I-94	NEPA and PE for outcomes of feasibility study	Washtenaw County

Various Roads	Throughout Walled Lake	Study	Oakland County

Collectively, projects in the transportation plan will yield numerous benefits such as:

- Better bridges and fewer detours reducing travel costs;
- Decreased air pollution;
- Increased safety and economic productivity;
- More pedestrian and bicycle travel;
- Improved personal health and community vitality
- Better connections for different modes such as transit;
- Better transit, which will attract development, business, and tourism, and connect people to the places they want to go;
- Better pavement for less wear and tear on vehicles;
- Improved traffic flow;
- Safer roads saving lives, and
- Decreased congestion.

There are numerous federal and state laws, rules, and policies that impact both the level of funding available and how that funding can be used. The table below is a high level summary of the various sources of funding to support the Region's Transportation System. Each source is guided by a separate and very specific set of requirements.

Table 3
Transportation Funding Sources

Federal	State	Local	Other
Highway Trust Fund • Federal gas tax revenue • General fund transfers Periodic special funding from other federal agencies	Michigan Transportation Fund (MTF) • State gas taxes • Vehicle registration fees • Auto-related sales taxes and driver's license fees General Fund transfers	Local distribution of MTF funds General funds/millages Downtown Development Authorities (DDA) Local Development Finance Authorities (LDFA) Local transit farebox revenue	Transfers from Canada for New International Bridge Crossing Private funds

The table below represents SEMCOG's current best estimate of total investment from all these funding sources by category through 2040. It also shows the near term investment programmed in the 2014-2017 Transportation Improvement Program.

Table 4

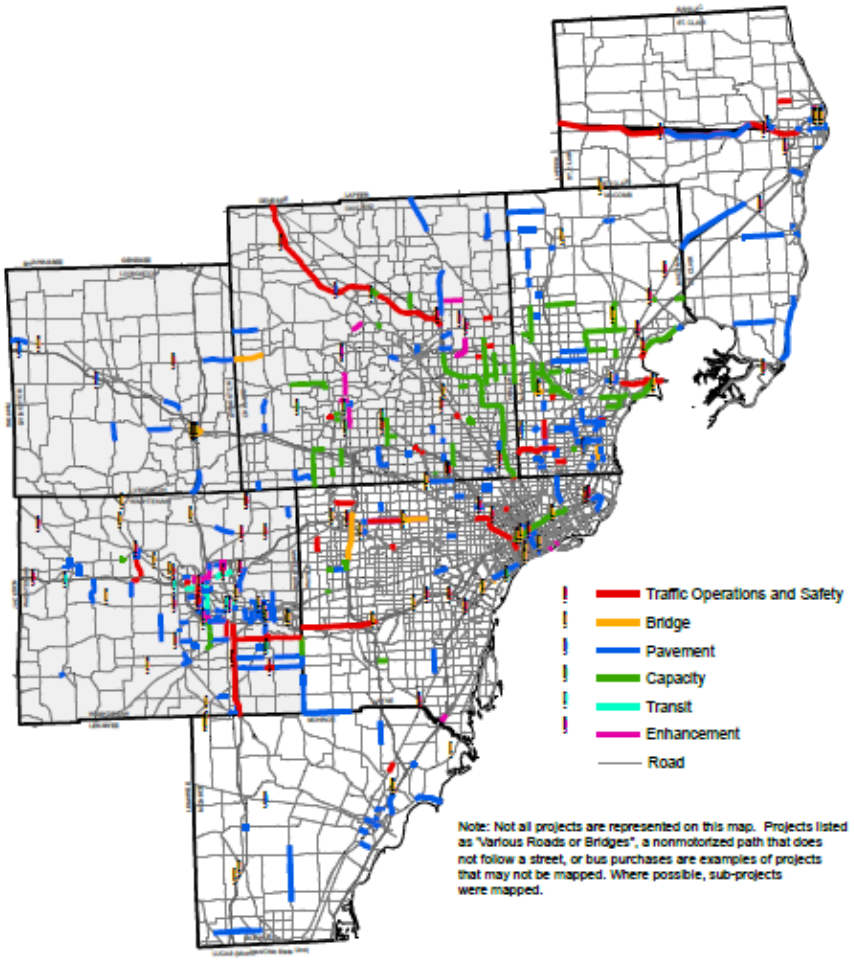
Summary of Investment in Southeast Michigan's Transportation System through 2040

Funding Category	Projected Investment Included in 2040 RTP (in millions)	Programmed in the 2014-2017 TIP (in millions)	Uses	Included in TIP	Source of Funding
Operation & Maintenance of Federal-Aid Roads	$8,844	NA	Operations and minor capital	No	State
Operation & Maintenance of Other Roads	$8,731	NA	Operations and minor capital	No	State
Federal Transit Funds	$3,521	$287	Capital[2]	Yes	Federal
State Transit Funds	$3,713	$466	Capital and Operating	Yes[4]	State
Local Transit Funds	$4,940	$493	Capital and Operating	Yes[4]	Local
MDOT Capital – repair and improvement[3]	$12,752	$990	Capital	Yes[4]	Federal and State
Local Road Agencies – repair and improvement[3]	$4,446	$866	Capital	Yes[4]	Federal and State
MDOT Capacity Improvements	$5,905[5]	$594[6]	Capital	Yes[4]	Federal, State, Canada and Private[7]
Local Road Capacity Improvements	$925	$106	Capital	Yes[4]	Federal and State
Total	$53,777	$3,802			

[1]Federal-aid roads are those that are part of the National Highway System (NHS) or have a functional classification of Urban Collector/Rural Major Collector or higher.
[2]Some preventative maintenance costs are also allowed.
[3]Includes reconstruction, rehabilitation, safety, bridge, and Congestion Mitigation and Air Quality (CMAQ) projects
[4]Exceptions apply if project is not federally funded and not considered regionally significant
[5]Includes major freeway projects on I-75 and I-94 that involve both widening and reconstruction; the Blue Water Bridge Plaza; the New International Bridge Crossing (NITC); construction of a new loop ramp at I-75/Sashabaw Rd.; and, the reconfiguration of the I-96/U.S. 23 interchange.
[6]Includes work associated with the Blue Water Bridge Plaza and access road improvements for the NITC
[7]Canadian and private funds are associated with the New International Bridge Crossing

Below is a map depicting the projects thus far in the Regional Transportation Plan. There are numerous projects of various types in each of the region's seven counties.

Figure 15
Projects Included in the 2040 Regional Transportation Plan



Source: SEMCOG

- The projects reflect the recommended priority of maintaining the existing system.
- The plan's emphasis on use of the existing system and a different approach to congestion is reflected in the funding allocation. The vast majority of the minimal funding targeted for congestion management projects that include some capacity expansion results from the need to rehabilitate, repair, and replace portions of two aging Interstates. Only a small portion of the funding for each of these large-scale projects will be used for capacity expansion. Project costs are dominated by the need for repair and replacement of existing roadway, bridges and safety improvements.
- Based on federal requirements, the New International Trade Crossing (NITC) is included. However, Canada is financing the New International Trade Crossing.
- For the most part, road funds cannot be used to pay for either transit capital or operations.
- With few exceptions, federal transit funds cannot be used to pay for transit operations.
- Over $250 million in the plan and $45 million in the TIP is programmed for projects that help expand transportation choices and enhance the transportation experience. These include pedestrian and bicycle infrastructure and safety programs, historic preservation and rehabilitation of transportation facilities, environmental mitigation activities, and safe routes to school programs.

Expected Changes in Performance

- Table 5 summarizes key needs identified in this plan by category and the expected change in performance that will result.
- Consistent with forecasts in SEMCOG's recent transportation plans, performance improvements continue to be hampered by inadequate funding.

Table 5
Expected Changes in Performance at Current Funding Levels

Component	Key Needs	Expected Change in Performance
Transit Capital	• Dedicated/Adequate Source of Revenue	⇔
Transit Operating	• Dedicated/Adequate Source of Revenue • Service Expansion: frequency and coverage	⇩
Pavement	• Reverse trend of deteriorating condition and increased taxpayer costs	⇩
Bridges	• Sustain level of investment that prevents cost escalation	⇧
Safety	• Continue steady improvement	⇧
Congestion/Capacity	• Minimize need for expansion/maximize use of existing system	⇔
Major Improvement Projects	• Move forward with the projects persistently identified as high priority	⇧
Road Operations	• Increase emphasis as a cost effective means of addressing multiple system needs	⇧
Nonmotorized	• Increase emphasis on expanding as a viable transportation choice	⇧

In summary, available funding for both the 2040 Regional Transportation Plan and the 2014-2017 Transportation Improvement Program is properly focused on caring for the existing system. But, the insufficient amount of funding is impeding our ability to develop and improve the transportation system needed to advance our economic prosperity.

Southeast Michigan 2040 Forecast Summary

Revised, April 2012

SEMCOG . . . Creating Success in Southeast Michigan

Southeast Michigan Council of Governments

SEMCOG . . . *Creating Success in Southeast Michigan*

Mission

SEMCOG, the Southeast Michigan Council of Governments, is the only organization in Southeast Michigan that brings together all of the region's governments to solve regional challenges.

SEMCOG is creating success in Southeast Michigan by:

- Promoting informed decision making to improve Southeast Michigan and its local governments by providing insightful data analysis;
- Promoting the efficient use of tax dollars for both long-term infrastructure investment and shorter-term governmental efficiency;
- Solving regional issues that go beyond the boundaries of individual local governments
- Delivering direct assistance to member governments in the areas of transportation, environment, and community and economic development; and
- Advocating on behalf of Southeast Michigan in Lansing and Washington.

Executive Summary

SEMCOG has completed a new long-range forecast of population, households, and jobs for the Southeast Michigan region and its counties and communities. Its overarching goal is to provide an understanding of the region's future economic and demographic outlook.

The 2040 Forecast provides the base data for SEMCOG's long-range planning and is also used extensively in local government and private sector planning efforts. The 30-year outlook for future demographic and socioeconomic changes in communities across the region provides the best base for the transportation, water, sewer, and other infrastructure planning vital to our region's future success.

The overall forecast from 2010 to 2040 shows the region emerging from the recent recession with moderate growth in households and jobs, but little population growth. Overall population growth will be just 0.8%, while households will grow by 6.0% and jobs by 12.1% over the next 30 years.

Southeast Michigan experienced a significant decline in both population and jobs during the recent multi-year recession. After reaching a peak of 4.83 million persons in 2000, the region lost 128,625 persons during the last decade, a decline of 2.7%, to 4.7 million persons in 2010. The region will continue to lose population through 2022, dropping to 4.64 million during that time, and then begin to grow on an annual basis. Over the next 30 years total, the 2040 Forecast is projecting a total gain over 2010 of just 37,430 persons, to 4.74 million in 2040.

Population dynamics will continue to change. The region will become much older by 2040, driven by the aging of the large baby boom generation. Though total households in the region will slowly increase throughout the entire forecast period (6.0% over 30 years), the aging population means a continued decline in household size, dropping from 2.51 persons per household in 2010 to 2.39 persons per household in 2040. Currently 13% of the population is age 65 or older; this total will increase to 24% of the population in 2040. While the prime working age population will drop more than 10% by 2040, the senior population will grow by 86%, posing a challenge to local governments in providing services to seniors. Southeast Michigan will also become more diverse, as foreign immigration becomes the main driver of population in the region. The Hispanic and Asian populations will nearly double, from 4 and 6 percent of total population in 2010 to 8 and 11 percent in 2040 respectively. Black population will remain largely unchanged at 21 percent of total population in 2040, while Whites will drop from 68 to 60 percent.

Southeast Michigan will gain back most of the jobs lost during the last decade,, adding 300,000 jobs to reach 2.78 million in 2040. Nearly half of the job growth will occur in the next five years, as we climb out of the recession on small gains in manufacturing jobs, the result of a restructured auto industry responding to increased consumer demand for automobiles. Job growth beyond 2015 will be slower, as losses in manufacturing and retail jobs due to increased productivity are more than compensated by gains in knowledge-based jobs and in ambulatory health care jobs that serve the growing senior population. The muted growth rate in jobs is also due to labor force constraints in the later years of the forecast, as the population ages and we struggle to attract young workers to the region.

Introduction

SEMCOG produces a new long-range forecast of the region's demographic and socioeconomic future every four years. Included in SEMCOG's 2040 Forecast are total population, households, and jobs for the Southeast Michigan region, its seven counties, and 234 communities. Forecast data is provided in five-year increments, for the 30-year period 2010 through 2040, and is based on the best available local data, as well as data from the 2010 Census, American Community Survey, and the Michigan Bureau of Labor Market Information. The 2040 Forecast is especially useful to SEMCOG's member communities because of the view it provides of future change following an extended period of decline in population and jobs due to the recent economic recession.

Methods

Any forecast of future demographic and socioeconomic change for small areas, including communities, requires a detailed understanding of the growth trends for the larger Southeast Michigan region. The first step in the process of producing the 2040 Forecast began with work on a new regional forecast for the years 2010 to 2040. This regional forecast relies upon future population and employment trends developed by the Institute of Labor and Industrial Relations at the University of Michigan using the REMI (Regional Economic Models, Inc.) model. REMI is a computer model that considers all counties in the United States as economic units competing for labor, income, and future population growth with all other parts of the country. SEMCOG then convened a Forecast Technical Advisory Committee composed of regional experts to review and improve the regional forecast produced by the University of Michigan. The Southeast Michigan trends developed by REMI are further detailed in the SEMCOG document *Retrenchment and Renewal: The Economic Outlook for Southeast Michigan Through 2040*.

The second step in producing SEMCOG's 2040 Forecast is to understand how individual households and employers in the region will interact based on the regional and county population and employment trends from the REMI model. In order to produce the small-area forecasts, SEMCOG is again using the UrbanSim computer model, a computer simulation model for planning and analysis of urban development that replicates the interaction between land use, transportation, and public policy such as community master plans and sewer service districts. The UrbanSim model simulates the decision making processes of different types of households and businesses in relation to a variety of potential location choices, by clearly representing the location preferences of the different types of households and employers available to locate there. This allows SEMCOG to predict both changes in land use, and household and employment location, all by land parcel. Future households and jobs are placed into the most desirable land parcel for their characteristics, and new residential and non-residential developments created, based on the demand to locate and the land available to develop in a particular geographic location.

The final step is to sum the land parcel forecast to provide forecast numbers for each city, village, and township in the region. These aggregated forecast numbers were also further reviewed by SEMCOG staff, the Forecast Technical Advisory Committee, and communities in the region.

Local Input and Review

Data developed by the region's 234 local governments was instrumental in producing the 2040 Forecast. SEMCOG collected from each of the region's communities their most current master plan, which provided the future planned land use and development density of each land parcel. In addition, recent data on both residential and non-residential development projects was also obtained from each community.

SEMCOG relied heavily on land parcel files and tax assessment data for these parcels as the base for SEMCOG's small area forecasting. This data, in particular, provides the parcel-level information (presence and age of buildings, improvement and land values, and non-residential square footage) that a real estate driven model such as UrbanSim needs to correctly model future development.

Additional community input was collected in a series of community review meetings held during November and December, 2011. SEMCOG presented a draft of the community forecast at these meetings, held in different counties throughout the region and hosted by local elected officials. The draft community forecast to the year 2020 was shared, along with a detailed presentation on the regional and county level demographic and socioeconomic changes that guided production of the community forecast. Officials present at the meetings discussed the implications of the draft forecast and how they could best respond to the changes in their communities. SEMCOG asked local officials to review the draft forecast numbers provided at the meetings and forward comments by the end of January 2012. SEMCOG received more than 20 written comments from local governments as well as additional information on recent housing and non-residential developments in their communities, leading to adjustments to the draft forecast numbers where appropriate.

SEMCOG's committees reviewed and commented on the forecast as follows:

- June 6, 2011 — Forecast Technical Advisory Committee (reviewed draft regional forecast totals)
- September 15, 2011 — Forecast Technical Advisory Committee (reviewed adjusted regional forecast totals)
- February 15, 2012 — Forecast Technical Advisory Committee (resolution recommending Executive Committee adoption)
- February 24, 2012 — Executive Committee (resolution recommending General Assembly adoption)

SEMCOG will continue to refine the community forecast to produce a more detailed forecast for each community, including population by age cohort, group quarters population, households by presence of children and by age of householder, and jobs by employment sector. These detailed 2040 Forecast tables will be made available on SEMCOG's Web site, www.semcog.org, as the forecast is finalized in the near future.

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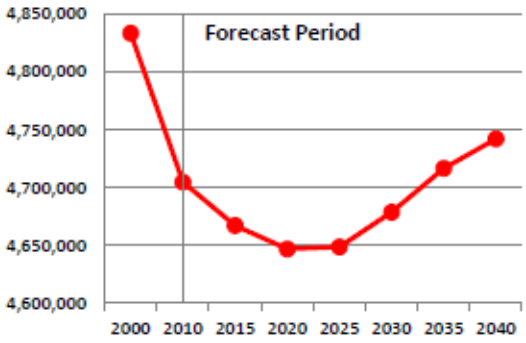
Southeast Michigan 2040 Forecast Summary

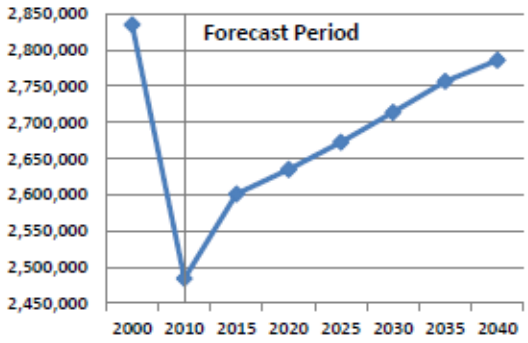
Population and Households

	2000	2010	2020	2030	2040	Change 2010-40 (Forecast Period) Number	Percent
Population	4,833,368	4,704,743	4,646,938	4,678,718	4,742,083	37,340	0.8%
Households	1,845,218	1,844,758	1,885,802	1,931,495	1,954,953	110,195	6.0%
Household Size	2.58	2.51	2.43	2.39	2.39	-0.12	-4.9%

Population by Year



Employment by Year



Employment by Sector

Sector	2000	2010	2040	Change 2010-40 (Forecast Period) Number	Percent
Natural Resources, Mining, & Construction	151,247	103,132	121,512	18,380	17.8%
Manufacturing	443,191	209,698	178,823	-30,875	-14.7%
Wholesale Trade, Trans, Warehousing, & Utilities	195,461	171,672	181,837	10,165	5.9%
Retail Trade	304,321	244,842	215,939	-28,903	-11.8%
Knowledge-Based Services	557,135	549,460	636,475	87,015	15.8%
Services to Households & Firms	339,573	319,810	381,527	61,717	19.3%
Private Education and Health Care	305,373	370,416	519,939	149,523	40.4%
Leisure & Hospitality	217,896	223,852	243,472	19,620	8.8%
Government	320,973	291,369	306,558	15,189	5.2%
Total Employment	**2,835,170**	**2,484,251**	**2,786,082**	**301,831**	**12.1%**

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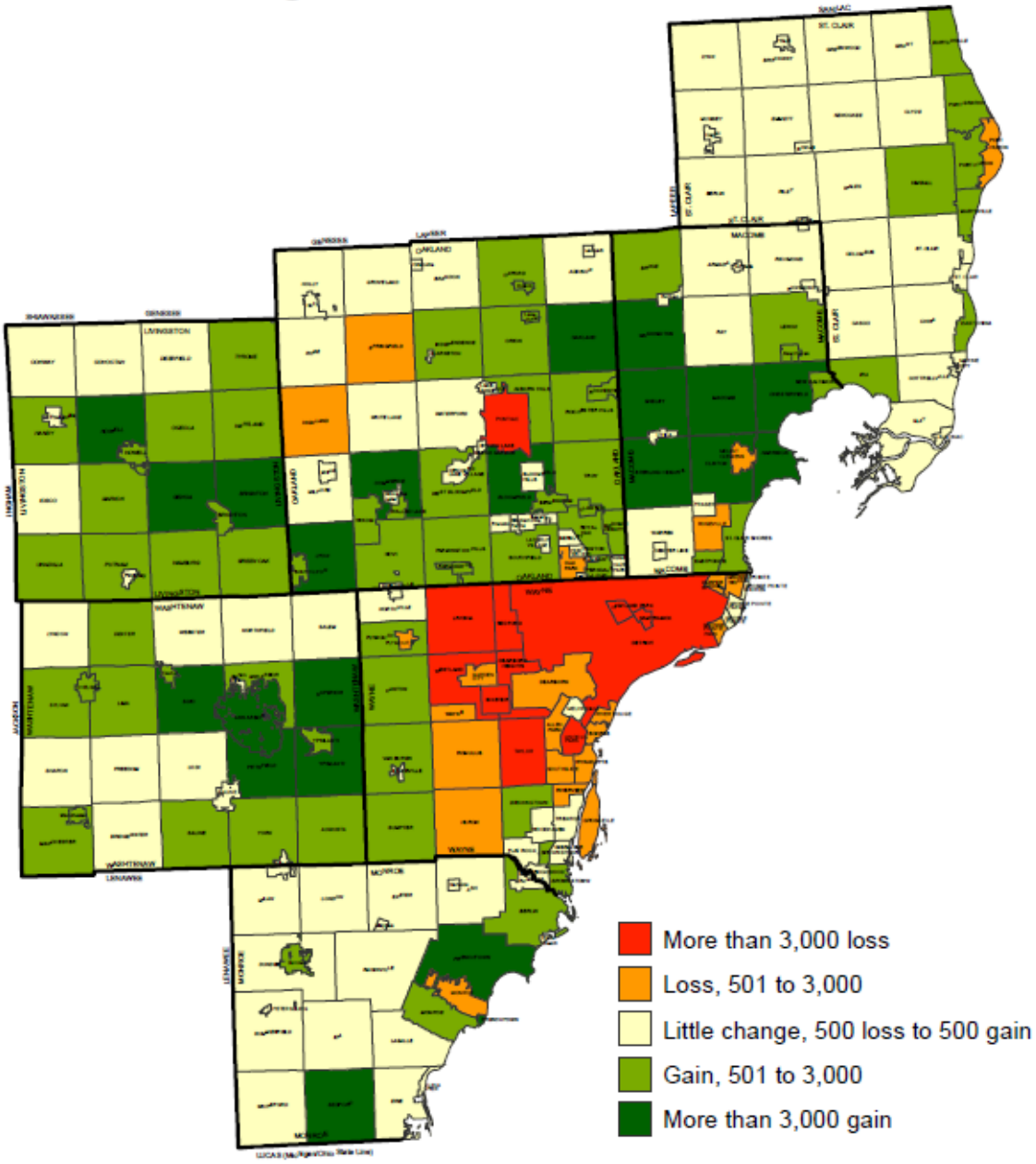
2040 Forecast by County for Southeast Michigan

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Southeast Michigan									
Population	4,704,743	4,667,111	4,646,938	4,648,713	4,678,718	4,708,371	4,742,083	37,340	0.8%
Households	1,844,758	1,863,648	1,885,802	1,905,850	1,931,495	1,948,137	1,954,953	110,195	6.0%
Employment	2,484,251	2,601,122	2,635,153	2,672,708	2,713,955	2,756,878	2,786,082	301,831	12.1%
Livingston County									
Population	180,967	186,015	192,116	198,021	204,704	210,664	214,323	33,356	18.4%
Households	67,380	70,558	73,620	75,959	78,514	80,706	82,223	14,843	22.0%
Employment	69,057	74,482	77,468	80,337	83,506	86,820	89,727	20,670	29.9%
Macomb County									
Population	840,978	855,374	863,378	872,740	884,865	896,423	905,390	64,412	7.7%
Households	331,668	341,557	349,242	356,597	363,519	368,169	370,604	38,936	11.7%
Employment	362,517	377,116	379,981	387,217	395,239	403,398	409,886	47,369	13.1%
Monroe County									
Population	152,021	155,690	156,592	158,332	160,841	163,180	164,720	12,699	8.4%
Households	58,230	60,815	62,539	64,305	66,071	67,189	67,823	9,593	16.5%
Employment	53,761	56,262	56,928	57,637	58,669	60,081	61,382	7,621	14.2%
Oakland County									
Population	1,202,362	1,215,321	1,218,449	1,221,349	1,230,755	1,232,672	1,246,863	44,501	3.7%
Households	483,698	496,555	504,731	506,549	509,286	511,137	510,257	26,559	5.5%
Employment	842,222	901,219	921,533	936,923	951,622	964,459	970,797	128,575	15.3%
St. Clair County									
Population	163,040	161,671	161,508	162,553	164,656	166,659	167,621	4,581	2.8%
Households	63,841	64,680	65,492	66,586	67,887	68,634	68,960	5,119	8.0%
Employment	62,614	65,243	66,061	67,045	68,350	70,038	71,480	8,866	14.2%
Washtenaw County									
Population	344,791	350,781	354,116	360,371	368,262	377,183	386,235	41,444	12.0%
Households	137,193	141,483	146,870	151,822	156,324	160,691	164,447	27,254	19.9%
Employment	236,676	246,721	252,598	260,024	268,528	277,576	285,655	48,979	20.7%
Wayne County									
Population	1,820,584	1,742,259	1,700,779	1,675,347	1,664,635	1,661,590	1,656,931	-163,653	-9.0%
Households	702,749	688,000	683,308	684,032	689,894	691,611	690,639	-12,110	-1.7%
Employment	857,404	880,079	880,584	883,525	888,041	894,506	897,155	39,751	4.6%

Population Change, 2010-2040

Southeast Michigan



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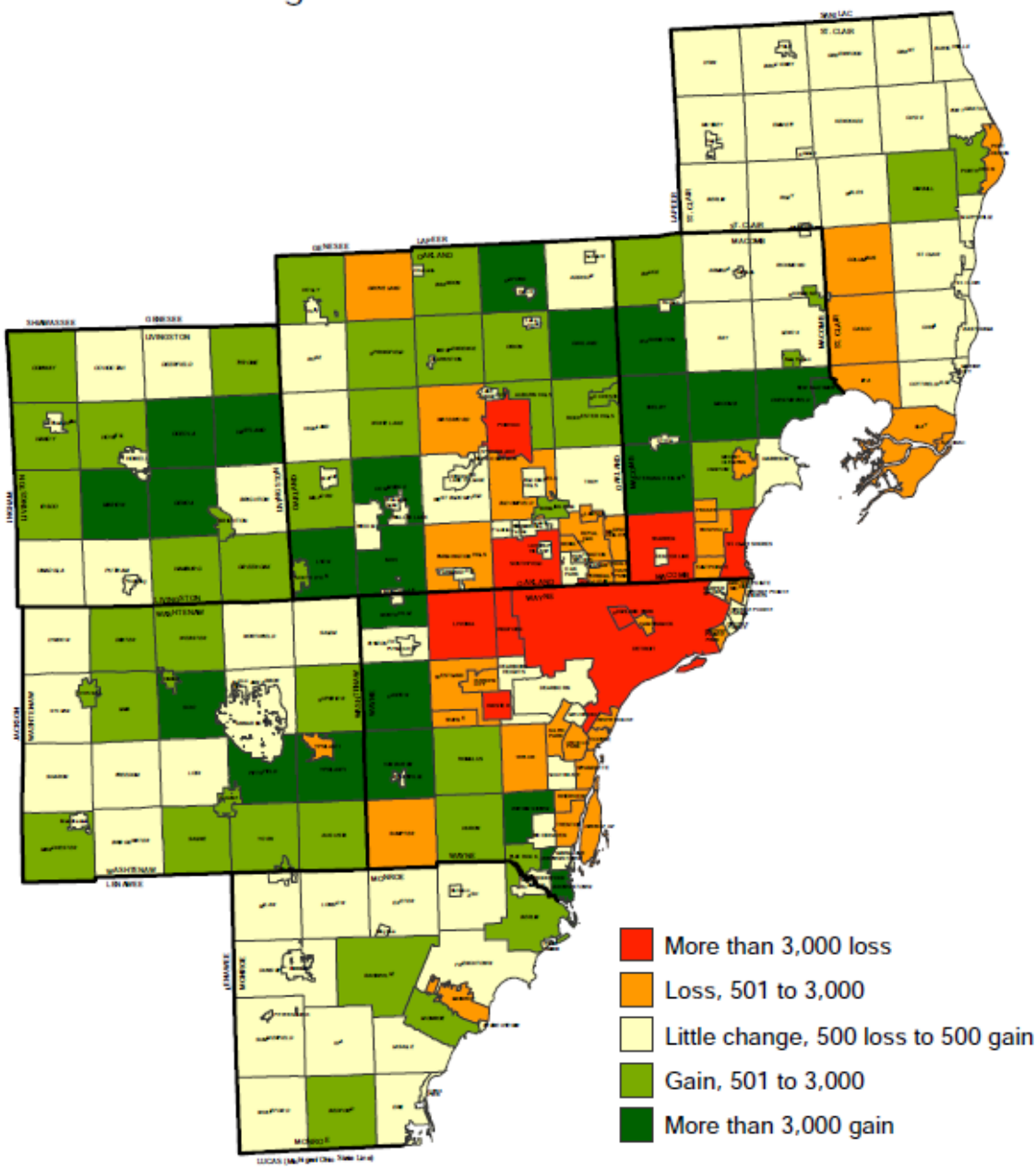
7 - Southeast Michigan 2040 Forecast Summary

Population Change, 2000-2010

Southeast Michigan



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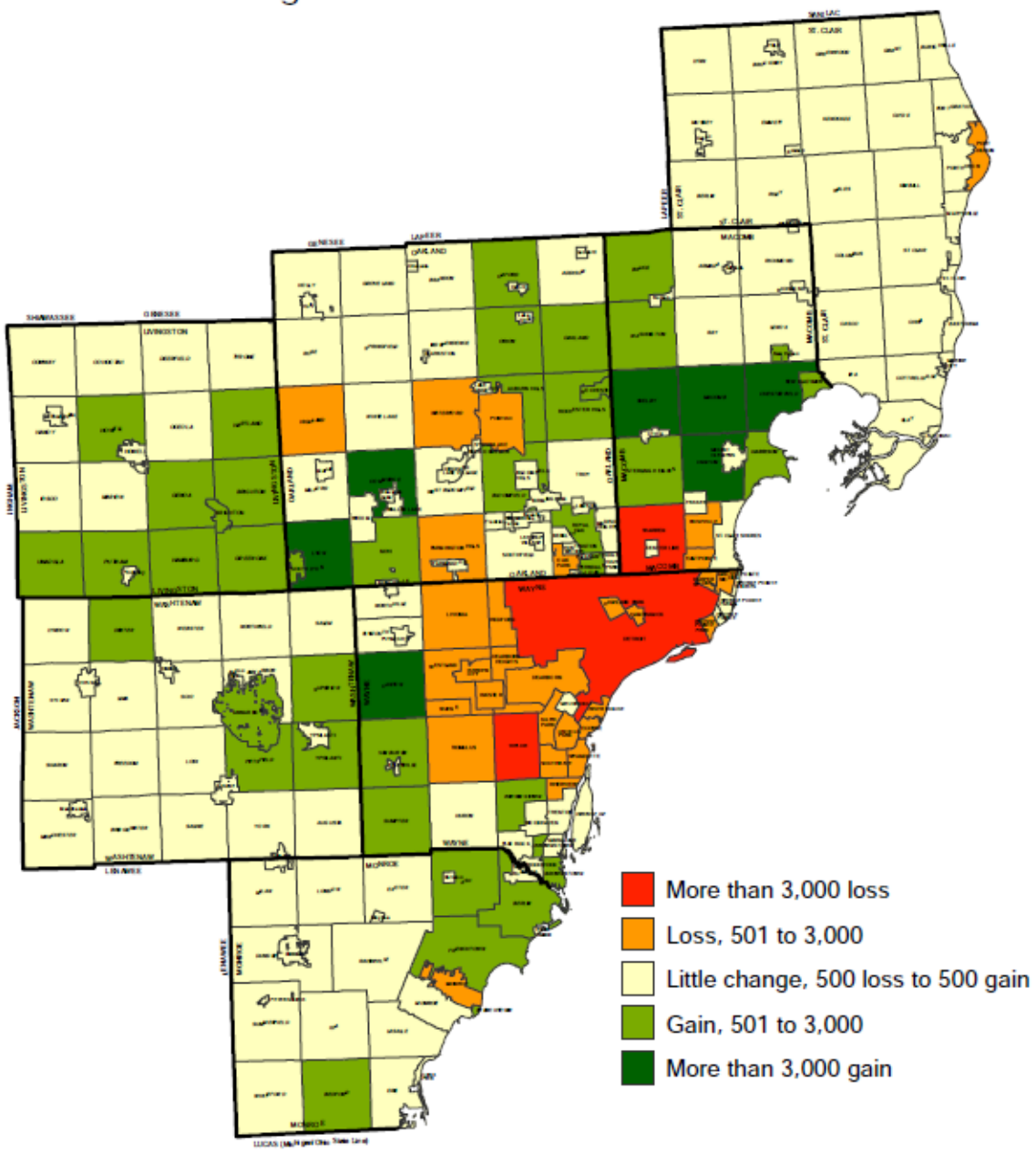
9 - Southeast Michigan 2040 Forecast Summary

Population Change, 2010-2020

Southeast Michigan



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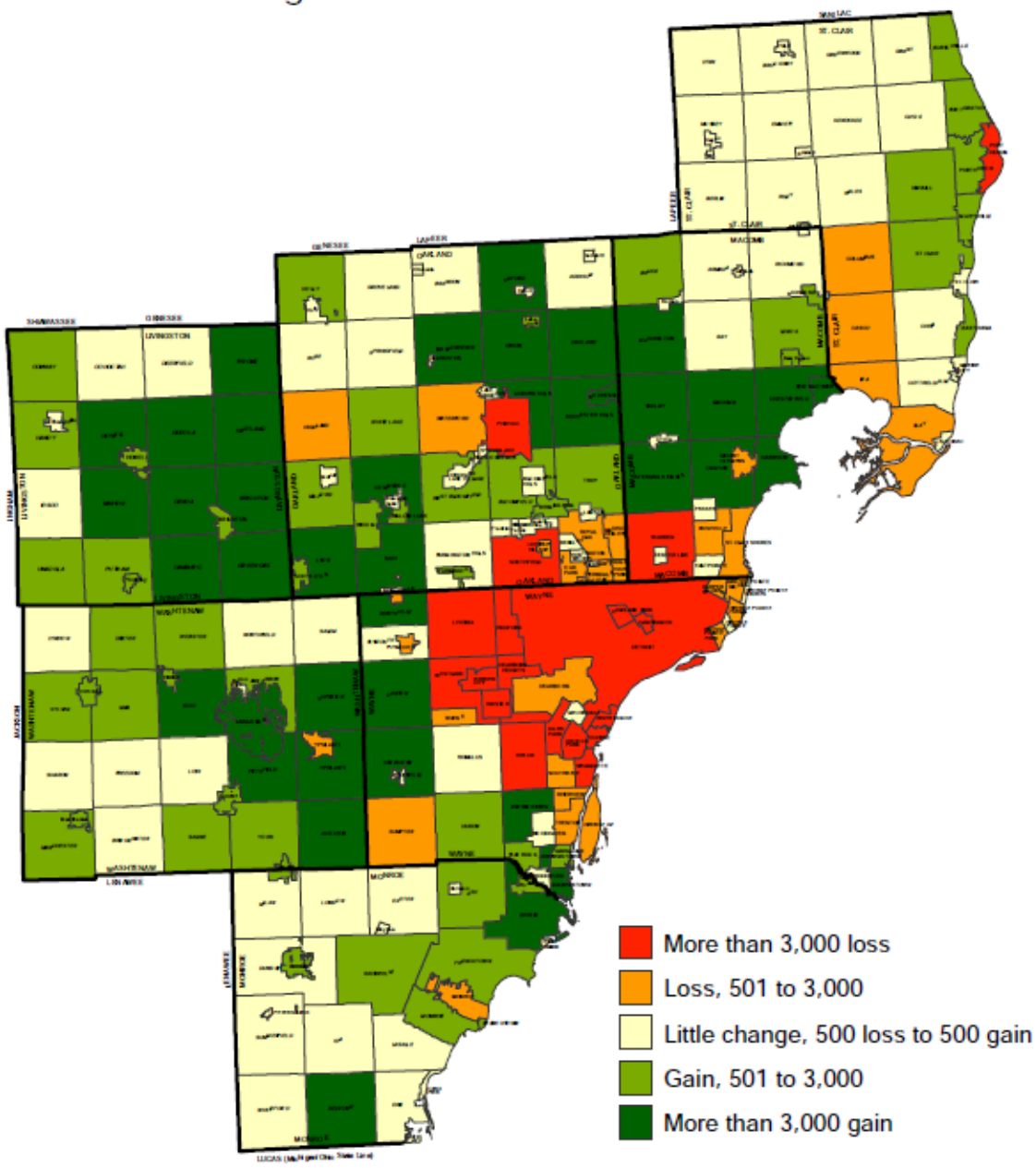
11 - Southeast Michigan 2040 Forecast Summary

Population Change, 2000-2040

Southeast Michigan



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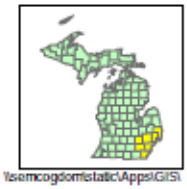

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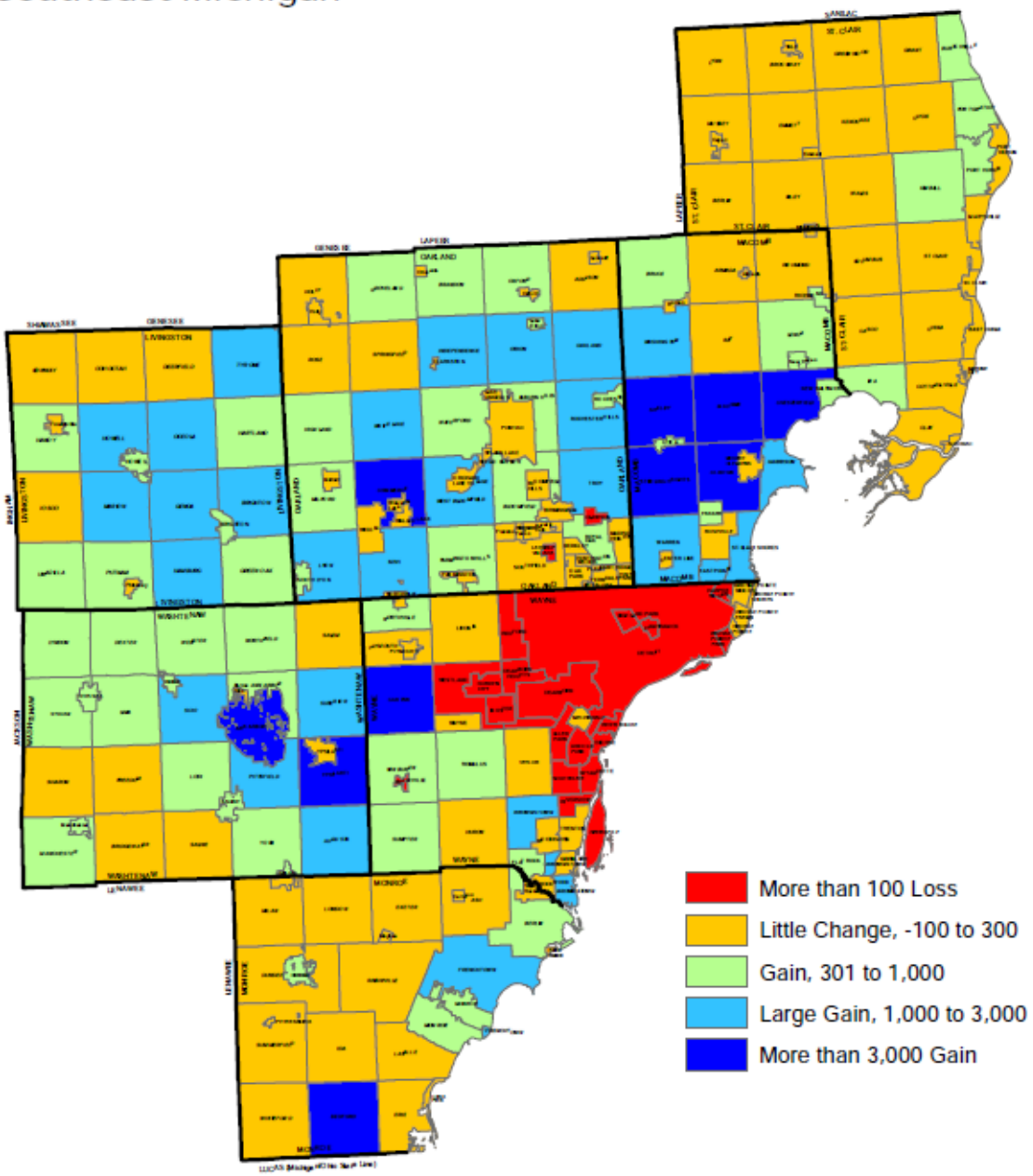
13 - Southeast Michigan 2040 Forecast Summary

14 - Southeast Michigan 2040 Forecast Summary

Household Change, 2010-2040

Southeast Michigan



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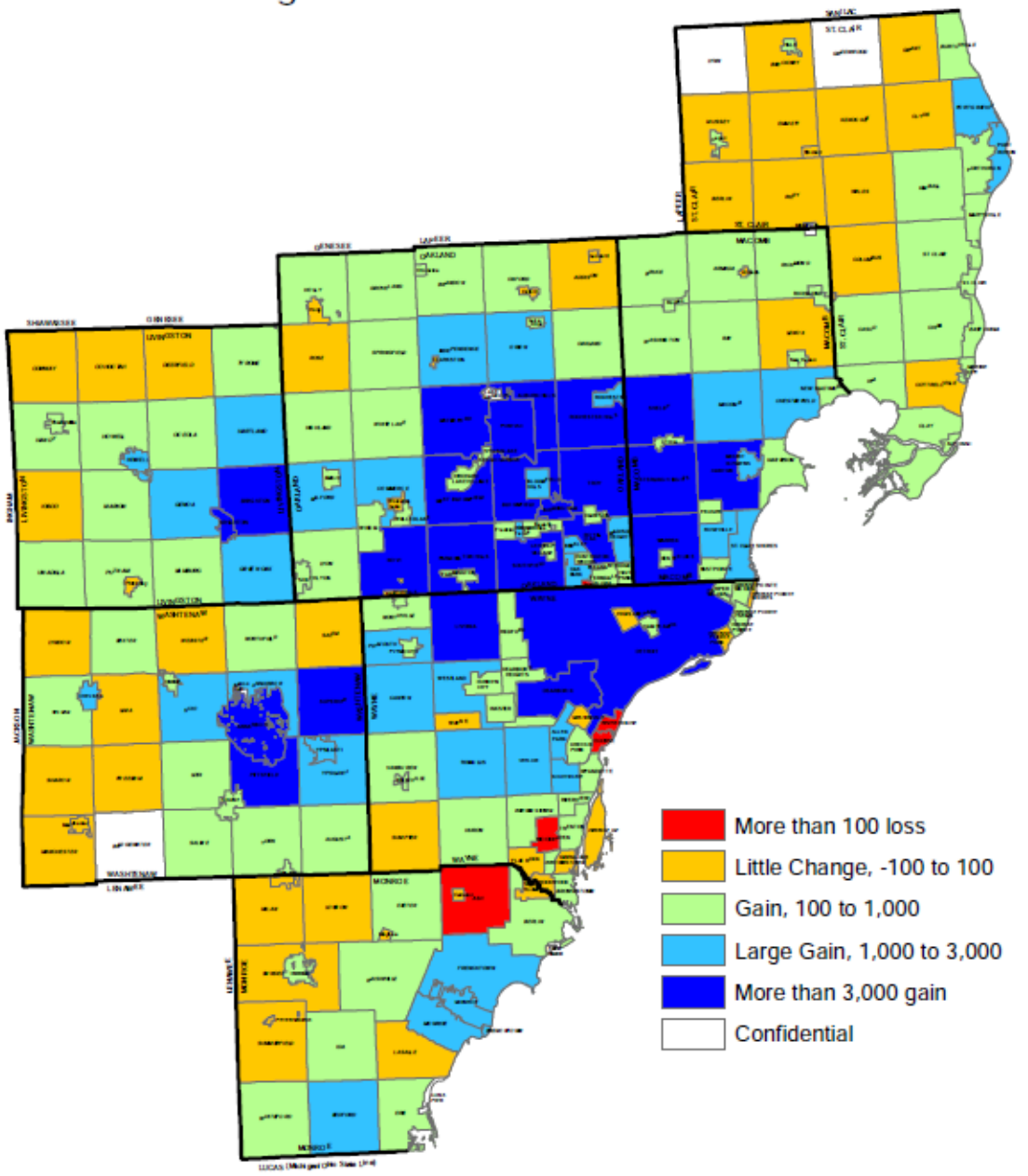
15 - Southeast Michigan 2040 Forecast Summary

Employment Change, 2010-2040

Southeast Michigan



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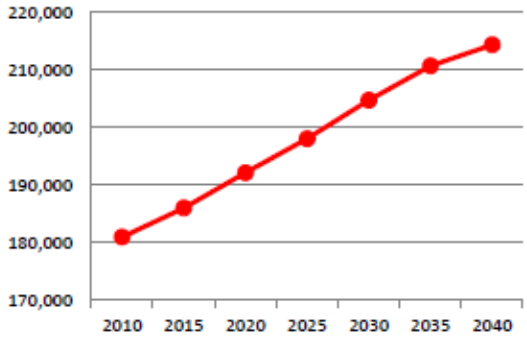
Livingston County 2040 Forecast Summary

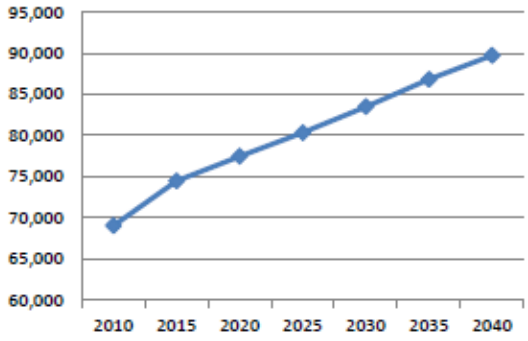
Population and Households

	2010	2020	2030	2040	Change 2010-40 Number	Change 2010-40 Percent
Population	180,967	192,116	204,704	214,323	33,356	18.4%
Households	67,380	73,620	78,514	82,223	14,843	22.0%
Household Size	2.67	2.59	2.59	2.59	-0.08	-2.9%

Population by Year



Employment by Year



Employment by Sector

Sector	2010	2040	Change 2010-40 Number	Change 2010-40 Percent
Natural Resources, Mining, & Construction	5,502	8,494	2,992	54.4%
Manufacturing	6,698	5,862	-836	-12.5%
Wholesale Trade, Transportation, Warehousing, & Utilities	3,889	4,663	774	19.9%
Retail Trade	9,160	9,865	705	7.7%
Knowledge-Based Services	15,213	21,154	5,941	39.1%
Services to Households & Firms	9,279	12,837	3,558	38.3%
Private Education and Health Care	6,503	11,039	4,536	69.8%
Leisure & Hospitality	6,595	8,389	1,794	27.2%
Government	6,218	7,424	1,206	19.4%
Total Employment	**69,057**	**89,727**	**20,670**	**29.9%**

2040 Forecast by Community for Livingston County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Brighton									
Population	7,444	7,910	8,136	8,528	8,794	9,133	9,628	2,184	29.3%
Households	3,603	3,665	3,726	3,795	3,892	3,982	4,098	495	13.7%
Employment	10,812	11,750	12,362	13,008	13,399	14,090	14,927	4,115	38.1%
Brighton Twp.									
Population	17,791	18,807	19,298	20,274	21,306	21,490	21,498	3,707	20.8%
Households	6,415	6,862	7,138	7,510	7,817	7,891	7,937	1,522	23.7%
Employment	9,597	10,858	11,910	12,424	13,015	13,678	14,368	4,771	49.7%
Cohoctah Twp.									
Population	3,317	3,508	3,544	3,445	3,486	3,417	3,394	77	2.3%
Households	1,176	1,285	1,292	1,290	1,290	1,292	1,295	119	10.1%
Employment	104	119	132	147	137	150	174	70	67.3%
Conway Twp.									
Population	3,546	3,542	3,390	3,361	3,320	3,296	3,356	-190	-5.4%
Households	1,199	1,248	1,275	1,275	1,282	1,285	1,293	94	7.8%
Employment	16	15	15	14	13	13	17	1	6.2%
Deerfield Twp.									
Population	4,170	4,549	4,558	4,481	4,441	4,440	4,485	315	7.6%
Households	1,481	1,651	1,666	1,686	1,689	1,692	1,694	213	14.4%
Employment	305	292	286	316	317	363	353	48	15.7%
Fenton (Livingston)									
Population	10	10	10	10	10	10	10	0	0.0%
Households	2	2	2	2	2	2	2	0	0.0%
Employment	0	0	0	0	0	0	0	0	0.0%
Fowlerville									
Population	2,886	2,911	3,086	3,088	3,146	3,256	3,236	350	12.1%
Households	1,198	1,239	1,308	1,322	1,365	1,389	1,408	210	17.5%
Employment	1,578	1,648	1,656	1,767	1,815	1,884	1,904	326	20.7%
Genoa Twp.									
Population	19,821	20,171	20,969	21,486	22,293	22,797	23,061	3,240	16.3%
Households	7,807	8,019	8,333	8,567	8,788	8,988	9,133	1,326	17.0%
Employment	11,430	12,269	12,590	13,045	13,528	13,921	14,029	2,599	22.7%

2040 Forecast by Community for Livingston County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Green Oak Twp.									
Population	17,476	18,090	18,354	18,388	18,586	18,736	18,873	1,397	8.0%
Households	6,450	6,809	6,954	7,026	7,110	7,199	7,278	828	12.8%
Employment	8,343	8,732	8,848	9,167	9,516	9,816	9,962	1,619	19.4%
Hamburg Twp.									
Population	21,165	22,213	23,069	23,554	23,595	23,835	23,987	2,822	13.3%
Households	7,860	8,437	8,837	8,985	9,055	9,141	9,196	1,336	17.0%
Employment	2,656	2,834	2,867	2,931	3,016	3,237	3,364	708	26.7%
Handy Twp.									
Population	5,120	5,028	5,122	5,376	5,673	5,939	6,052	932	18.2%
Households	1,793	1,877	1,964	2,074	2,216	2,308	2,375	582	32.5%
Employment	818	904	938	992	1,078	1,053	1,050	232	28.4%
Hartland Twp.									
Population	14,663	15,017	15,238	15,431	15,654	16,128	16,040	1,377	9.4%
Households	5,154	5,408	5,544	5,659	5,795	5,955	5,966	812	15.8%
Employment	4,784	5,264	5,542	5,818	5,920	6,026	6,206	1,422	29.7%
Howell									
Population	9,489	9,408	9,816	10,196	10,376	10,825	11,448	1,959	20.6%
Households	4,028	4,000	4,148	4,298	4,378	4,523	4,741	713	17.7%
Employment	11,330	11,957	12,331	12,533	13,126	13,530	14,040	2,710	23.9%
Howell Twp.									
Population	6,702	7,286	8,200	9,239	9,725	11,079	11,866	5,164	77.1%
Households	2,531	2,765	3,147	3,439	3,643	4,073	4,380	1,849	73.1%
Employment	4,136	4,375	4,402	4,408	4,521	4,781	4,953	817	19.8%
Iosco Twp.									
Population	3,801	3,826	3,718	3,605	3,545	3,507	3,455	-346	-9.1%
Households	1,278	1,353	1,351	1,355	1,358	1,358	1,358	80	6.3%
Employment	119	120	121	124	124	130	132	13	10.9%
Marion Twp.									
Population	9,996	9,461	10,083	10,453	11,359	11,921	12,339	2,343	23.4%
Households	3,499	3,439	3,722	3,857	4,155	4,394	4,570	1,071	30.6%
Employment	790	869	877	925	1,059	1,120	1,109	319	40.4%

2040 Forecast by Community for Livingston County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Oceola Twp.									
Population	11,936	12,007	12,125	12,714	13,717	14,254	14,154	2,218	18.6%
Households	4,057	4,245	4,414	4,643	5,046	5,206	5,235	1,178	29.0%
Employment	564	612	642	654	748	786	804	240	42.6%
Pinckney									
Population	2,427	2,236	2,343	2,408	2,544	2,624	2,768	341	14.1%
Households	869	853	904	938	985	1,027	1,062	193	22.2%
Employment	559	545	559	565	580	550	558	-1	-0.2%
Putnam Twp.									
Population	5,821	6,297	6,704	6,938	7,178	7,347	7,516	1,695	29.1%
Households	2,166	2,343	2,498	2,564	2,639	2,729	2,780	614	28.3%
Employment	577	716	747	799	839	881	909	332	57.6%
Tyrone Twp.									
Population	10,020	9,888	10,423	10,994	11,821	12,218	12,522	2,502	25.0%
Households	3,528	3,577	3,849	4,096	4,398	4,587	4,696	1,168	33.1%
Employment	355	398	431	475	496	531	579	224	63.1%
Unadilla Twp.									
Population	3,366	3,850	3,930	4,052	4,135	4,412	4,635	1,269	37.7%
Households	1,286	1,481	1,548	1,578	1,611	1,685	1,726	440	34.2%
Employment	184	205	212	225	259	280	289	105	57.1%

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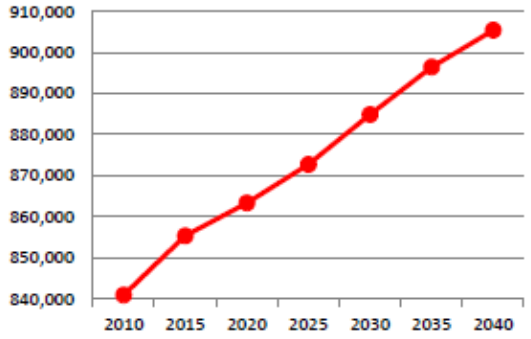
Macomb County 2040 Forecast Summary

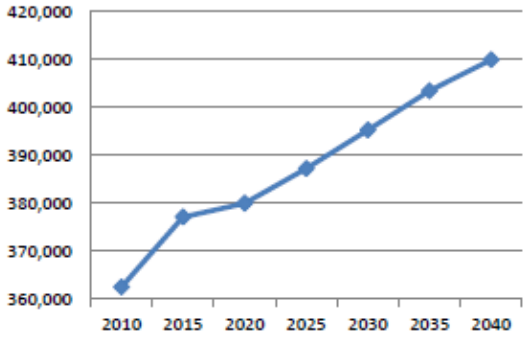
Population and Households

	2010	2020	2030	2040	Change 2010-40 Number	Change 2010-40 Percent
Population	840,978	863,378	884,865	905,390	64,412	7.7%
Households	331,667	349,242	363,519	370,604	38,937	11.7%
Household Size	2.51	2.45	2.41	2.42	-0.09	-3.7%

Population by Year



Employment by Year



Employment by Sector

Sector	2010	2040	Change 2010-40 Number	Change 2010-40 Percent
Natural Resources, Mining, & Construction	19,121	24,726	5,605	29.3%
Manufacturing	49,440	43,603	-5,837	-11.8%
Wholesale Trade, Transportation, Warehousing, & Utilities	19,679	22,155	2,476	12.6%
Retail Trade	42,709	38,987	-3,722	-8.7%
Knowledge-Based Services	65,060	75,493	10,433	16.0%
Services to Households & Firms	51,051	63,043	11,992	23.5%
Private Education and Health Care	45,595	67,111	21,516	47.2%
Leisure & Hospitality	32,679	35,855	3,176	9.7%
Government	37,183	38,913	1,730	4.7%
Total Employment	**362,517**	**409,886**	**47,369**	**13.1%**

2040 Forecast by Community for Macomb County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Armada									
Population	1,730	1,794	1,779	1,771	1,758	1,733	1,731	1	0.1%
Households	607	657	671	674	678	677	677	70	11.5%
Employment	770	770	749	747	733	750	830	60	7.8%
Armada Twp.									
Population	3,649	3,586	3,654	3,666	3,645	3,541	3,575	-74	-2.0%
Households	1,287	1,310	1,383	1,392	1,389	1,392	1,393	106	8.2%
Employment	897	886	895	927	973	1,016	1,046	149	16.6%
Bruce Twp.									
Population	6,947	7,515	7,813	7,779	7,872	7,996	7,985	1,038	14.9%
Households	2,346	2,619	2,787	2,822	2,899	2,985	3,023	677	28.9%
Employment	1,405	1,507	1,513	1,532	1,597	1,569	1,620	215	15.3%
Center Line									
Population	8,257	8,150	8,178	8,255	8,333	8,406	8,579	322	3.9%
Households	3,632	3,620	3,633	3,661	3,691	3,681	3,706	74	2.0%
Employment	6,947	7,043	7,144	7,230	7,317	7,434	7,544	597	8.6%
Chesterfield Twp.									
Population	43,381	44,896	47,276	49,984	51,417	53,314	54,074	10,693	24.6%
Households	16,243	17,521	19,023	20,173	20,861	21,220	21,289	5,046	31.1%
Employment	12,602	13,205	13,207	13,337	13,569	13,870	14,125	1,523	12.1%
Clinton Twp.									
Population	96,796	101,055	102,826	102,486	102,049	103,094	103,823	7,027	7.3%
Households	42,036	43,800	44,418	44,793	44,941	45,096	45,232	3,196	7.6%
Employment	43,322	44,721	44,920	45,752	47,220	48,369	49,476	6,154	14.2%
Eastpointe									
Population	32,442	30,948	31,556	32,779	33,650	34,213	34,467	2,025	6.2%
Households	12,557	12,170	12,631	13,073	13,444	13,660	13,687	1,130	9.0%
Employment	7,803	7,844	7,856	7,861	8,080	8,067	8,274	471	6.0%
Fraser									
Population	14,480	14,865	14,710	14,741	14,623	14,971	14,896	416	2.9%
Households	6,105	6,261	6,300	6,354	6,425	6,520	6,560	455	7.5%
Employment	7,654	7,834	7,897	8,061	8,212	8,284	8,233	579	7.6%

2040 Forecast by Community for Macomb County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Grosse Pointe Shores (Macomb)									
Population	79	81	85	79	81	82	81	2	2.5%
Households	39	42	45	42	44	45	45	6	15.4%
Employment	C	C	C	C	C	C	C	C	C
Harrison Twp.									
Population	24,587	25,703	26,623	26,286	26,907	27,758	28,111	3,524	14.3%
Households	11,128	11,533	11,798	12,080	12,395	12,577	12,683	1,555	14.0%
Employment	5,476	5,565	5,699	5,890	6,009	6,071	6,143	667	12.2%
Lenox Twp.									
Population	5,828	6,136	6,312	6,668	6,870	6,991	6,948	1,120	19.2%
Households	1,676	1,824	1,973	2,057	2,136	2,187	2,189	513	30.6%
Employment	874	884	889	870	872	903	904	30	3.4%
Macomb Twp.									
Population	79,580	84,991	87,234	90,066	91,008	92,402	95,067	15,487	19.5%
Households	26,591	28,880	30,158	30,745	31,137	32,076	33,015	6,424	24.2%
Employment	10,111	10,594	10,824	11,132	11,202	11,655	11,922	1,811	17.9%
Memphis (Macomb)									
Population	823	669	636	642	704	800	770	-53	-6.4%
Households	328	278	252	261	286	325	332	4	1.2%
Employment	C	C	C	C	C	C	C	C	C
Mount Clemens									
Population	16,314	16,395	16,126	15,817	15,587	15,629	15,461	-853	-5.2%
Households	6,714	6,777	6,773	6,772	6,763	6,780	6,775	61	0.9%
Employment	16,601	17,162	17,272	17,823	18,123	18,566	18,752	2,151	13.0%
New Baltimore									
Population	12,084	12,581	13,340	13,681	13,913	13,977	13,848	1,764	14.6%
Households	4,434	4,650	4,977	5,159	5,260	5,311	5,324	890	20.1%
Employment	2,415	2,475	2,477	2,576	2,702	2,810	2,896	481	19.9%
New Haven									
Population	4,642	4,855	5,292	5,424	5,467	5,483	5,535	893	19.2%
Households	1,552	1,667	1,814	1,845	1,857	1,855	1,854	302	19.5%
Employment	631	685	715	750	758	751	754	123	19.5%

2040 Forecast by Community for Macomb County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Ray Twp.									
Population	3,739	3,732	3,663	3,678	3,627	3,588	3,644	-95	-2.5%
Households	1,404	1,421	1,426	1,451	1,463	1,464	1,493	89	6.3%
Employment	367	410	441	446	476	497	530	163	44.4%
Richmond									
Population	5,733	6,027	6,206	6,181	6,166	6,182	6,181	448	7.8%
Households	2,239	2,369	2,487	2,521	2,546	2,548	2,549	310	13.8%
Employment	1,997	2,078	2,154	2,242	2,286	2,397	2,436	439	22.0%
Richmond Twp.									
Population	3,665	3,734	3,642	3,587	3,540	3,497	3,405	-260	-7.1%
Households	1,209	1,259	1,270	1,291	1,300	1,309	1,309	100	8.3%
Employment	696	780	812	860	859	872	861	165	23.7%
Romeo									
Population	3,596	3,698	3,798	3,799	3,738	3,705	3,664	68	1.9%
Households	1,501	1,542	1,616	1,629	1,656	1,671	1,676	175	11.7%
Employment	4,962	5,183	5,113	5,108	5,239	5,311	5,364	402	8.1%
Roseville									
Population	47,299	46,542	46,293	45,613	45,149	44,995	45,263	-2,036	-4.3%
Households	19,553	19,470	19,712	19,798	19,708	19,730	19,780	227	1.2%
Employment	22,241	22,572	22,034	22,378	22,813	23,243	23,634	1,393	6.3%
Shelby Twp.									
Population	73,804	78,507	78,833	77,989	79,254	80,495	82,358	8,554	11.6%
Households	28,299	30,821	31,234	31,350	31,918	32,411	32,814	4,515	16.0%
Employment	25,748	26,807	27,256	27,800	28,236	28,762	29,041	3,293	12.8%
St. Clair Shores									
Population	59,715	59,791	59,727	59,583	60,986	61,478	61,416	1,701	2.8%
Households	26,585	27,095	27,408	27,656	28,685	29,177	29,245	2,660	10.0%
Employment	17,516	18,643	19,030	19,669	20,067	20,308	20,512	2,996	17.1%
Sterling Heights									
Population	129,699	129,535	131,058	131,907	134,666	135,944	136,527	6,828	5.3%
Households	49,451	49,886	50,654	51,647	52,826	53,745	54,116	4,665	9.4%
Employment	58,338	61,546	61,635	62,662	64,045	65,364	65,872	7,534	12.9%

2040 Forecast by Community for Macomb County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Utica									
Population	4,757	4,862	5,006	5,020	4,995	5,024	5,070	313	6.6%
Households	2,218	2,298	2,433	2,503	2,537	2,577	2,596	378	17.0%
Employment	5398	5,478	5,519	5,596	5,694	5,795	5,861	463	8.6%
Warren									
Population	134,056	129,860	126,344	128,357	130,987	132,615	134,268	212	0.2%
Households	53,442	52,448	52,557	54,265	55,771	56,088	56,139	2,697	5.0%
Employment	101,825	106,165	107,600	109,559	111,638	114,056	116,451	14,626	14.4%
Washington Twp.									
Population	23,296	24,866	25,368	26,902	27,873	28,510	28,643	5,347	23.0%
Households	8,492	9,339	9,809	10,583	10,903	11,062	11,103	2,611	30.7%
Employment	5,520	5,846	5,902	5,977	6,105	6,268	6,389	869	15.7%

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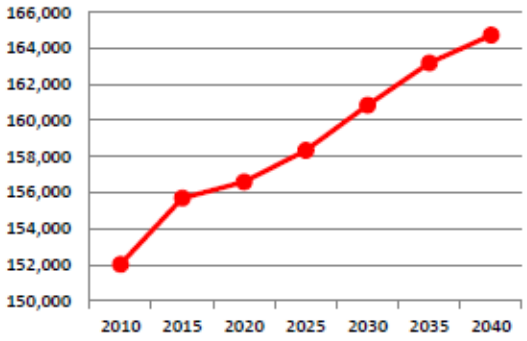
Monroe County 2040 Forecast Summary

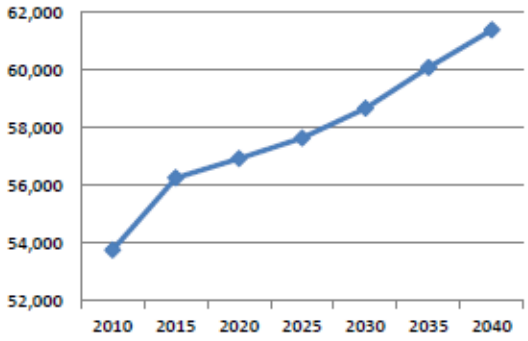
Population and Households

	2010	2020	2030	2040	Change 2010-40 Number	Change 2010-40 Percent
Population	152,021	156,592	160,841	164,720	12,699	8.4%
Households	58,230	62,539	66,071	67,823	9,593	16.5%
Household Size	2.59	2.48	2.41	2.40	-0.18	-7.0%

Population by Year



Employment by Year



Employment by Sector

Sector	2010	2040	Change 2010-40 Number	Change 2010-40 Percent
Natural Resources, Mining, & Construction	5,515	5,865	350	6.3%
Manufacturing	5,171	3,738	-1,433	-27.7%
Wholesale Trade, Transportation, Warehousing, & Utilities	4,853	5,204	351	7.2%
Retail Trade	6,548	6,289	-259	-4.0%
Knowledge-Based Services	8,679	11,315	2,636	30.4%
Services to Households & Firms	5,253	6,683	1,430	27.2%
Private Education and Health Care	6,182	9,544	3,362	54.4%
Leisure & Hospitality	5,643	6,537	894	15.8%
Government	5,917	6,207	290	4.9%
Total Employment	**53,761**	**61,382**	**7,621**	**14.2%**

2040 Forecast by Community for Monroe County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Ash Twp.									
Population	5,438	5,905	5,975	5,838	5,956	6,033	5,902	464	8.5%
Households	2,050	2,218	2,287	2,323	2,349	2,340	2,337	287	14.0%
Employment	2,137	2,133	2,026	2,035	2,022	2,037	2,000	-137	-6.4%
Bedford Twp.									
Population	31,085	32,383	33,078	33,961	34,800	35,752	36,181	5,096	16.4%
Households	11,885	12,685	13,246	13,885	14,463	14,874	14,997	3,112	26.2%
Employment	6,387	6,668	6,839	6,954	7,150	7,259	7,543	1,156	18.1%
Berlin Twp.									
Population	7,206	7,408	7,740	8,227	8,388	8,495	8,624	1,418	19.7%
Households	2,575	2,744	2,809	2,991	3,075	3,134	3,193	618	24.0%
Employment	1,235	1,188	1,262	1,334	1,371	1,366	1,339	104	8.4%
Carleton									
Population	2,345	2,432	2,545	2,670	2,713	2,600	2,580	235	10.0%
Households	953	987	1,037	1,102	1,127	1,112	1,108	155	16.3%
Employment	588	593	575	578	598	635	598	10	1.7%
Dundee									
Population	3,957	4,337	4,304	4,295	4,470	4,576	4,696	739	18.7%
Households	1,539	1,714	1,746	1,784	1,885	1,951	2,021	482	31.3%
Employment	2,488	2,590	2,602	2,576	2,615	2,655	2,725	237	9.5%
Dundee Twp.									
Population	2,802	3,003	2,924	2,930	2,997	3,108	3,093	291	10.4%
Households	1,026	1,121	1,118	1,140	1,166	1,207	1,221	195	19.0%
Employment	397	450	412	415	404	408	415	18	4.5%
Erie Twp.									
Population	4,517	4,929	4,765	4,652	4,645	4,644	4,635	118	2.6%
Households	1,781	1,961	1,964	1,966	1,966	1,965	1,961	180	10.1%
Employment	804	802	865	898	915	930	959	155	19.3%
Estral Beach									
Population	418	520	495	484	456	444	446	28	6.7%
Households	183	230	224	224	222	222	221	38	20.8%
Employment	C	C	C	C	C	C	C	C	C

2040 Forecast by Community for Monroe County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Exeter Twp.									
Population	3,406	3,426	3,323	3,249	3,172	3,153	3,159	-247	-7.3%
Households	1,222	1,249	1,253	1,255	1,254	1,257	1,251	29	2.4%
Employment	300	359	371	392	417	417	414	114	38.0%
Frenchtown Twp.									
Population	20,428	21,121	21,319	21,832	22,266	22,803	23,633	3,205	15.7%
Households	7,958	8,343	8,679	8,986	9,293	9,506	9,729	1,771	22.3%
Employment	12,616	13,380	13,469	13,518	13,668	13,969	14,176	1,560	12.4%
Ida Twp.									
Population	4,964	5,024	4,763	4,751	4,808	4,834	4,857	-107	-2.2%
Households	1,751	1,813	1,827	1,860	1,899	1,913	1,925	174	9.9%
Employment	585	641	653	685	662	666	730	145	24.8%
LaSalle Twp.									
Population	4,894	5,130	5,115	4,943	4,873	4,888	4,851	-43	-0.9%
Households	1,832	1,941	1,956	1,960	1,962	1,967	1,953	121	6.6%
Employment	286	303	289	288	297	329	372	86	30.1%
London Twp.									
Population	3,048	3,171	3,080	3,130	3,099	3,012	3,049	1	0.0%
Households	1,102	1,174	1,184	1,185	1,184	1,185	1,185	83	7.5%
Employment	88	104	109	94	98	123	122	34	38.6%
Luna Pier									
Population	1,436	1,586	1,603	1,590	1,600	1,599	1,594	158	11.0%
Households	608	657	684	693	698	695	707	99	16.3%
Employment	C	C	C	C	C	C	C	C	C
Maybee									
Population	562	556	562	633	671	737	734	172	30.6%
Households	205	210	214	249	268	274	279	74	36.1%
Employment	66	67	65	65	63	66	68	2	3.0%
Milan (Monroe)									
Population	2,066	2,183	2,199	2,253	2,295	2,402	2,400	334	16.2%
Households	808	869	896	919	942	992	994	186	23.0%
Employment	629	644	651	641	631	644	673	44	7.0%

2040 Forecast by Community for Monroe County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Milan Twp.									
Population	1,601	1,727	1,668	1,630	1,681	1,692	1,669	68	4.2%
Households	613	646	650	648	651	657	659	46	7.5%
Employment	244	257	249	240	244	252	250	6	2.5%
Monroe									
Population	20,733	19,818	19,899	19,800	19,995	20,352	20,164	-569	-2.7%
Households	8,238	8,051	8,246	8,311	8,509	8,638	8,595	357	4.3%
Employment	15,192	15,740	15,950	16,116	16,460	16,956	17,381	2,189	14.4%
Monroe Twp.									
Population	14,568	14,241	14,513	14,893	15,233	15,280	15,515	947	6.5%
Households	5,719	5,764	5,973	6,194	6,416	6,512	6,624	905	15.8%
Employment	7,017	7,482	7,720	7,952	8,171	8,421	8,695	1,678	23.9%
Petersburg									
Population	1,146	1,088	1,146	1,158	1,202	1,305	1,426	280	24.4%
Households	449	446	486	500	520	544	571	122	27.2%
Employment	271	294	285	278	277	288	264	-7	-2.6%
Raisinville Twp.									
Population	5,816	6,077	5,922	5,855	5,882	5,830	5,790	-26	-0.4%
Households	2,094	2,236	2,240	2,251	2,281	2,285	2,303	209	10.0%
Employment	507	571	576	641	622	653	658	151	29.8%
South Rockwood									
Population	1,675	1,734	1,741	1,783	1,836	1,911	1,953	278	16.6%
Households	687	714	724	756	790	797	814	127	18.5%
Employment	124	135	143	156	182	171	170	46	37.1%
Summerfield Twp.									
Population	3,308	3,215	3,274	3,228	3,247	3,160	3,115	-193	-5.8%
Households	1,195	1,202	1,255	1,258	1,266	1,269	1,269	74	6.2%
Employment	696	673	651	639	696	698	702	6	0.9%
Whiteford Twp.									
Population	4,602	4,676	4,639	4,547	4,556	4,570	4,654	52	1.1%
Households	1,757	1,840	1,841	1,865	1,885	1,893	1,906	149	8.5%
Employment	810	887	899	895	887	927	926	116	14.3%

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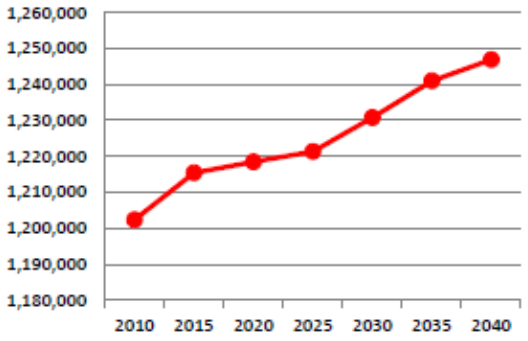
Oakland County 2040 Forecast Summary

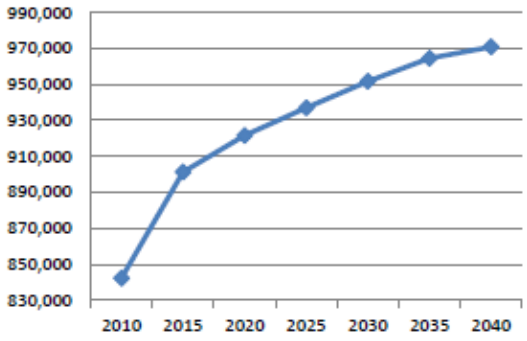
Population and Households

	2010	2020	2030	2040	Change 2010-40 Number	Change 2010-40 Percent
Population	1,202,362	1,218,449	1,230,755	1,246,863	44,501	3.7%
Households	483,698	504,731	509,286	510,257	26,559	5.5%
Household Size	2.46	2.39	2.39	2.42	-0.04	-1.7%

Population by Year



Employment by Year



Employment by Sector

Sector	2010	2040	Change 2010-40 Number	Change 2010-40 Percent
Natural Resources, Mining, & Construction	33,768	40,333	6,565	19.4%
Manufacturing	57,437	51,983	-5,454	-9.5%
Wholesale Trade, Transportation, Warehousing, & Utilities	50,447	50,348	-99	-0.2%
Retail Trade	83,349	73,446	-9,903	-11.9%
Knowledge-Based Services	252,852	302,885	50,033	19.8%
Services to Households & Firms	116,432	142,597	26,165	22.5%
Private Education and Health Care	122,712	173,549	50,837	41.4%
Leisure & Hospitality	69,717	75,622	5,905	8.5%
Government	55,508	60,034	4,526	8.2%
Total Employment	**842,222**	**970,797**	**128,575**	**15.3%**

2040 Forecast by Community for Oakland County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Addison Twp.									
Population	5,948	6,108	6,011	5,871	5,848	5,784	5,770	-178	-3.0%
Households	2,161	2,288	2,285	2,289	2,289	2,289	2,290	129	6.0%
Employment	252	292	311	309	316	327	325	73	29.0%
Auburn Hills									
Population	21,412	22,503	22,578	22,827	22,993	23,514	24,248	2,836	13.2%
Households	8,844	9,362	9,486	9,596	9,653	9,725	9,772	928	10.5%
Employment	69,674	76,471	77,807	78,959	80,971	82,330	82,749	13,075	18.8%
Berkley									
Population	14,970	14,925	14,887	14,994	15,176	15,322	15,345	375	2.5%
Households	6,594	6,639	6,663	6,664	6,683	6,622	6,606	12	0.2%
Employment	4,713	5,157	5,425	5,562	5,701	5,932	6,004	1,291	27.4%
Beverly Hills									
Population	10,267	10,214	10,231	10,272	10,288	10,309	10,338	71	0.7%
Households	4,038	4,011	4,087	4,078	4,090	4,094	4,081	43	1.1%
Employment	3,414	3,702	3,808	3,785	3,795	3,809	3,866	452	13.2%
Bingham Farms									
Population	1,111	1,170	1,165	1,137	1,130	1,123	1,136	25	2.3%
Households	527	549	553	544	546	548	551	24	4.6%
Employment	8,782	9,428	9,681	10,140	10,095	10,327	10,138	1,356	15.4%
Birmingham									
Population	20,103	20,398	20,539	21,022	21,285	21,540	21,800	1,697	8.4%
Households	9,039	9,203	9,303	9,280	9,292	9,323	9,309	270	3.0%
Employment	16,094	17,417	17,808	18,179	18,694	18,651	19,121	3,027	18.8%
Bloomfield Hills									
Population	3,869	4,005	4,076	4,124	4,180	4,134	4,179	310	8.0%
Households	1,489	1,548	1,568	1,568	1,572	1,566	1,545	56	3.8%
Employment	8,183	8,772	9,005	9,322	9,613	10,047	10,144	1,961	24.0%
Bloomfield Twp.									
Population	41,070	42,448	42,468	42,926	43,183	43,649	44,338	3,268	8.0%
Households	16,466	17,051	17,152	17,176	17,246	17,321	17,233	767	4.7%
Employment	23,822	25,707	26,402	26,860	27,350	27,804	28,476	4,654	19.5%

2040 Forecast by Community for Oakland County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Brandon Twp.									
Population	13,733	13,885	13,828	13,776	13,799	13,608	13,548	-185	-1.3%
Households	4,799	4,946	5,047	5,062	5,125	5,129	5,129	330	6.9%
Employment	1,212	1,291	1,348	1,367	1,385	1,394	1,388	176	14.5%
Clarkston									
Population	882	909	902	926	957	964	980	98	11.1%
Households	402	413	413	422	430	428	424	22	5.5%
Employment	592	621	648	649	684	678	681	89	15.0%
Clawson									
Population	11,825	11,552	11,878	12,041	12,111	12,212	12,373	548	4.6%
Households	5,460	5,274	5,340	5,289	5,264	5,272	5,276	-184	-3.4%
Employment	4,154	4,489	4,467	4,595	4,735	4,757	4,853	699	16.8%
Commerce Twp.									
Population	35,874	39,818	39,770	40,006	40,989	40,933	41,628	5,754	16.0%
Households	13,220	14,793	15,283	15,516	15,916	16,110	16,306	3,086	23.3%
Employment	15,403	16,604	16,714	16,917	17,329	17,414	17,375	1,972	12.8%
Farmington									
Population	10,372	10,546	10,640	10,806	10,719	10,803	10,979	607	5.9%
Households	4,624	4,700	4,713	4,678	4,650	4,656	4,633	9	0.2%
Employment	4,676	4,996	5,081	5,094	5,156	5,233	5,306	630	13.5%
Farmington Hills									
Population	79,740	77,482	78,546	79,817	81,034	81,697	81,897	2,157	2.7%
Households	33,559	34,163	34,744	34,657	34,661	34,565	34,383	824	2.5%
Employment	82,650	87,070	89,276	91,027	91,824	92,945	94,405	11,755	14.2%
Ferndale									
Population	19,900	19,919	20,442	20,697	20,702	20,849	20,982	1,082	5.4%
Households	9,559	9,463	9,466	9,543	9,627	9,707	9,689	130	1.4%
Employment	9,243	9,810	9,923	9,980	10,088	10,087	10,075	832	9.0%
Franklin									
Population	3,150	3,244	3,209	3,207	3,255	3,316	3,406	256	8.1%
Households	1,118	1,159	1,161	1,161	1,175	1,175	1,171	53	4.7%
Employment	545	610	650	642	636	696	690	145	26.6%

2040 Forecast by Community for Oakland County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Groveland Twp.									
Population	5,476	5,619	5,598	5,665	5,715	5,737	5,815	339	6.2%
Households	1,943	2,038	2,088	2,138	2,188	2,238	2,288	345	17.8%
Employment	891	983	993	1,001	1,029	1,028	1,045	154	17.3%
Hazel Park									
Population	16,422	15,908	15,929	16,153	16,222	16,308	16,359	-63	-0.4%
Households	6,641	6,415	6,511	6,560	6,540	6,548	6,591	-50	-0.8%
Employment	3,029	3,109	3,124	3,205	3,200	3,220	3,132	103	3.4%
Highland Twp.									
Population	19,202	19,217	18,674	18,427	18,382	18,172	18,427	-775	-4.0%
Households	7,125	7,391	7,487	7,543	7,594	7,629	7,623	498	7.0%
Employment	3,476	3,617	3,621	3,680	3,735	3,760	3,715	239	6.9%
Holly									
Population	6,086	5,993	5,801	5,865	5,997	5,919	6,132	46	0.8%
Households	2,453	2,509	2,519	2,596	2,649	2,608	2,644	191	7.8%
Employment	1,438	1,508	1,512	1,489	1,548	1,542	1,536	98	6.8%
Holly Twp.									
Population	5,276	5,546	5,418	5,403	5,267	5,340	5,440	164	3.1%
Households	1,977	2,169	2,177	2,181	2,179	2,185	2,187	210	10.6%
Employment	469	475	525	568	579	594	594	125	26.7%
Huntington Woods									
Population	6,238	6,290	6,273	6,417	6,383	6,345	6,439	201	3.2%
Households	2,354	2,393	2,424	2,444	2,426	2,413	2,409	55	2.3%
Employment	1,442	1,588	1,573	1,661	1,635	1,650	1,587	145	10.1%
Independence Twp.									
Population	34,681	34,816	35,094	33,671	35,358	33,914	36,329	1,648	4.8%
Households	12,825	13,496	13,644	13,722	13,821	13,880	13,905	1,080	8.4%
Employment	7,798	8,346	8,636	8,961	9,347	9,419	9,652	1,854	23.8%
Keego Harbor									
Population	2,970	3,028	3,060	3,154	3,127	3,153	3,169	199	6.7%
Households	1,292	1,336	1,371	1,398	1,387	1,404	1,394	102	7.9%
Employment	955	1,026	1,079	1,139	1,120	1,078	1,103	148	15.5%

2040 Forecast by Community for Oakland County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Lake Angelus									
Population	290	291	291	307	336	336	354	64	22.1%
Households	130	132	131	135	142	138	139	9	6.9%
Employment	C	C	C	C	C	C	C	C	C
Lake Orion									
Population	2,973	3,025	3,223	3,390	3,633	3,822	3,881	908	30.5%
Households	1,304	1,306	1,392	1,449	1,505	1,589	1,611	307	23.5%
Employment	1,350	1,389	1,454	1,480	1,460	1,465	1,550	200	14.8%
Lathrup Village									
Population	4,075	3,703	3,824	3,727	3,675	3,661	3,588	-487	-12.0%
Households	1,610	1,504	1,536	1,497	1,493	1,511	1,471	-139	-8.6%
Employment	2,963	3,176	3,275	3,349	3,367	3,430	3,434	471	15.9%
Leonard									
Population	403	423	456	426	401	396	381	-22	-5.5%
Households	153	169	186	175	168	170	165	12	7.8%
Employment	74	90	91	97	96	101	100	26	35.1%
Lyon Twp.									
Population	14,545	17,070	17,898	18,714	19,221	19,378	19,621	5,076	34.9%
Households	5,226	6,149	6,547	6,832	7,010	7,090	7,142	1,916	36.7%
Employment	5,681	6,163	6,281	6,346	6,401	6,467	6,472	791	13.9%
Madison Heights									
Population	29,694	29,065	29,338	29,108	29,513	30,068	30,542	848	2.9%
Households	12,712	12,428	12,620	12,639	12,677	12,709	12,695	-17	-0.1%
Employment	28,444	30,176	30,462	30,387	30,628	30,451	30,240	1,796	6.3%
Milford									
Population	6,175	6,508	6,546	6,580	6,446	6,402	6,550	375	6.1%
Households	2,589	2,780	2,832	2,833	2,831	2,854	2,833	244	9.4%
Employment	2,654	2,799	2,804	2,826	2,919	3,120	3,139	485	18.3%
Milford Twp.									
Population	9,561	9,752	9,747	9,711	9,728	9,581	9,807	246	2.6%
Households	3,422	3,531	3,641	3,678	3,732	3,740	3,748	326	9.5%
Employment	5,986	6,598	7,047	7,409	7,473	7,758	7,775	1,789	29.9%

2040 Forecast by Community for Oakland County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Northville (Oakland)									
Population	3,231	3,312	3,164	3,224	3,199	3,282	3,259	28	0.9%
Households	1,321	1,340	1,303	1,311	1,299	1,317	1,304	-17	-1.3%
Employment	560	560	581	580	612	649	651	91	16.2%
Novi									
Population	55,224	58,164	57,805	57,932	57,761	57,344	57,897	2,673	4.8%
Households	22,258	23,759	24,042	24,112	24,158	24,195	24,234	1,976	8.9%
Employment	37,928	40,902	41,419	41,949	42,482	43,381	44,227	6,299	16.6%
Novi Twp.									
Population	150	152	140	146	144	139	139	-11	-7.3%
Households	59	63	59	61	61	59	58	-1	-1.7%
Employment	0	0	0	0	0	0	0	0	0.0%
Oak Park									
Population	29,319	28,222	27,569	27,128	26,996	26,811	26,981	-2,338	-8.0%
Households	11,719	11,733	11,812	11,696	11,694	11,680	11,623	-96	-0.8%
Employment	10,175	10,781	11,015	11,172	11,242	11,267	11,182	1,007	9.9%
Oakland Twp.									
Population	16,779	18,614	18,425	19,864	19,625	20,237	20,400	3,621	21.6%
Households	5,777	6,441	6,871	7,057	7,142	7,278	7,345	1,568	27.1%
Employment	1,844	1,918	1,955	1,955	2,032	2,053	2,031	187	10.1%
Orchard Lake									
Population	2,375	2,597	2,557	2,556	2,534	2,501	2,499	124	5.2%
Households	802	879	889	901	902	899	893	91	11.3%
Employment	674	705	714	742	752	790	802	128	19.0%
Orion Twp.									
Population	32,421	33,462	33,966	34,527	34,630	34,633	35,040	2,619	8.1%
Households	11,673	12,218	12,538	12,662	12,703	12,753	12,789	1,116	9.6%
Employment	9,467	11,176	11,216	11,189	11,204	11,018	10,905	1,438	15.2%
Ortonville									
Population	1,442	1,548	1,533	1,562	1,560	1,573	1,620	178	12.3%
Households	511	559	565	583	585	594	599	88	17.2%
Employment	496	561	590	636	653	630	647	151	30.4%

2040 Forecast by Community for Oakland County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Oxford									
Population	3,436	3,676	3,797	3,846	3,928	3,937	3,988	552	16.1%
Households	1,335	1,435	1,500	1,508	1,536	1,543	1,550	215	16.1%
Employment	1,682	1,701	1,738	1,746	1,774	1,770	1,737	55	3.3%
Oxford Twp.									
Population	17,090	17,843	18,256	18,673	18,846	18,865	19,167	2,077	12.2%
Households	6,063	6,399	6,641	6,769	6,842	6,884	6,952	889	14.7%
Employment	4,293	4,404	4,379	4,381	4,517	4,642	4,661	368	8.6%
Pleasant Ridge									
Population	2,526	2,448	2,399	2,429	2,378	2,415	2,370	-156	-6.2%
Households	1,115	1,090	1,074	1,077	1,070	1,085	1,066	-49	-4.4%
Employment	485	546	596	645	635	612	615	130	26.8%
Pontiac									
Population	59,515	56,081	57,180	55,626	56,063	56,430	55,870	-3,645	-6.1%
Households	22,220	21,463	22,578	22,174	22,621	23,118	22,418	198	0.9%
Employment	36,836	39,003	39,792	40,135	40,816	41,221	41,631	4,795	13.0%
Rochester									
Population	12,711	13,650	13,586	13,752	13,715	13,734	13,760	1,049	8.3%
Households	5,514	5,678	5,734	5,810	5,803	5,844	5,815	301	5.5%
Employment	7,028	7,523	7,772	8,077	8,131	8,330	8,566	1,538	21.9%
Rochester Hills									
Population	70,995	72,638	72,067	71,930	72,072	72,036	73,528	2,533	3.6%
Households	27,578	28,753	29,036	29,180	29,316	29,392	29,420	1,842	6.7%
Employment	35,756	38,298	38,818	39,347	40,127	40,828	41,179	5,423	15.2%
Rose Twp									
Population	6,250	6,301	6,154	6,032	6,016	6,076	6,039	-211	-3.4%
Households	2,272	2,351	2,372	2,371	2,373	2,366	2,358	86	3.8%
Employment	365	367	388	439	425	398	411	46	12.6%
Royal Oak									
Population	57,236	56,700	57,794	57,743	58,000	58,348	59,105	1,869	3.3%
Households	28,063	28,268	28,604	28,498	28,566	28,642	28,480	417	1.5%
Employment	35,755	38,413	39,163	39,541	40,122	40,270	40,523	4,768	13.3%

2040 Forecast by Community for Oakland County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Royal Oak Twp.									
Population	2,419	2,546	2,581	2,661	2,734	2,802	2,908	489	20.2%
Households	1,024	1,102	1,124	1,120	1,136	1,135	1,137	113	11.0%
Employment	1,363	1,400	1,405	1,367	1,288	1,258	1,203	-160	-11.7%
South Lyon									
Population	11,327	11,902	11,905	12,174	12,216	12,269	12,433	1,106	9.8%
Households	4,646	4,936	5,008	5,038	5,044	5,069	5,046	400	8.6%
Employment	2,064	2,193	2,188	2,233	2,287	2,324	2,338	274	13.3%
Southfield									
Population	71,739	72,115	71,420	70,958	71,892	72,238	72,418	679	0.9%
Households	31,778	31,928	32,166	32,031	32,031	31,972	31,796	18	0.1%
Employment	138,475	145,053	150,068	153,052	155,850	157,841	158,408	19,933	14.4%
Southfield Twp.									
Population	19	25	23	22	19	19	22	3	15.8%
Households	8	10	10	10	9	9	10	2	25.0%
Employment	C	C	C	C	C	C	C	C	C
Springfield Twp.									
Population	13,940	13,688	13,461	13,450	13,306	13,058	12,963	-977	-7.0%
Households	5,005	5,044	5,097	5,142	5,166	5,165	5,166	161	3.2%
Employment	3,093	3,342	3,414	3,407	3,507	3,636	3,706	613	19.8%
Sylvan Lake									
Population	1,720	1,814	1,845	1,863	1,869	1,876	1,835	115	6.7%
Households	809	839	854	862	864	870	842	33	4.1%
Employment	1,303	1,350	1,391	1,390	1,421	1,446	1,534	231	17.7%
Troy									
Population	80,980	81,261	81,362	81,590	81,577	81,837	82,062	1,082	1.3%
Households	30,703	31,261	31,907	32,395	32,558	32,621	32,721	2,018	6.6%
Employment	129,361	140,638	143,940	146,406	148,900	151,723	152,129	22,768	17.6%
Walled Lake									
Population	6,999	7,363	7,331	7,306	7,531	7,561	7,678	679	9.7%
Households	3,347	3,546	3,576	3,559	3,595	3,566	3,542	195	5.8%
Employment	2,353	2,433	2,467	2,520	2,548	2,566	2,596	243	10.3%

2040 Forecast by Community for Oakland County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Waterford Twp.									
Population	71,707	71,060	70,928	70,210	71,148	71,113	71,462	-245	-0.3%
Households	29,612	29,988	30,248	30,356	30,492	30,597	30,584	972	3.3%
Employment	26,118	27,747	28,162	28,588	28,884	29,267	29,224	3,106	11.9%
West Bloomfield Twp.									
Population	64,690	64,988	65,023	65,136	65,730	64,897	66,056	1,366	2.1%
Households	24,111	25,116	25,302	25,229	25,258	25,244	25,122	1,011	4.2%
Employment	18,344	19,726	20,445	21,201	21,344	21,849	22,189	3,845	21.0%
White Lake Twp.									
Population	30,019	30,509	30,441	29,962	29,941	29,681	30,329	310	1.0%
Households	11,262	11,864	12,142	12,253	12,375	12,453	12,516	1,254	11.1%
Employment	4,841	4,943	4,962	5,056	5,072	5,086	5,062	221	4.6%
Wixom									
Population	13,498	12,871	13,117	13,640	14,045	14,381	14,942	1,444	10.7%
Households	5,725	5,370	5,504	5,630	5,713	5,753	5,824	99	1.7%
Employment	11,198	11,730	11,769	11,794	11,698	11,701	11,620	422	3.8%
Wolverine Lake									
Population	4,312	4,391	4,280	4,240	4,227	4,290	4,312	0	0.0%
Households	1,733	1,814	1,805	1,811	1,813	1,798	1,804	71	4.1%
Employment	265	290	329	358	362	369	326	61	23.0%

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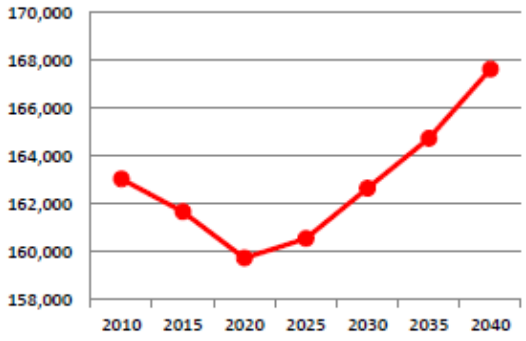
St. Clair County 2040 Forecast Summary

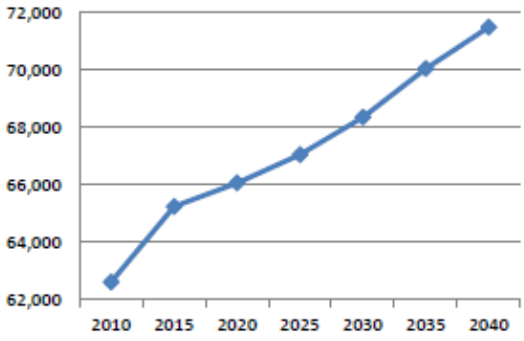
Population and Households

	2010	2020	2030	2040	Change 2010-40 Number	Change 2010-40 Percent
Population	163,040	161,506	164,655	167,624	4,584	2.8%
Households	63,841	65,492	67,887	68,960	5,119	8.0%
Household Size	2.52	2.44	2.39	2.40	-0.12	-4.8%

Population by Year



Employment by Year



Employment by Sector

Sector	2010	2040	Change 2010-40 Number	Change 2010-40 Percent
Natural Resources, Mining, & Construction	4,181	4,754	573	13.7%
Manufacturing	7,043	6,629	-414	-5.9%
Wholesale Trade, Transportation, Warehousing, & Utilities	4,312	4,419	107	2.5%
Retail Trade	8,245	7,623	-622	-7.5%
Knowledge-Based Services	8,288	10,005	1,717	20.7%
Services to Households & Firms	7,787	9,707	1,920	24.7%
Private Education and Health Care	9,667	14,404	4,737	49.0%
Leisure & Hospitality	5,745	6,334	589	10.3%
Government	7,346	7,605	259	3.5%
Total Employment	**62,614**	**71,480**	**8,866**	**14.2%**

2040 Forecast by Community for St. Clair County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Algonac									
Population	4,110	4,474	4,315	4,297	4,528	4,534	4,497	387	9.4%
Households	1,756	1,891	1,877	1,899	2,007	2,020	2,016	260	14.8%
Employment	634	654	637	641	694	711	775	141	22.2%
Berlin Twp.									
Population	3,285	3,185	3,173	3,137	3,145	3,101	3,074	-211	-6.4%
Households	1,152	1,169	1,169	1,190	1,194	1,184	1,184	32	2.8%
Employment	106	97	104	110	110	119	135	29	27.4%
Brockway Twp.									
Population	2,022	1,975	1,987	1,989	1,941	1,877	1,837	-185	-9.1%
Households	705	717	737	750	745	733	732	27	3.8%
Employment	235	278	283	309	313	344	317	82	34.9%
Burtchville Twp.									
Population	4,008	4,145	4,181	4,492	4,627	4,768	4,773	765	19.1%
Households	1,646	1,705	1,745	1,885	1,971	2,025	2,055	409	24.8%
Employment	657	781	823	834	868	903	906	249	37.9%
Capac									
Population	1,890	1,839	1,801	1,808	1,817	1,786	1,834	-56	-3.0%
Households	704	709	726	734	758	769	771	67	9.5%
Employment	1,020	1,049	1,077	1,099	1,160	1,191	1,241	221	21.7%
Casco Twp.									
Population	4,105	3,993	4,009	3,940	3,915	3,925	3,950	-155	-3.8%
Households	1,502	1,532	1,552	1,552	1,574	1,579	1,578	76	5.1%
Employment	693	859	920	955	966	940	972	279	40.3%
China Twp.									
Population	3,551	3,308	3,329	3,327	3,583	3,720	3,798	247	7.0%
Households	1,271	1,271	1,305	1,307	1,422	1,494	1,506	235	18.5%
Employment	1,012	1,104	1,114	1,093	1,085	1,131	1,159	147	14.5%
Clay Twp.									
Population	9,066	8,856	8,747	8,663	8,883	8,828	8,885	-181	-2.0%
Households	3,947	3,885	3,903	3,952	4,074	4,097	4,123	176	4.5%
Employment	1,337	1,443	1,454	1,464	1,504	1,580	1,585	248	18.5%

2040 Forecast by Community for St. Clair County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Clyde Twp.									
Population	5,579	5,482	5,433	5,478	5,367	5,401	5,359	-220	-3.9%
Households	2,060	2,101	2,116	2,122	2,128	2,131	2,120	60	2.9%
Employment	638	618	639	635	574	603	627	-11	-1.7%
Columbus Twp.									
Population	4,070	3,984	3,957	3,884	3,813	3,816	3,794	-276	-6.8%
Households	1,459	1,477	1,505	1,518	1,509	1,517	1,504	45	3.1%
Employment	268	252	243	265	244	283	301	33	12.3%
Cottrellville Twp.									
Population	3,559	3,494	3,529	3,692	3,723	3,733	3,618	59	1.7%
Households	1,389	1,404	1,432	1,495	1,507	1,511	1,493	104	7.5%
Employment	184	170	161	166	174	166	159	-25	-13.6%
East China Twp.									
Population	3,788	3,908	3,954	4,048	4,289	4,441	4,515	727	19.2%
Households	1,603	1,674	1,687	1,743	1,828	1,871	1,891	288	18.0%
Employment	2,061	2,229	2,236	2,272	2,284	2,318	2,341	280	13.6%
Emmett									
Population	269	276	235	281	382	442	498	229	85.1%
Households	91	93	83	99	135	157	177	86	94.5%
Employment	146	142	154	180	180	188	177	31	21.2%
Emmett Twp.									
Population	2,385	2,263	2,240	2,162	2,199	2,188	2,200	-185	-7.8%
Households	837	836	849	857	863	858	867	30	3.6%
Employment	88	108	124	116	134	147	124	36	40.9%
Fort Gratiot Twp.									
Population	11,108	11,524	11,556	11,830	12,110	12,448	12,807	1,699	15.3%
Households	4,563	4,685	4,747	4,879	4,972	5,049	5,106	543	11.9%
Employment	8,366	8,599	8,683	9,052	9,451	9,780	9,998	1,632	19.5%
Grant Twp.									
Population	1,891	1,866	1,781	1,783	1,796	1,784	1,744	-147	-7.8%
Households	675	693	689	700	707	705	692	17	2.5%
Employment	74	78	92	94	88	87	87	13	17.6%

2040 Forecast by Community for St. Clair County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Greenwood Twp.									
Population	1,538	1,521	1,487	1,506	1,479	1,457	1,469	-69	-4.5%
Households	535	561	567	579	578	571	574	39	7.3%
Employment	C	C	C	C	C	C	C	C	C
Ira Twp.									
Population	5,178	5,383	5,508	5,716	5,760	6,159	6,217	1,039	20.1%
Households	2,068	2,172	2,217	2,300	2,352	2,487	2,501	433	20.9%
Employment	1,725	1,850	1,908	1,875	1,917	1,955	1,965	240	13.9%
Kenockee Twp.									
Population	2,470	2,422	2,473	2,509	2,417	2,446	2,444	-26	-1.1%
Households	903	917	957	968	953	954	962	59	6.5%
Employment	96	104	105	104	111	104	109	13	13.5%
Kimball Twp.									
Population	9,358	9,321	9,437	9,468	9,620	9,873	9,961	603	6.4%
Households	3,559	3,600	3,704	3,780	3,895	3,963	3,990	431	12.1%
Employment	2,353	2,473	2,556	2,676	2,750	2,816	2,900	547	23.2%
Lynn Twp.									
Population	1,229	1,202	1,190	1,148	1,136	1,116	1,059	-170	-13.8%
Households	426	425	436	433	436	437	428	2	0.5%
Employment	C	C	C	C	C	C	C	C	C
Marine City									
Population	4,248	4,383	4,299	4,521	4,530	4,619	4,600	352	8.3%
Households	1,765	1,834	1,858	2,006	2,031	2,033	2,037	272	15.4%
Employment	1,895	2,060	2,081	2,086	2,071	2,139	2,125	230	12.1%
Marysville									
Population	9,959	9,834	9,912	9,942	10,214	10,424	10,635	676	6.8%
Households	4,160	4,135	4,149	4,201	4,295	4,345	4,391	231	5.6%
Employment	5,633	5,893	5,752	5,852	5,726	5,829	5,875	242	4.3%
Memphis (St. Clair)									
Population	360	329	317	336	330	350	323	-37	-10.3%
Households	146	133	129	136	137	146	132	-14	-9.6%
Employment	C	C	C	C	C	C	C	C	C

2040 Forecast by Community for St. Clair County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Mussey Twp.									
Population	2,316	2,138	2,093	2,071	2,047	2,058	2,108	-208	-9.0%
Households	808	821	836	821	834	835	834	26	3.2%
Employment	149	175	156	153	135	133	138	-11	-7.4%
Port Huron									
Population	30,184	29,429	29,161	29,141	29,332	29,228	29,219	-965	-3.2%
Households	12,177	12,181	12,143	12,149	12,242	12,220	12,277	100	0.8%
Employment	22,946	23,305	23,728	23,965	24,617	25,204	25,819	2,873	12.5%
Port Huron Twp.									
Population	10,654	10,678	10,685	10,799	10,985	11,433	11,601	947	8.9%
Households	4,044	4,088	4,207	4,299	4,390	4,570	4,663	619	15.3%
Employment	4,968	5,044	5,179	5,186	5,241	5,227	5,395	427	8.6%
Richmond (St. Clair)									
Population	2	2	2	2	2	2	2	0	0.0%
Households	1	1	1	1	1	1	1	0	0.0%
Employment	0	0	0	0	0	0	0	0	0.0%
Riley Twp.									
Population	3,353	3,171	3,147	3,139	3,147	3,127	3,148	-205	-6.1%
Households	1,184	1,158	1,161	1,177	1,191	1,184	1,185	1	0.1%
Employment	182	185	179	178	174	164	175	-7	-3.8%
St. Clair									
Population	5,485	5,552	5,626	5,647	5,640	5,739	5,776	291	5.3%
Households	2,306	2,338	2,380	2,402	2,439	2,436	2,437	131	5.7%
Employment	2,937	3,356	3,316	3,310	3,354	3,445	3,431	494	16.8%
St. Clair Twp.									
Population	6,817	6,705	6,899	6,845	6,951	6,988	7,035	218	3.2%
Households	2,533	2,572	2,677	2,690	2,731	2,772	2,755	222	8.8%
Employment	833	922	887	878	872	891	950	117	14.0%
Wales Twp.									
Population	3,248	3,102	3,009	2,959	2,945	2,927	2,922	-326	-10.0%
Households	1,144	1,146	1,145	1,154	1,168	1,155	1,159	15	1.3%
Employment	250	255	273	258	279	299	319	69	27.6%

2040 Forecast by Community for St. Clair County

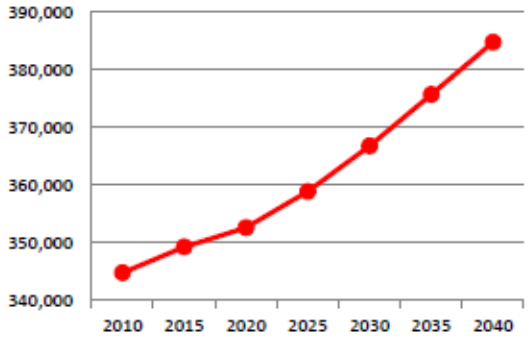
	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Yale									
Population	1,955	1,927	2,036	1,993	2,003	1,921	1,919	-36	-1.8%
Households	722	756	803	808	820	825	819	97	13.4%
Employment	875	900	927	962	1,030	1,113	1,131	256	29.3%

Washtenaw County 2040 Forecast Summary

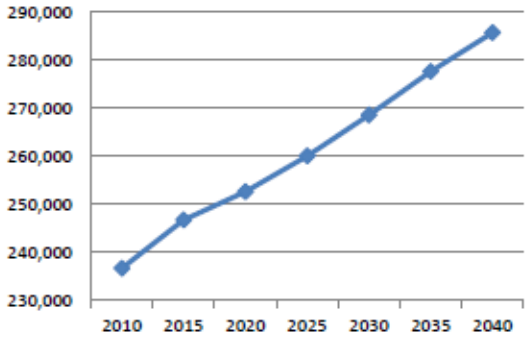
Population and Households

	2010	2020	2030	2040	Change 2010-40 Number	Change 2010-40 Percent
Population	344,791	354,116	368,262	386,235	41,444	12.0%
Households	137,193	146,870	156,324	164,447	27,254	19.9%
Household Size	2.38	2.27	2.22	2.22	-0.16	-6.8%

Population by Year



Employment by Year



Employment by Sector

Sector	2010	2040	Change 2010-40 Number	Change 2010-40 Percent
Natural Resources, Mining, & Construction	7,904	8,484	580	7.3%
Manufacturing	13,441	11,065	-2,376	-17.7%
Wholesale Trade, Transportation, Warehousing, & Utilities	10,082	11,117	1,035	10.3%
Retail Trade	19,466	19,504	38	0.2%
Knowledge-Based Services	42,729	51,428	8,699	20.4%
Services to Households & Firms	23,665	31,868	8,203	34.7%
Private Education and Health Care	31,961	51,006	19,045	59.6%
Leisure & Hospitality	18,505	22,342	3,837	20.7%
Government	68,923	78,841	9,918	14.4%
Total Employment	**236,676**	**285,655**	**48,979**	**20.7%**

2040 Forecast by Community for Washtenaw County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Ann Arbor									
Population	113,934	116,731	116,827	118,813	119,113	119,855	123,786	9,852	8.6%
Households	47,060	48,006	49,108	49,988	50,622	51,364	52,277	5,217	11.1%
Employment	120,588	123,753	127,098	131,230	135,870	140,442	144,899	24,311	20.2%
Ann Arbor Twp.									
Population	4,067	4,131	4,313	4,492	4,966	5,224	5,414	1,347	33.1%
Households	1,721	1,773	1,918	2,033	2,159	2,368	2,442	721	41.9%
Employment	10,454	11,074	11,386	11,789	12,176	12,639	12,865	2,411	23.1%
Augusta Twp.									
Population	6,745	6,838	7,016	7,258	7,593	7,851	7,961	1,216	18.0%
Households	2,433	2,597	2,792	2,962	3,175	3,334	3,437	1,004	41.3%
Employment	1,121	1,146	1,100	1,132	1,154	1,187	1,247	126	11.2%
Barton Hills									
Population	294	288	278	288	286	290	296	2	0.7%
Households	123	123	123	130	131	132	134	11	8.9%
Employment	C	C	C	C	C	C	C	C	C
Bridgewater Twp.									
Population	1,674	1,700	1,666	1,638	1,631	1,660	1,609	-65	-3.9%
Households	627	664	681	690	695	711	711	84	13.4%
Employment	C	C	C	C	C	C	C	C	C
Chelsea									
Population	4,944	5,266	5,380	5,445	5,505	5,814	6,271	1,327	26.8%
Households	2,224	2,377	2,532	2,624	2,712	2,848	3,074	850	38.2%
Employment	6,041	6,270	6,308	6,645	6,903	7,170	7,375	1,334	22.1%
Dexter									
Population	4,067	4,211	4,245	4,320	4,390	4,719	4,885	818	20.1%
Households	1,590	1,685	1,756	1,814	1,846	1,968	2,027	437	27.5%
Employment	3,082	3,336	3,317	3,351	3,334	3,347	3,447	365	11.8%
Dexter Twp.									
Population	6,042	6,451	6,741	6,669	6,787	6,702	6,855	813	13.5%
Households	2,225	2,337	2,449	2,551	2,670	2,736	2,787	562	25.3%
Employment	450	476	463	522	555	618	628	178	39.6%

2040 Forecast by Community for Washtenaw County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Freedom Twp.									
Population	1,428	1,519	1,482	1,419	1,412	1,482	1,482	54	3.8%
Households	583	622	626	622	631	641	642	59	10.1%
Employment	195	221	231	226	221	227	220	25	12.8%
Lima Twp.									
Population	3,307	3,457	3,582	3,856	3,975	4,191	4,304	997	30.1%
Households	1,197	1,273	1,389	1,564	1,652	1,764	1,836	639	53.4%
Employment	518	529	531	512	500	495	519	1	0.2%
Lodi Twp.									
Population	6,058	6,030	5,887	5,760	5,791	6,054	6,174	116	1.9%
Households	2,152	2,208	2,274	2,296	2,357	2,496	2,601	449	20.9%
Employment	897	917	908	957	959	1,003	1,021	124	13.8%
Lyndon Twp.									
Population	2,720	2,821	2,847	2,904	2,842	3,024	3,120	400	14.7%
Households	962	1,017	1,088	1,137	1,146	1,225	1,276	314	32.6%
Employment	236	243	255	250	286	316	312	76	32.2%
Manchester									
Population	2,091	2,153	2,231	2,365	2,544	2,705	2,981	890	42.6%
Households	938	994	1,041	1,115	1,187	1,278	1,404	466	49.7%
Employment	671	666	676	699	710	728	733	62	9.2%
Manchester Twp.									
Population	2,478	2,579	2,542	2,896	3,149	3,244	3,247	769	31.0%
Households	926	1,008	1,070	1,240	1,369	1,429	1,431	505	54.5%
Employment	239	236	242	250	239	236	276	37	15.5%
Milan (Washtenaw)									
Population	3,770	3,724	3,651	3,670	3,933	4,056	4,111	341	9.0%
Households	1,500	1,529	1,568	1,599	1,737	1,799	1,834	334	22.3%
Employment	1,281	1,373	1,408	1,494	1,564	1,625	1,667	386	30.1%
Northfield Twp.									
Population	8,245	8,091	7,960	7,832	8,085	8,241	8,368	123	1.5%
Households	3,303	3,345	3,447	3,491	3,575	3,622	3,684	381	11.5%
Employment	2,026	2,096	2,147	2,275	2,351	2,543	2,660	634	31.3%

2040 Forecast by Community for Washtenaw County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Pittsfield Twp.									
Population	34,663	36,064	36,076	36,356	37,077	38,686	39,376	4,713	13.6%
Households	14,021	14,589	15,021	15,255	15,483	15,952	16,215	2,194	15.6%
Employment	26,554	28,101	28,501	29,041	29,839	30,840	31,493	4,939	18.6%
Salem Twp.									
Population	5,627	5,535	5,206	5,170	5,135	5,216	5,309	-318	-5.7%
Households	2,079	2,154	2,180	2,224	2,252	2,281	2,334	255	12.3%
Employment	951	1,007	1,033	995	1,009	963	998	47	4.9%
Saline									
Population	8,810	8,830	8,645	8,595	8,564	8,582	9,066	256	2.9%
Households	3,699	3,793	3,838	3,884	3,933	3,994	4,294	595	16.1%
Employment	7,144	7,409	7,473	7,518	7,710	7,885	8,141	997	14.0%
Saline Twp.									
Population	1,896	1,995	2,392	2,458	2,457	2,541	2,676	780	41.1%
Households	732	759	759	770	772	822	872	140	19.1%
Employment	166	186	209	230	249	271	309	143	86.1%
Scio Twp.									
Population	16,470	16,800	16,880	18,328	19,581	19,950	20,442	3,972	24.1%
Households	6,405	6,689	7,029	7,810	8,488	8,659	8,885	2,480	38.7%
Employment	17,200	18,146	18,360	18,674	18,979	19,287	19,772	2,572	15.0%
Sharon Twp.									
Population	1,737	1,719	1,599	1,589	1,520	1,594	1,568	-169	-9.7%
Households	659	678	678	678	690	703	702	43	6.5%
Employment	214	248	291	277	294	307	299	85	39.7%
Superior Twp.									
Population	13,058	14,200	14,971	16,308	16,317	16,730	17,021	3,963	30.3%
Households	4,924	5,486	6,396	6,926	7,044	7,261	7,490	2,566	52.1%
Employment	10,563	11,548	12,214	12,610	13,180	13,647	14,163	3,600	34.1%
Sylvan Twp.									
Population	2,833	2,841	3,075	3,012	3,240	3,646	3,922	1,089	38.4%
Households	1,094	1,123	1,273	1,294	1,434	1,593	1,661	567	51.8%
Employment	1,002	1,098	1,117	1,122	1,156	1,181	1,215	213	21.3%

2040 Forecast by Community for Washtenaw County

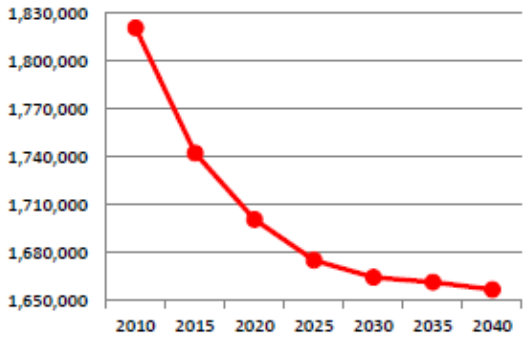
	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Webster Twp.									
Population	6,328	6,235	5,992	5,837	5,882	5,941	5,918	-410	-6.5%
Households	2,215	2,283	2,351	2,395	2,493	2,528	2,531	316	14.3%
Employment	527	572	580	591	563	590	607	80	15.2%
York Twp.									
Population	8,708	8,911	9,032	9,177	9,584	10,177	10,105	1,397	16.0%
Households	2,343	2,386	2,450	2,563	2,678	2,820	2,830	487	20.8%
Employment	1,799	2,149	2,227	2,298	2,369	2,475	2,553	754	41.9%
Ypsilanti									
Population	19,435	19,235	19,071	19,265	20,003	20,095	19,937	502	2.6%
Households	8,026	8,098	8,219	8,265	8,215	8,226	8,298	272	3.4%
Employment	9,631	10,117	10,415	10,827	11,316	11,850	12,061	2,430	25.2%
Ypsilanti Twp.									
Population	53,362	52,426	54,529	54,651	56,900	58,913	60,031	6,669	12.5%
Households	21,432	21,887	22,814	23,902	25,178	26,137	26,738	5,306	24.8%
Employment	12,775	13,437	13,734	14,128	14,666	15,303	15,764	2,989	23.4%

Wayne County 2040 Forecast Summary

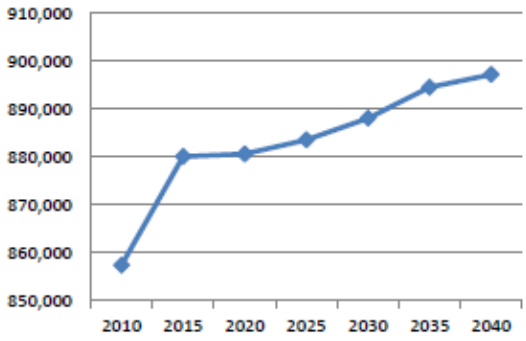
Population and Households

	2010	2020	2030	2040	Change 2010-40 Number	Change 2010-40 Percent
Population	1,820,584	1,700,779	1,664,635	1,656,931	-163,653	-9.0%
Households	702,749	683,308	689,894	690,639	-12,110	-1.7%
Household Size	2.56	2.46	2.38	2.37	-0.19	-7.4%

Population by Year



Employment by Year



Employment by Sector

Sector	2010	2040	Change 2010-40 Number	Change 2010-40 Percent
Natural Resources, Mining, & Construction	27,141	28,856	1,715	6.3%
Manufacturing	70,468	55,943	-14,525	-20.6%
Wholesale Trade, Transportation, Warehousing, & Utilities	78,410	83,931	5,521	7.0%
Retail Trade	75,365	60,225	-15,140	-20.1%
Knowledge-Based Services	156,639	164,195	7,556	4.8%
Services to Households & Firms	106,343	114,792	8,449	7.9%
Private Education and Health Care	147,796	193,286	45,490	30.8%
Leisure & Hospitality	84,968	88,393	3,425	4.0%
Government	110,274	107,534	-2,740	-2.5%
Total Employment	**857,410**	**897,152**	**39,751**	**4.6%**

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2040 Forecast by Community for Wayne County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Allen Park									
Population	28,210	28,086	27,642	27,660	27,308	26,844	26,246	-1,964	-7.0%
Households	11,580	11,598	11,649	11,670	11,616	11,442	11,288	-292	-2.5%
Employment	13,749	14,274	14,542	14,697	14,818	14,991	15,232	1,483	10.8%
Belleville									
Population	3,991	3,976	3,841	3,815	3,813	3,760	3,743	-248	-6.2%
Households	1,755	1,737	1,712	1,709	1,717	1,683	1,644	-111	-6.3%
Employment	1,404	1,417	1,437	1,416	1,436	1,465	1,507	103	7.3%
Brownstown Twp.									
Population	30,627	30,960	31,274	31,304	31,945	32,092	32,124	1,497	4.9%
Households	11,342	12,042	12,643	13,028	13,368	13,475	13,544	2,202	19.4%
Employment	6,913	7,227	7,249	7,529	7,641	7,794	7,906	993	14.4%
Canton Twp.									
Population	90,173	94,784	93,577	92,720	91,916	91,713	91,820	1,647	1.8%
Households	32,771	35,325	35,645	35,710	35,954	36,027	36,099	3,328	10.2%
Employment	20,721	21,434	21,476	21,937	22,187	22,543	22,737	2,016	9.7%
Dearborn									
Population	98,153	97,860	96,861	96,190	96,713	96,147	95,436	-2,717	-2.8%
Households	34,342	34,269	34,214	34,176	33,966	33,672	33,165	-1,177	-3.4%
Employment	102,327	105,326	106,703	106,916	107,898	108,607	108,456	6,129	6.0%
Dearborn Heights									
Population	57,774	55,787	55,879	55,796	55,758	55,314	54,661	-3,113	-5.4%
Households	22,266	22,324	22,521	22,333	22,298	22,045	21,622	-644	-2.9%
Employment	10,733	10,751	11,074	11,165	11,312	11,543	11,522	789	7.4%
Detroit									
Population	713,777	648,300	624,673	612,345	609,647	613,623	614,969	-98,808	-13.8%
Households	269,445	248,173	241,036	241,165	247,542	252,962	255,638	-13,807	-5.1%
Employment	347,545	357,247	353,242	352,394	352,670	354,075	354,792	7,247	2.1%
Ecorse									
Population	9,512	8,420	8,256	8,042	7,829	7,657	7,543	-1,969	-20.7%
Households	3,646	3,339	3,364	3,291	3,180	3,117	3,075	-571	-15.7%
Employment	4,064	4,164	4,136	4,139	4,096	3,955	3,797	-267	-6.6%

2040 Forecast by Community for Wayne County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Flat Rock									
Population	9,878	9,997	10,012	10,029	10,048	9,901	9,702	-176	-1.8%
Households	3,754	3,928	4,069	4,130	4,143	4,116	4,076	322	8.6%
Employment	3,087	3,186	3,136	3,090	3,076	3,062	3,035	-52	-1.7%
Garden City									
Population	27,692	25,709	25,138	24,854	24,669	25,014	25,010	-2,682	-9.7%
Households	10,894	10,828	10,831	10,887	10,857	10,781	10,717	-177	-1.6%
Employment	6,850	6,893	7,010	7,150	7,172	7,358	7,516	666	9.7%
Gibraltar									
Population	4,656	4,977	4,853	5,030	5,008	4,950	4,831	175	3.8%
Households	1,946	2,131	2,134	2,184	2,188	2,125	2,120	174	8.9%
Employment	576	600	608	628	620	643	628	52	9.0%
Grosse Ile Twp.									
Population	10,371	10,284	10,163	10,012	9,850	9,668	9,483	-888	-8.6%
Households	4,143	4,196	4,199	4,173	4,173	4,099	4,035	-108	-2.6%
Employment	1,420	1,431	1,419	1,443	1,428	1,525	1,503	83	5.8%
Grosse Pointe									
Population	5,421	5,505	5,443	5,464	5,480	5,451	5,456	35	0.6%
Households	2,236	2,319	2,309	2,311	2,349	2,320	2,266	30	1.3%
Employment	3,948	3,937	3,986	4,052	4,055	4,128	4,196	248	6.3%
Grosse Pointe Farms									
Population	9,479	9,521	9,381	9,441	9,408	9,246	9,194	-285	-3.0%
Households	3,718	3,784	3,789	3,830	3,819	3,753	3,709	-9	-0.2%
Employment	3,256	3,325	3,456	3,381	3,350	3,441	3,435	179	5.5%
Grosse Pointe Park									
Population	11,555	10,998	10,870	10,845	10,819	10,878	10,954	-601	-5.2%
Households	4,516	4,506	4,568	4,573	4,544	4,454	4,392	-124	-2.7%
Employment	1,772	1,806	1,803	1,817	1,860	1,822	1,819	47	2.7%
Grosse Pointe Shores (Wayne)									
Population	2,929	3,049	2,896	2,798	2,741	2,640	2,537	-392	-13.4%
Households	1,162	1,267	1,261	1,263	1,275	1,262	1,254	92	7.9%
Employment	445	453	451	418	417	423	439	-6	-1.3%

2040 Forecast by Community for Wayne County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Grosse Pointe Woods									
Population	16,135	15,965	15,357	14,889	14,780	14,336	14,127	-2,008	-12.4%
Households	6,416	6,592	6,592	6,536	6,559	6,460	6,487	71	1.1%
Employment	5,337	5,415	5,417	5,486	5,709	5,802	5,961	624	11.7%
Hamtramck									
Population	22,423	22,254	21,665	21,243	20,432	19,750	18,443	-3,980	-17.7%
Households	7,063	7,133	7,115	7,092	7,047	6,909	6,821	-242	-3.4%
Employment	3,083	3,083	3,107	3,153	3,149	3,198	3,306	223	7.2%
Harper Woods									
Population	14,236	13,868	13,513	13,045	13,038	13,026	13,044	-1,192	-8.4%
Households	5,814	5,746	5,681	5,628	5,628	5,574	5,512	-302	-5.2%
Employment	3,842	3,881	3,929	3,993	4,040	4,155	4,086	244	6.4%
Highland Park									
Population	11,776	9,698	9,105	8,816	8,650	8,503	7,998	-3,778	-32.1%
Households	4,645	4,317	4,013	4,041	3,933	3,771	3,602	-1,043	-22.5%
Employment	5,696	5,711	5,792	5,946	5,899	5,855	5,742	46	0.8%
Huron Twp.									
Population	15,879	15,936	15,381	14,886	14,758	14,878	14,884	-995	-6.3%
Households	5,781	6,030	6,072	6,081	6,121	6,090	6,042	261	4.5%
Employment	2,571	2,584	2,593	2,650	2,679	2,695	2,775	204	7.9%
Inkster									
Population	25,369	23,806	22,673	22,018	21,596	21,450	20,612	-4,757	-18.8%
Households	9,821	9,644	9,599	9,589	9,536	9,397	9,139	-682	-6.9%
Employment	3,596	3,621	3,623	3,695	3,728	3,752	3,765	169	4.7%
Lincoln Park									
Population	38,144	36,422	35,367	34,813	34,408	34,180	34,020	-4,124	-10.8%
Households	14,924	14,861	14,832	14,836	14,743	14,573	14,463	-461	-3.1%
Employment	6,438	6,568	6,536	6,532	6,564	6,647	6,645	207	3.2%
Livonia									
Population	96,942	96,589	95,234	94,006	92,816	92,643	92,353	-4,589	-4.7%
Households	38,714	39,088	39,252	39,446	39,223	38,952	38,703	-11	0.0%
Employment	91,102	93,958	94,817	95,606	96,041	96,669	96,571	5,469	6.0%

2040 Forecast by Community for Wayne County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Melvindale									
Population	10,715	10,579	10,445	10,548	10,575	10,412	10,317	-398	-3.7%
Households	4,420	4,470	4,494	4,531	4,488	4,396	4,349	-71	-1.6%
Employment	2,584	2,618	2,596	2,622	2,657	2,618	2,612	28	1.1%
Northville (Wayne)									
Population	2,739	2,570	2,518	2,446	2,357	2,332	2,360	-379	-13.8%
Households	1,275	1,238	1,245	1,233	1,205	1,193	1,179	-96	-7.5%
Employment	2,464	2,485	2,483	2,503	2,552	2,638	2,691	227	9.2%
Northville Twp.									
Population	28,497	28,874	28,606	28,653	28,596	28,368	28,204	-293	-1.0%
Households	11,520	12,233	12,268	12,273	12,280	12,212	12,102	582	5.1%
Employment	5,529	5,651	5,732	5,789	5,876	6,009	6,191	662	12.0%
Plymouth									
Population	9,132	8,940	8,837	8,718	8,594	8,520	8,369	-763	-8.4%
Households	4,314	4,432	4,438	4,469	4,465	4,412	4,345	31	0.7%
Employment	8,396	8,661	8,790	9,011	9,042	9,062	9,142	746	8.9%
Plymouth Twp.									
Population	27,524	27,684	27,744	28,075	28,186	28,081	28,170	646	2.3%
Households	11,203	11,432	11,578	11,585	11,548	11,438	11,400	197	1.8%
Employment	20,980	21,713	22,155	22,028	21,826	22,001	22,086	1,106	5.3%
Redford Twp.									
Population	48,362	46,800	45,639	44,386	43,779	43,418	42,583	-5,779	-11.9%
Households	19,148	19,179	19,187	19,131	18,956	18,849	18,647	-501	-2.6%
Employment	11,053	11,098	11,314	11,437	11,602	11,652	11,526	473	4.3%
River Rouge									
Population	7,903	6,830	6,443	6,283	6,189	5,990	5,807	-2,096	-26.5%
Households	2,897	2,657	2,588	2,577	2,523	2,444	2,364	-533	-18.4%
Employment	826	791	771	739	723	713	697	-129	-15.6%
Riverview									
Population	12,486	12,155	11,836	11,335	11,380	11,190	11,019	-1,467	-11.7%
Households	5,163	5,049	5,011	4,990	4,931	4,878	4,794	-369	-7.1%
Employment	4,534	4,551	4,534	4,631	4,746	4,935	4,927	393	8.7%

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2040 Forecast by Community for Wayne County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Rockwood									
Population	3,289	3,375	3,338	3,272	3,208	3,179	3,246	-43	-1.3%
Households	1,295	1,371	1,397	1,406	1,416	1,403	1,404	109	8.4%
Employment	744	758	766	739	780	746	736	-8	-1.1%
Romulus									
Population	23,989	22,465	22,408	22,236	22,280	22,455	22,685	-1,304	-5.4%
Households	8,975	8,910	9,261	9,391	9,511	9,583	9,738	763	8.5%
Employment	36,326	37,396	37,380	37,783	38,016	38,616	39,268	2,942	8.1%
Southgate									
Population	30,047	29,642	29,125	28,522	28,571	28,581	28,768	-1,279	-4.3%
Households	13,062	13,188	13,165	13,121	13,172	12,988	12,932	-130	-1.0%
Employment	12,155	12,182	12,327	12,491	12,733	13,070	13,237	1,082	8.9%
Sumpter Twp.									
Population	9,549	10,360	10,796	10,697	10,794	10,749	10,723	1,174	12.3%
Households	3,513	3,951	4,296	4,335	4,424	4,426	4,441	928	26.4%
Employment	605	626	649	654	676	667	638	33	5.5%
Taylor									
Population	63,131	59,985	57,980	56,678	56,312	56,015	55,703	-7,428	-11.8%
Households	24,370	24,449	24,776	24,872	24,823	24,581	24,434	64	0.3%
Employment	29,316	29,767	29,682	30,113	30,614	30,809	30,908	1,592	5.4%
Trenton									
Population	18,853	18,922	18,685	18,645	18,713	18,740	18,647	-206	-1.1%
Households	7,988	8,204	8,205	8,165	8,189	8,135	8,069	81	1.0%
Employment	7,408	7,485	7,585	7,579	7,804	7,831	7,918	510	6.9%
Van Buren Twp.									
Population	28,821	31,202	31,195	31,046	30,789	30,722	30,265	1,444	5.0%
Households	11,821	12,571	12,803	12,970	13,057	12,913	12,743	922	7.8%
Employment	11,789	12,791	12,592	12,508	12,633	12,670	12,753	964	8.2%
Wayne									
Population	17,593	17,213	16,948	16,688	16,578	16,525	16,250	-1,343	-7.6%
Households	7,055	7,104	7,129	7,172	7,171	7,107	7,025	-30	-0.4%
Employment	13,329	13,769	13,955	13,655	13,611	13,509	13,384	55	0.4%

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2040 Forecast by Community for Wayne County

	2010	2015	2020	2025	2030	2035	2040	Change 2010-40 Number	Change 2010-40 Percent
Westland									
Population	84,094	84,058	81,967	80,928	79,024	77,313	78,602	-5,492	-6.5%
Households	35,886	36,188	36,271	36,087	35,856	35,630	35,482	-404	-1.1%
Employment	22,083	22,450	22,625	22,889	23,243	23,715	24,075	1,992	9.0%
Woodhaven									
Population	12,875	13,003	13,026	12,839	12,400	12,549	12,476	-399	-3.1%
Households	5,159	5,326	5,288	5,299	5,291	5,307	5,217	58	1.1%
Employment	6,508	6,398	6,391	6,419	6,309	6,251	6,191	-317	-4.9%
Wyandotte									
Population	25,883	24,851	24,189	23,291	22,880	22,787	23,547	-2,336	-9.0%
Households	10,991	10,871	10,808	10,743	10,809	10,657	10,561	-430	-3.9%
Employment	10,300	10,597	10,715	10,702	10,753	10,846	10,804	504	4.9%

Notes and Definitions

1) All data is source SEMCOG 2040 Forecast, with the exception of 2010 Population and Household numbers, which are from the 2010 Census.

2) Job numbers are by place-of-work. They include wage and salary jobs as well as self-employed, Farm and Military jobs.

3) At the sub-regional level, SEMCOG blocked the employment numbers, denoted by the letter C, for communities that did not meet minimal publishing conditions in order to keep local establishments confidential. These conditions follow the rule, set up by Michigan law and the U.S. Bureau of Labor Statistics, that no numbers may be published if a cell contains: 1) fewer than three firms, or 2) a firm with 80 percent or more of that cell's employment.

Employment Sector Definitions

SEMCOG created nine industrial sectors for which employment can be classified. The industrial sectors are built from the North American Industrial Classification System (NAICS) and are grouped by similar economic and land use activities. The first eight sectors consist of jobs that fall under private ownership, while the last sector (Government) includes all jobs that fall under governmental ownership. Each sector is described in more detail:

1) Natural Resources, Mining, & Construction – This sector comprises activities such as agricultural production and support activities; mining natural resources; and construction of buildings and infrastructure. This sector is built upon NAICS Sectors: 11, 21, and 23.

2) Manufacturing – Covers all manufacturing activities including the production of durable and nondurable goods. This sector is built upon NAICS Sectors 31-33.

3) Wholesale Trade, Transportation, Warehousing, & Utilities – This sector includes the wholesaling of merchandise; the transportation of people and goods; storage; and the provision of utility services. This sector is built upon NAICS sectors: 22, 42, 48, and 49.

4) Retail Trade – Covers all retail activity, where goods are sold to the general public. This sector is built upon NAICS Sectors 44 and 45.

5) Knowledge-based Services – Built upon the following NAICS sectors: Information; Finance and Insurance; Real Estate, Rental, and Leasing; Professional, Scientific, and Technical Services; and Management of Companies and Enterprises. Most of these jobs

are for employers engaged in export-oriented services and require a college degree at minimum. The codes for the NAICS Sectors are: 51, 52, 53, 54, and 55.

6) Services to Households & Firms – This sector comprises employers who provide support services to firms and general services to households. It is built upon two NAICS sectors: Administrative, Support, and Waste Management and Remediation Services; and Other Services (except Public Administration). The codes for the NAICS sectors are 56 and 81.

7) Private Education & Healthcare – Comprises employers who provide private education for all age groups (K-12 and post secondary), as well as, private healthcare, including hospitals, medical centers, and nursing homes. This sector is built upon NAICS codes 61 and 62.

8) Leisure & Hospitality – Includes all employers who provide arts, entertainment and recreational services. Also includes employers who provide lodging and eating and drinking services. This sector is built upon NAICS codes 71 and 72.

9) Government – Consists of all government-provided services at all levels (federal, state, and local). This sector includes services like: public administration, public education (K-12 and post secondary), and public health. There are no NAICS codes associated with this sector.

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At the end of FY 2003, the MDNR had 22 active State Nonmetallic Mineral Leases with nearly 1,100 ha under lease. Twenty-two nominations for sand-and-gravel leases were received in FY 2003 primarily from a number of the State's County Road Commissions to replace previous permits. All but one of the sealed-bid sand and gravel leases that were to be issued in FY 2002 and FY 2003 were never completed by the lessee. A few of these were leased to County Road Commissions later in FY 2003. One older limestone lease, a royalty interest, expired during FY 2003. Thirteen direct leases, at a fixed agreed-upon rate, were issued during FY 2003. Twelve of these leases were issued to County Road Commissions as part of the conversion from permits to leases. Sixteen additional leases were in process and were expected to be issued in FY 2004. The total income from Nonmetallic Mineral Lease activities on State lands was nearly $992,000. The income from Forest Management Division Nonmetallic Mineral Permit activities on State lands was about $222,000. The total Nonmetallic Minerals royalty income was $770,000.

Most of the rentals and royalties received from the State of Michigan's Metallic and Nonmetallic Mineral Leases was used to purchase the property involved. Property that was tax reverted or purchased with Michigan Natural Resources Trust Fund (MNRTF) dollars, which accounts for the bulk of State-owned lands, receives most of the income. State and local governmental agencies may apply to the MNRTF for grants to purchase and develop property for public recreation purposes.

The FMFM continued to update the Abandoned Underground Mine Inventory and identified State-owned mine sites that required repair for public safety. A grant request for additional funds for safety repair was pending.

Mining Education and Museums

Michigan Technological University (MTU) (originally Michigan College of Mines) in Houghton, MI, began preparation to lead a dozen industrial partners, including CCI, in developing a Total Ore Processing Integration and Management System. The system allows mine and mill workers to respond quickly to changes in the processing stream. It was designed to optimize processing by 10%. The U.S. Department of Energy was to be part of the project and was to contribute more than $620,000 to the proposed $2.6 million, 3-year project.

Owing to a 10% reduction in State funding, MTU explored ways to reduce costs. One planned reduction was the elimination of the mining program that had 20 undergraduate students and 4 faculty members. The mining program had earlier been combined with geological programs into the Department of Geological and Mining Engineering and Sciences. As of June, the MTU Board of Control had not decided the fate of the mining program. However, new students were not being accepted into the program (Skillings Mining Review, 2003b).

The Marquette Range Iron Mining Heritage Theme Park reopened in spring 2003 in Ishpeming, Michigan. It is beside the Cliffs Shaft Mine headframe and buildings and includes mining, mineral, and historical displays.

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