

Creating Success with Our Transportation Assets

2014-2017 Transportation Improvement
Program

June 2013

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

2014-2017 Transportation Improvement Program

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Abstract

Creating Success with Our Transportation Assets: 2014-2017 Transportation Improvement Program (TIP) for Southeast Michigan describes how over \$3.8 billion in revenues will be invested to support our transportation system. 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 2014-2017 TIP can be viewed online at www.semco.org.

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SEMCOG
Southeast Michigan Council of Governments
Information Center
1001 Woodward Avenue, Suite 1400
Detroit, MI 48226-1904
313-961-4266 • fax 313-961-4869
www.semco.org • infocenter@semco.org

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Introduction

The FY 2014-2017 Transportation Improvement Program for Southeast Michigan, known as the TIP, contains a list of capital and operational improvements to the transportation system in southeast Michigan. Through the TIP, SEMCOG, the Southeast Michigan Council of Governments, takes a fresh look at how the region is implementing the 2040 Regional Transportation Plan. The TIP is a four-year schedule of projects that are the highest priorities for transportation agencies and local governments in the region. The FY 2014-2017 TIP contains over 500 projects representing \$3.8 billion of investment in capital improvements and transit operating activities. Projects must be shown in the TIP in order to receive federal funds.

SEMCOG is responsible for developing the TIP as the established Metropolitan Planning Organization (MPO) for Southeast Michigan. The region consists of Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties. Through the TIP, the region develops its priorities and submits them to the state and federal governments. In addition to providing the project list, this document describes the process taken to assess the program for its compliance with federal and state mandates. These assessments include an analysis demonstrating how well the TIP achieves the outcomes of *Creating Success with Our Transportation Assets*, Southeast Michigan's 2040 Regional Transportation Plan (RTP).

The TIP is developed through a cooperative process involving all stakeholders in the region. These stakeholders include the Michigan Department of Transportation (MDOT), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Michigan Department of Natural Resources and Environment (MDNRE), United States Environmental Protection Agency (EPA), county road agencies, cities, villages, and transit agencies. The public is given an opportunity to both identify transportation issues to be addressed and to comment on the projects in the TIP prior to approval. SEMCOG serves as the agency staffing this process and ensures that both local elected officials and the general public have a voice in project selection.

The TIP implements the policies and projects included in 2040 RTP. The 2040 RTP consists of four major components: an inventory of the current state of transportation in Southeast Michigan; outcomes and performance measures; a list of projects; and an assessment of how well these projects relate to the outcomes. Projects submitted for the TIP are first reviewed against the 2040 RTP project list, and the outcomes and performance measures. All projects that widen a roadway for at least a full travel lane and at least one-half mile in length must be specifically listed in the 2040 RTP. This is done to ensure that both the TIP and the plan are in conformance with the Clean Air Act.

Outcomes and performance measures guide the 2040 RTP. Recognizing that regional issues require regional input, SEMCOG works with state and local officials, special interest groups, and the public to establish transportation goals and objectives.

Much like the 2040 RTP, projects included in the TIP are analyzed in various ways and made available for public comment. These steps ensure the TIP is compliant with all federal and state laws and regulations and that the public has an opportunity to comment on the projects. These analyses ensure the projects selected for programming have reasonably available financial resources, conform to Clean Air Act requirements, and do not negatively impact low-income and minority populations.

Project Selection and Approval Process

Development of project priorities with SEMCOG conducting regional analysis on the existing transportation system by identifying and prioritizing transportation deficiencies. This information is then transmitted to county federal aid committees and transportation study committees along with an estimate of funds reasonably assumed to be available over the four years of the TIP. These committees meet periodically throughout the year to assess available federal aid funds and recommend and manage projects subsequently awarded funding. Project recommended for funding by these committees is the initial critical step in beginning TIP development. It is at this level that transportation system needs are most apparent. The Michigan Department of Transportation (MDOT) is responsible for developing projects for improvements to the state trunkline system in the region. As with county committees, MDOT conducts a comprehensive review of the needs on the trunkline system and sets priorities for addressing their needs. These priorities, however, are set at the state level.

Federal aid committees (FAC) exist in each of the seven counties (Livingston, Macomb, Monroe, Oakland, and Wayne) and the City of Detroit. Transportation Study Committees exist in St. Clair and Washtenaw Counties. The membership of these groups primarily includes elected officials and executive staff from county and local government.

The five major transit systems develop projects for capital improvements and operations. These agencies include the Ann Arbor Transportation Authority, Blue Water Area Transportation Commission, Detroit Department of Transportation, Lake Erie Transportation Commission, Livingston Essential Transportation Services, and Suburban Mobility Authority for Regional Transportation. Projects are submitted directly by these agencies or through local FACs.

SEMCOG oversees the project selection and submission procedures through regionally approved policies in addition to federal and state regulations. Once recommended at the county FAC or study committee level, these projects are submitted to SEMCOG and subjected to a rigorous committee and technical review. Three committees review the TIP prior to adoption: the TIP Development Committee (TIPDC), SEMCOG Transportation Advisory Council (TAC), and SEMCOG Executive Committee. TIPDC is the first to review the draft list and supporting documentation. The committee meets three times each year to review and make recommendations to TAC on the draft TIP. TAC conducts its review and makes a recommendation to the Executive Committee.

Creating Success with Our Transportation Assets

The 2014-2017 TIP is designed to reflect SEMCOG's adopted outcomes and performance measures of the 2040 RTP. 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 collection of data and analysis to support the projects, or actions, contained within the TIP was driven by the adopted measures in SEMCOG's Creating Success program (Figure 1).

Figure 1
 Creating Success in Southeast Michigan Outcomes and Performance Measures

What We Need to Achieve: Outcomes

	Economic Prosperity	Desirable Communities	Fiscally Sustainable Public Services	Reliable, Quality Infrastructure	Healthy, Attractive Environmental Assets	Access to Services, Jobs, Markets, & Amenities
We Manage What We Measure: Performance Measures	Percent of population age 25 and over with a bachelor's degree or above	Percent of 4 th and 8 th 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.)

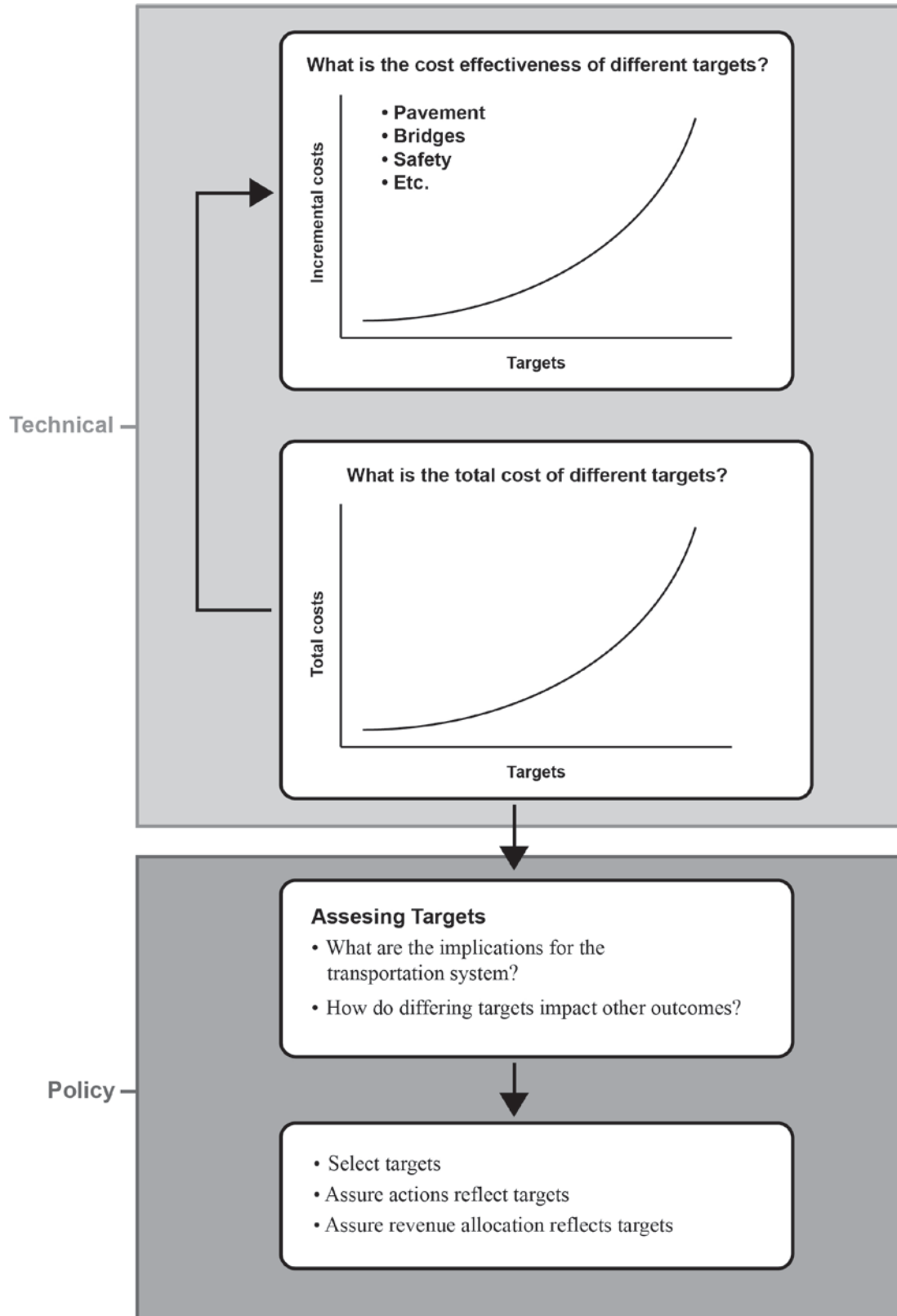
Strategic Investment that Encompasses all Outcomes

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.).

It's expected that in the future, increasing emphasis would be placed on setting targets for performance measures to guide investment and distribution of transportation funding. SEMCOG continues to recognize 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 2.

Figure 2
Strategic Investment That Encompasses All Outcomes



Data Driven Decisions

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, using pavement data for asset management, and for facilitating collaboration on managing operations.

In preparation for the Transportation Improvement Program, SEMCOG, 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.

SEMCOG's 2040 Regional Transportation Plan details 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 project 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.

Call for Projects

In October 2012, SEMCOG issued the call for projects for the 2040 Regional Transportation Plan (RTP) and the FY 2014-2017 Transportation Improvement Program. The call for projects was based on all of the following:

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

In the call for projects, SEMCOG recommended continued emphasis on care of the current system (priorities initiated in the *Direction2035* Plan). This included:

- road and bridge condition;
- household access to jobs, services, and amenities;
- safety;
- transit ridership; and
- maximizing use of transportation infrastructure already in place (utilization rate).

Federal-Aid Committees were asked to base their projects recommendations on how well they aligned with these above measures.

Finally, SEMCOG noted that future calls for projects will place an increased emphasis on SEMCOG's *Creating Success* and MAP-21. Specifically, setting targets for adopted measures and using them to guide investment and distribution of transportation revenues (see Chapter 2).

Recognizing priorities vary in different parts of the region, SEMCOG developed and made available a county-specific tool for agencies to use in prioritizing projects and stay within their assigned fiscal constraints as is required by Federal law. SEMCOG offered assistance in applying the tool.

SEMCOG also provided a tool for helping agencies establish pavement management strategies with a similar offer of technical assistance.

Summary of Projects and Investment in the Region's Transportation System
Federal law requires that SEMCOG maintain two project lists, both of which must be fiscally constrained. One represents the list of projects programmed for funding over the next four years. It is referred to as the 2014-2017 Transportation Improvement Program (TIP).

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.

Table 1 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 1
Summary of Investment in Southeast Michigan’s Transportation System, 2014-2017

Funding Category	Programmed in the 2014-2017 TIP (in millions)	Uses	Source of Funding
Operation & Maintenance of Federal-Aid Roads	NA	Operations and minor capital	State
Operation & Maintenance of Other Roads	NA	Operations and minor capital	State
Federal Transit Funds	\$287	Capital ²	Federal
State Transit Funds	\$466	Capital and Operating	State
Local Transit Funds	\$493	Capital and Operating	Local
MDOT Capital – repair and improvement ³	\$990	Capital	Federal and State
Local Road Agencies – repair and improvement ³	\$866	Capital	Federal and State
MDOT Capacity Improvements	\$594 ⁴	Capital	Federal, State, Canada and Private ⁵
Local Road Capacity Improvements	\$106	Capital	Federal and State
Total	\$3,802		

¹Federal-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.

²Some preventative maintenance costs are also allowed.

³Includes reconstruction, rehabilitation, safety, bridge, and Congestion Mitigation and Air Quality (CMAQ) projects

⁴Includes work associated with the Blue Water Bridge Plaza and access road improvements for the NITC

⁵Canadian and private funds are associated with the New International Bridge Crossing

The map below (Figure 3) depicts the projects in the Transportation Improvement Program (Note: Not all of the projects are represented on this map). There are numerous projects of various types in each of the region’s seven counties. View the complete 2014-2017 TIP [list of projects](#) via this link.

Figure 3
 Mapped Projects, 2014-2017 Transportation Improvement Program

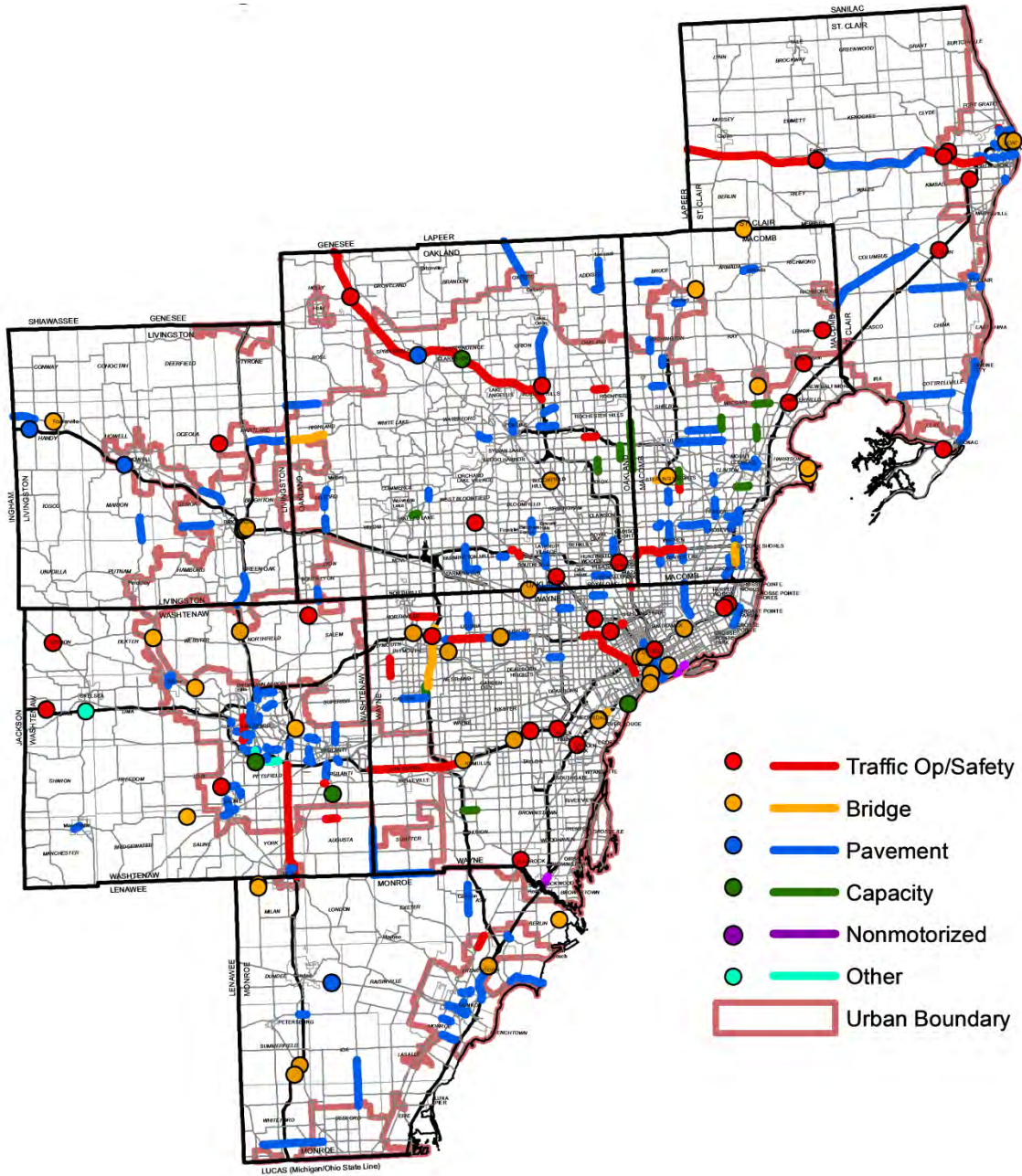
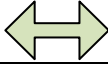




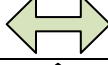





Table 2 summarizes key needs identified in this plan by category and the expected change in performance that will result. Consistent with forecasts in SEMCOG’s recent transportation plans, performance improvements continue to be hampered by inadequate funding.

Table 2
Expected Changes in Performance at Current Funding Levels

Component	Key Needs	Expected Change in Performance
Transit Capital	<ul style="list-style-type: none"> Dedicated/ Adequate Source of Revenue 	
Transit Operating	<ul style="list-style-type: none"> Dedicated/ Adequate Source of Revenue Service Expansion: frequency and coverage 	
Pavement	<ul style="list-style-type: none"> Reverse trend of deteriorating condition and increased taxpayer costs 	
Bridges	<ul style="list-style-type: none"> Sustain level of investment that prevents cost escalation 	
Safety	<ul style="list-style-type: none"> Continue steady improvement 	
Congestion/Capacity	<ul style="list-style-type: none"> Minimize need for expansion/maximize use of existing system 	
Major Improvement Projects	<ul style="list-style-type: none"> Move forward with the projects persistently identified as high priority 	
Road Operations	<ul style="list-style-type: none"> Increase emphasis as a cost effective means of addressing multiple system needs 	
Nonmotorized	<ul style="list-style-type: none"> Increase emphasis on expanding as a viable transportation choice 	

In summary, available funding for the 2014-2017 Transportation Improvement Program is properly focused on maintaining the existing system. However, insufficient funds impede our ability to develop and improve the transportation system needed to advance our economic prosperity.

Financial Plan

The FY 2014- 2017 Transportation Improvement Program (2014-2017 TIP) is the document implementing the first four years of the 2040 RTP. As such, it contains project lists that must be fiscally constrained, i.e., the cost of implemented projects cannot exceed the amount of funding reasonably expected to be available during the 2014-2017 TIP period.

Determining the amount of funding reasonably expected to be available is a complex process, relying on both data and past experience. The Michigan Transportation Planning Association (MTPA) developed statewide growth factors for the various funding sources used to finance our transportation system. These factors form the basis of SEMCOG's 2014-2017 TIP Financial and 2040 RTP Financial Plans.

The Transportation Improvement Program includes projects for highway capital projects, transit capital projects, and some transit operations projects. It does not include funding for highway operations and maintenance projects, although SEMCOG is required to estimate the cost to operate and maintain the federal-aid highway system in Southeast Michigan. The federal-aid highway system includes most of the major publicly-owned roads in the region. The current estimated cost of operating and maintaining the federal-aid highway system in Southeast Michigan from FY 2014-2017 is a little over \$1 billion. None of this funding is shown in the TIP.

As previously mentioned, the foundation of the financial forecast is the MTPA-determined set of factors for funding increase, which is applied to baseline-year estimates for each funding source. In addition to this core amount, there are a number of other funding sources which cannot be forecast. These include the carry-forward amounts of certain funds, much of local general-fund expenditures for transportation, future transportation millages, and others. These are added to the forecast once they are known in order to complete the transportation funding picture to the extent possible. Transportation agencies may program more or less of certain non-federal funding sources than expected for capital projects, and these adjustments must also be made.

The amount of funding expected to be available for the 2014-2017 TIP is as follows:

- Funds available to local road agencies for capital projects over the four-year program period total \$970.38 million in federal, state, and local funds. These funds will be used to repair, rebuild, and rehabilitate locally-owned roads and bridges on the federal-aid system, which is comprised of public streets and highways designated for federal funding. These tend to be the more important routes in terms of traffic volume and connectivity.
- The Michigan Department of Transportation (MDOT) is the agency responsible for maintaining the State Trunkline system. These are roads with "I," "M," or "US" designations. MDOT is projected to have about \$1.23 billion available between FY 2014 and FY 2017 to preserve the roads and bridges on the State Trunkline System in Southeast Michigan. All State Trunkline roads are on the federal-aid system.
- In addition to funding available for road and bridge preservation, MDOT also has funding set aside for major capacity projects in our region during the 2014-2017 TIP period, including the Blue Water Bridge Plaza in Port Huron, as well as the I-94 reconstruction and widening from I-96 to Conner, and the New International Trade Crossing (NITC) bridge project, both in Detroit. Together, these projects are projected to spend about \$592.46 million between FY 2014 and FY 2017. Altogether, MDOT is expected to have about \$1.8 billion available for all capital projects on the State Trunkline System in Southeast Michigan.

- Transit agencies are forecast to have approximately \$1.51 billion available during the 2014-2017 TIP period. This includes federal, state, and local funding. Local funding can include city or county general fund, millages, and farebox revenue.

The total amount expected to be available over the next four years therefore totals approximately \$4.3 billion. Not all of these funds will necessarily be programmed in the TIP (for example, a local road agency may decide to use more of its non-federal money on operations and maintenance of the highway system and less on highway capital projects). Thus, funding actually programmed in the TIP would decrease relative to available funding. However, this amount represents SEMCOG's best assumption regarding available funding for the region's transportation system at this time.

The complete financial plan is available in the Appendix.

Air Quality Conformity

The federal Clean Air Act requires that federally-funded highway and transit projects contained in Transportation Improvement Program be consistent with the air quality goals established in state air quality implementation plans (SIP). The process for demonstrating this consistency is called Air Quality Conformity. The purpose of conformity is to ensure that projects in the plan will not cause new air quality violations, worsen any existing violations, or delay timely attainment of the National Ambient Air Quality Standards (NAAQS).

The U.S. Environmental Protection Agency (EPA) has established NAAQS for six criteria pollutants: ozone, nitrogen dioxide, carbon monoxide (CO), lead, sulfur dioxide, and particulate matter (PM2.5 and PM10). EPA designates an area as either “attainment” or “nonattainment” for each of these pollutants, depending on whether local air monitoring data shows it is meeting or not meeting these standards. Areas that were initially designated as “nonattainment” for a particular standard, but later attain that standard are termed “maintenance” areas.

Pollutants Analyzed for Conformity in Southeast Michigan

Air Quality Conformity analyses are required for all areas currently designated as “nonattainment” or “maintenance” for ozone, CO, PM10 or PM2.5. Southeast Michigan is currently designated a maintenance area for CO and a nonattainment area for the annual and 24-hour PM2.5 standards. The region was formerly designated as a maintenance area for the 80 ppb ozone standard. However, due to significant reductions in levels of this pollutant in recent years, the region was recently designated as an “attainment” area for the new stricter 75 ppb standard. It should also be noted that, while still officially designated “nonattainment” for both of the PM2.5 standards, levels of the pollutant have also declined substantially. As a result, the region is now meeting both of these standards and is also in compliance with the tougher annual standard recently set by the EPA. Thus, it is expected that Southeast Michigan will soon be officially designated as an “attainment” area for this pollutant as well.

The current air quality designations for Southeast Michigan, as noted above, require that SEMCOG perform a conformity analysis for CO and PM2.5. While analysis of ozone is not currently required, SEMCOG is continuing to include this pollutant in its analysis for information purposes.

Conformity Analysis Process

To analyze conformity, emissions generated by all vehicles on Southeast Michigan’s roadway system are estimated using a complex set of computer models. The models estimate the expected change in these emissions due to the combination of:

- Anticipated growth in the region, and
- The implementation of regionally-significant transportation projects that either increase or decrease roadway capacity (e.g., building new roads, adding or reducing the number of traffic lanes on existing roads). The impact of major transit projects is also included.

Detailed documentation on this modeling process, including a list of all the projects included in the analysis, is contained in a separate SEMCOG document, *Ozone, Carbon Monoxide (CO), and Fine Particulate Matter (PM2.5) Conformity Analysis for SEMCOG’s 2040 Regional Transportation Plan and 2014-2017 Transportation Improvement Program*.

Results of Conformity Analysis

For ozone and CO, conformity is demonstrated when forecasted emissions for specific future years are less than or equal to the established emissions limits (budgets) set forth for those pollutants in Michigan’s (SIP). Results of the conformity analyses for ozone and CO are provided below. As ozone is not a directly-emitted pollutant, conformity is measured by analyzing its precursors – volatile organic compounds (VOC) and nitrogen oxides (NO_x).

The data show forecasted emissions of VOCs, NO_x, and CO are well below established mobile source emissions budgets in each analysis year. Thus, conformity is demonstrated.

Table 3
Results of Ozone Analysis*

Analysis Year	Emissions (tons per day)		Associated Daily VMT (in millions)
	VOC	NO _x	
Budget	106.0	274.0	-----
2015	67.0	141.9	134.4
2020	47.3	85.1	134.5
2025	42.5	66.8	135.8
2035	37.7	58.0	138.4
2040	37.8	57.6	139.2

*Covers Southeast Michigan’s former ozone “maintenance” area, which includes the entire seven-county SEMCOG region.

Table 4
Results of Carbon Monoxide Analysis*

Analysis Year	CO (tons per day)	Associated Daily VMT (in millions)
Budget	3,843	-----
2015	1,056	93.7
2025	873	94.2
2035	864	95.6
2040	866	96.0

*Encompasses Southeast Michigan’s CO “nonattainment” area, which includes Macomb, Oakland, and Wayne counties.

For PM_{2.5}, two separate analyses are performed: one for the annual standard and one for the 24-hour standard. As SIP budgets for Southeast Michigan have not yet been established, conformity is demonstrated using EPA’s interim emissions method. This involves comparing emissions from an EPA-specified base year to forecasted emissions in specific future years. To demonstrate conformity, PM_{2.5} and NO_x emissions in each of the future years must not exceed those in the base year. NO_x is included in the analysis because it is a precursor for PM_{2.5}.

For the 24-hour PM2.5 analysis, conformity is demonstrated when forecasted emissions are less than or equal to emissions levels in 2008. The analysis uses emissions for a typical winter day, as the highest PM2.5 concentrations typically occur during this season. Data in the following table show forecasted emissions in all future years are well below 2008 levels. Thus, conformity for the 24-hour standard is demonstrated.

Table 5
Results of 24-Hour PM2.5 Analysis

Analysis Year	Emissions (tons per day)		Associated Daily VMT (in millions)
	PM2.5	NOx	
2008	16.8	389	-----
2015	8.1	153	119.2
2025	5.0	75	120.4
2035	4.7	66	122.8
2040	4.7	66	123.5

*Encompasses Southeast Michigan’s PM2.5 “nonattainment” area, which includes the entire SEMCOG region

For the annual PM2.5 analysis, total annual emissions are calculated and conformity is demonstrated if those in all future years are less than or equal to levels in 2002. The following table shows the results of the annual PM2.5 conformity analysis. Forecasted emissions of both PM2.5 and NOx, in all analysis years, are significantly below levels experienced in 2002. Thus, conformity is demonstrated.

Table 6
Results of Annual PM2.5 Analysis

Analysis Year	Emissions (tons per year)		Associated Annual VMT (in millions)
	PM2.5	NOx	
2002	6,379	189,786	-----
2015	2,172	51,327	43,777
2025	1,188	24,677	44,239
2035	1,107	21,580	45,088
2040	1,106	21,500	45,473

*Encompasses Southeast Michigan’s PM2.5 “nonattainment” area, which includes the entire SEMCOG region

Public Participation

Engaging and seeking input from SEMCOG members, stakeholders, and the general public is an important element in creating the 2040 Regional Transportation Plan and the 2014-2017 TIP. This valuable input helps inform plan development, allows us to better meet regional needs and build on our assets, and presents opportunities for coordination and collaboration among those with a vested interest in the transportation system. As this suggests, public outreach helps ensure that our planning efforts are not done in isolation and that broader livability principles are embraced. Although our various transportation planning and programming activities are designed to have long-term beneficial effects on the community, these activities may also have an adverse impact on some individuals. Therefore, it is important that citizens know what is being planned and be given every opportunity to provide input and present their views.

Outreach Activities

SEMCOG has been conducting public engagement activities and continued to share information and receive input until the 2040 Regional Transportation Plan was adopted in June 2013. Following the activities outlined in [SEMCOG's Public Participation Plan](#) (2011), these efforts included, but are not limited to:

Regional Surveys

Two regional surveys were conducted to obtain public input on various transportation related issues.

- **Pulse of the Region:** The first survey was jointly sponsored by SEMCOG and the Metropolitan Affairs Coalition (MAC). These online “Pulse of the Region” surveys were available to all Southeast Michigan residents via SEMCOG’s and MAC’s Web sites.
 - Citizens were asked to voice their opinions on various aspects of the region’s transportation system. The survey was promoted in many places, including SEMCOG’s Facebook, Twitter, and LinkedIn social media pages. Although the responses do not represent a statistically derived sample, they provide an important perspective on the region’s transportation system, and enabled any interested individual to voice an opinion. “Pulse of the Region” survey results can be found [here](#).
- **Infrastructure Public Opinion Survey:** The second, more extensive survey was conducted by SEMCOG in late 2012. The purpose of the survey was to understand what the public thinks about Southeast Michigan’s roads, transit, and water and sewer systems. The survey sample was designed to provide statistically significant results for each of SEMCOG seven counties and the City of Detroit.
 - The findings from this survey are discussed in the *Infrastructure Survey – What the Public Thinks* section of this plan. These [findings](#) were heavily considered by SEMCOG and local elected officials as we explored transportation investment choices and established a regional investment direction.

Videos: The “inside story”

SEMCOG created a series of seven short videos throughout development of the 2040 RTP and 2014-2017 Transportation Improvement Program. Each video describes the “inside story” of a different component of the region’s transportation system. Videos were developed to discuss the region’s safety, freight, roads and bridges, public transit, walking and biking, congestion, and funding issues. After viewing each video, the public was asked to respond to several survey questions. The results were summarized instantaneously

and shown to the responder. View the [Inside Story videos and responses](#); please note that responses can only be seen after taking the survey.

Speakers Bureau

SEMCOG actively promoted a speakers bureau available to discuss various transportation issues with the public. These meetings provided valuable opportunities for the public to offer input to SEMCOG for the 2040 RTP and 2014-2017 TIP. SEMCOG appeared on various radio and television shows to discuss and ask for public input on various aspects of the 2040 Regional Transportation Plan and 2014-2017 TIP.

Public Meetings

At all SEMCOG meetings, events, and public outreach booths, informational tip cards, videos, and PowerPoint presentations were used, as appropriate. All SEMCOG meetings and events are open to the public and publicized via news releases, SEMCOG's bi-weekly e-newsletter (*Regional Update*), on SEMCOG's Web site, social media pages, and blogs. The schedule of meetings included:

- Three focus groups on Sustainability (September-October 2012)
- Transportation Advisory Council meetings (September 2012-May 2013)
- SEMCOG Executive Committee meetings (September 2012-May 2013)
- SEMCOG General Assembly meetings (November 2012, March 2013, June 2013)
- SEMCOG Task Force meetings (October 2012- May 2013)
- Presentations to organizations; this includes organizations whose membership may be traditionally underrepresented in the transportation decision-making process (October 2012-May 2013)
- Four public meetings (May 2013)

Other Public Meetings

The various county Federal-Aid Committees and Transportation Studies also encouraged public participation through their individual county processes. SEMCOG worked with state and local road and transit agencies to conduct local-level public outreach efforts prior to proposing projects for inclusion in the 2040 RTP. SEMCOG posted agency contact information and meeting dates online. Throughout the development of the 2040 RTP, various presentations and opportunity for public input and feedback was available during the SEMCOG Transportation Advisory Council, Executive Committee, and General Assembly meetings. Most presentations were posted on SEMCOG's Web site.

SEMCOG Web Site and Social Media

The public was encouraged to stay up-to-date on various 2040 evaluation activities by checking SEMCOG's Web site; materials were posted regularly. SEMCOG also used Facebook, Twitter, LinkedIn, and SEMCOG blogs to post information and ask for input from the public on the 2040 Regional Transportation Plan.

Agency Consultation

To ensure that the 2040 RTP is consistent with other planning areas that affect or are affected by the transportation system, SEMCOG consulted with various agencies dealing with public transit, human service transportation, development, planned growth, land use, land management, economic development, airport operations, freight movements, safety/security operations, natural resources, environmental protection, conservation, wildlife, and historic preservation.

SEMCOG engagement in plan development includes consultation with agencies affecting or affected by the transportation system; and coordination with federal, state, and local transportation partners responsible for other planning activities. SEMCOG sought and received input from these and other non-traditional partners throughout the course of developing the 2040 RTP and the 2014-2017 TIP. In Washtenaw and St. Clair Counties, the [Washtenaw Area Transportation Study](#) and [St. Clair County Transportation Study](#) (agencies responsible for comprehensive transportation planning at the county level) adopted individual county-wide transportation plans that will be included in 2040 Transportation Plan by reference.

Public Comment Period

The formal public comment period for the 2040 RTP began on May 9, 2013 and ended with General Assembly adoption on June 20, 2013. The public comment period and committee meeting dates were announced online, via a public notice and media release, and on social media.

A summary of all of the public comments is included in the Appendix.

Additional Materials

[Semscope](#) (Spring 2013) devoted to transportation funding.

[A Citizen's Guide to Transportation Planning in Southeast Michigan](#) (Video)

Environmental Justice

Transportation investments have both positive and negative impacts that may be localized in a particular community or portion of a community. Environmental justice requires that these impacts be distributed fairly among population groups, especially focusing on population groups that have been traditionally disadvantaged. SEMCOG, in its response to this important challenge, enhanced a process to assess the impacts of the transportation planning process, the 2040 RTP, and the 2014-2017 TIP on the target populations.

The target populations consist of minorities (African-American, Asian-American, Native American, and Hispanic), low-income households, senior citizens, and households without cars. Information about these populations can be found in the Appendix. SEMCOG identified three principles to ensure environmental justice considerations were properly integrated into the transportation planning process:

- Provide adequate public involvement of target populations in regional transportation decision making,
- Assess (i.e., travel time) whether there were disproportionately high and adverse impacts on the target populations resulting from federal programs, and
- Ensure that the target populations receive an equitable share of benefits of federal transportation investments.

Several quantitative measures were developed in order to assess the impacts of the plan. Although these measures cannot take into account every possible facet of environmental justice, SEMCOG believes they are good indicators as to whether significant environmental justice issues are present. When applied at the regional level, the measures indicated the 2040 RTP creates no environmental justice problems. It is important to keep in mind that this analysis was done at a regional, system-wide level. Additional refinement will be made as individual projects go through project development. The complete environmental justice analysis of the 2040 RTP and the 2014-2017 TIP is available in the separate Environmental Justice Technical Analysis in the Appendix.

Consistency with the Regional Intelligent Transportation Systems (ITS) Architecture

Most travelers are unconcerned about who owns and operates the various components of the transportation system. They expect it to work seamlessly and efficiently. The strength of an MPO is its ability to reach out to a vast array of stakeholders to enable communication and cooperation among them. In this regard, SEMCOG works with many different agencies interested in finding solutions for various transportation issues throughout the region. SEMCOG fosters system integration and agency cooperation concerning ITS technologies.

ITS refers to technologies that help operators to better monitor and manage the system, to respond to incidents more quickly, and to disseminate traffic-related information back to the public. Examples of ITS technologies include dynamic message signs, cameras that monitor traffic flow and incidents, and road sensors, which count and classify the vehicles on the highway system.

ITS enables collaboration, communication and cross-jurisdiction/agency system integration. ITS is a proven alternative solution to reduce congestion, increase traffic flow, enhance safety, and improve air quality.

FHWA developed the national ITS architecture to provide a unifying framework for ITS infrastructure deployment. SEMCOG houses and maintains the [regional ITS architecture](#), as a framework for implementing ITS projects across multiple jurisdictions and agencies, and a regional [ITS Deployment Plan](#), which provide an order/sequence for implementing the projects in the architecture. This Southeast Michigan Regional ITS Architecture identifies the organizations that provide ITS or those that have an interest in them. It defines the different operating systems, the functions they perform, what information they exchange, and how that information is exchanged. Identifying the different types of technologies and interconnections helps one understand the existing systems. It helps detect any gaps related to the information exchange, or any agencies that could collaborate. The architecture ensures that institutional agreements and technical integration for the implementation of ITS projects are in place. Its primary goal is to facilitate the efficient deployment and use of ITS equipment, networks, and management structures to create a safer and more efficient transportation system across jurisdictions. All ITS projects using federal funding must conform to the Regional ITS Architecture.

The 2014-2017 TIP is consistent with both the ITS Architecture and Deployment Plan. It includes a variety of ITS initiatives, including:

- advanced transit fare collection systems, communications, and surveillance;
- traffic signal retiming programs;
- freeway and arterial management systems;
- Freeway Courtesy Patrol; and
- continued operations and maintenance of existing ITS technologies.

2014-2017 Self Certification

For all Metropolitan Planning Areas, concurrent with the submittal of the entire proposed TIP to the FHWA and the FTA as part of the STIP approval, the state and the MPO shall certify at least every four years that the metropolitan transportation planning process is being carried out in accordance with all applicable requirements included under 23 U.S. Code, Code of Federal Regulations 450 section 334. (signed self certification document, see Appendix)

Appendix

Links to Plans and Other Information

Following are links to plans and other information discussed in the 2014-2017 Transportation Improvement Program report (organized by the chapter and section in which they appear):

Chapter 2: Project Selection and Approval Process

Call for Projects

- [2014-2017 TIP Project List](#)

Chapter 6: Regional Evaluation of Projects

Financial Plan

- [SEMCOG 2014-2017 TIP Financial Plan](#)

Chapter 4: Air Quality Conformity

- [Ozone, Carbon Monoxide \(CO\), and Fine Particulate Matter \(PM2.5\) Conformity Analysis for SEMCOG's 2040 Regional Transportation Plan and 2014-2017 Transportation Improvement Program](#)

Chapter 5: Public Participation

Outreach Activities

- [SEMCOG's Public Participation Plan](#) (2011)

Regional Surveys

- Pulse of the Region" survey results
http://smcg.informz.net/SMCG/archives/archive_2787687.html
- Infrastructure Survey – What the Public Thinks
<http://www.semco.org/Sustainability/Infrastructure.aspx>

Videos: The "inside story"

- [Inside Story videos and responses](#)

Agency Consultation

Responsible for individual long-range transportation plans:

- [Washtenaw Area Transportation Study](#) Long Range Transportation Plan
- [St. Clair County Transportation Study](#) Long Range Transportation Plan

Public Comment Period

- [Summary of Public Comments](#)

Additional Materials

- [Semscope](#) (Spring 2013) devoted to transportation funding.
- [A Citizen's Guide to Transportation Planning in Southeast Michigan](#) (Video)

Chapter 6: Environmental Justice

- [Environmental Justice Technical Analysis](#) – 2040 Regional Transportation Plan and 2014-2017 Transportation Improvement Program

Chapter 7: Consistency with the Regional Intelligent Transportation Systems (ITS) Architecture

- [Regional ITS Architecture](#)
- [ITS Deployment Plan](#)

Chapter 8: 2014-2017 Self Certification

- [Signed Self Certification Document](#)

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