Regional Asset Management Program Peer Review Summary

May 2014
Introduction & Background

This report documents the PSRC-led effort to better understand Metropolitan Planning Organization (MPO) involvement in asset management and provide background information to PSRC’s regional asset management program scoping project. Questionnaires were sent to four participating agencies and follow-up phone interviews were held with each agency to record details surrounding program development, implementation, stakeholder participation, and other unique elements. This effort was funded through a Federal Highway Administration (FHWA) Infrastructure Voluntary Evaluation Sustainability Tool (INVEST) grant and advances work in an area identified by PSRC’s INVEST evaluation as an opportunity to better incorporate sustainability principles.

The Puget Sound Regional Council (PSRC) serves as the MPO for the 4-county greater Seattle region. PSRC has also adopted VISION 2040, which lays out a regional strategy for accommodating projected growth and development in the region along with the multi county planning polices for the region. The long range Transportation 2040 is PSRC’s current long-range Regional Transportation Plan (RTP) which implements the policies adopted in VISION 2040. With the adoption of Transportation 2040 in May 2010, PSRC’s boards directed staff to enhance its approach to estimating State of Good Repair needs in the long-range transportation planning process with the goals of being data-driven and outcome oriented. PSRC took additional steps towards these goals during the development of the 2014 long range plan update with a new approach to estimating State of Good Repair needs based on local policies, costs, and approaches tied to specific regional performance outcomes. A full description of these refinements can be found in the draft Transportation 2040 Update Appendix S: State of Good Repair.

MAP-21 Requirements

In addition to an emphasis on a more robust analysis of future State of Good Repair needs in the regional transportation plan, MAP-21 made a number of changes to regional planning requirements that call for PSRC to continue to enhance its efforts. The performance-based planning approach for State of Good Repair is outlined in the federal legislation requires PSRC to more explicitly integrate these needs into the planning process with the purpose of achieving regional, state, and federal system performance goals. PSRC’s current approach to estimating state of good repair needs is inadequate to effectively and efficiently meet these new requirements. It is essential that PSRC enhance its current methods to better estimate the current and future state of good repair within the region to update the long range plan and meet federal requirements.

FHWA INVEST Grant

In late 2012, FHWA offered an opportunity to implement the revised INVEST 1.0 tool at state departments of transportation (DOTs), metropolitan planning organizations (MPOs), and local governments. Goals of this effort were to assess and improve sustainability outcomes using refined criteria, establish a broader collection of case studies and best practices, and to continue improving INVEST by soliciting comments for suggested refinements and enhancements. PSRC’s interest in using INVEST 1.0 was centered on reevaluating the updated long-range transportation plan using the revised criteria and implementing sustainability practices in areas where the previous evaluation highlighted opportunities for improvement. As part of the INVEST implementation program, FHWA provided resources for PSRC to strengthen sustainability practices in the planning areas of asset management and TDM to address opportunities for improvement highlighted in the previous INVEST evaluation.
Funding provided to PSRC through the INVEST program has proved critical in further developing the region’s approach to incorporating asset management in the long-range transportation planning process. The goal of this work was to scope a regional State of Good Repair program with a focus on pavement preservation that would support the spectrum of PSRC planning and programming efforts, meet new MAP-21 requirements, and add value at the local level. A key task in this effort was to perform a peer MPO review to explore how other regional agencies have integrated State of Good Repair into broader planning and programming efforts and how they are satisfying MAP-21 requirements. There is a diverse range of MPO asset management programs. These programs are largely grounded by unique state requirements or a commonly understood need for a regional perspective and direction. This report summarizes discussions and key findings associated with the regional asset management program peer review element of PSRC’s INVEST grant.

Goals and Peer Selection

The goal of this peer review was to provide PSRC with a better understanding of depth and scope of regional asset management programs currently being implemented across the country. Understanding unique program components, funding sources and regulatory environments is key to developing a “menu” of program options that could potentially be viable in the central Puget Sound region. To ensure PSRC worked with peer agencies with comparable variables a short list of criteria was developed. Appropriate agencies would:

- Have a similar mix of urban & rural areas, geographic size, and population/employment;
- Be similar type and number of stakeholder agencies, particularly cities and counties;
- Work within a similar institutional arrangement and have a comparable planning function (e.g., multicounty, multijurisdictional, and not directly responsible for maintenance and preservation activities); and
- Be diverse in the scope of their regional asset management program (to understand how different program elements function within a similar framework as PSRC’s).

One of our first key findings was that few MPOs are engaged in regional asset management planning and that there simply weren’t enough agencies fitting the criteria to perform a robust peer review. The Metropolitan Transportation Commission (MTC) assisted with identifying four MPOs that have implemented regional asset management programs of varying scope and complexity.

- Metropolitan Transportation Commission (MTC) – Greater San Francisco Bay Area
- Regional Transportation Commission (RTC) – Greater Reno, NV Area
- Grand Valley Metropolitan Council (GVMC) – Greater Grand Rapids, MI Area
- Southeastern Michigan Council of Governments (SEMCOG) – Greater Detroit, MI Area
Regional Asset Management Program Peer Review Summary
Puget Sound Regional Council

Key Findings

Peer agency representatives were asked to share their experiences, lessons learned, and recommendations for developing and implementing a regional, performance-based, asset management program. The section below summarizes key findings that emerged from the questionnaires and follow-up interviews. Additional detail related to each agency’s program can be found in the Summary of Discussions section below. Key findings for developing an effective asset management program are:

- **Establish stakeholder buy-in.** Clearly communicating the benefits and establishing the value proposition is a critical step in the process of developing a regional asset management program. In some cases this can be a state mandate, or a commonly understood benefit can be the motivating factor in establishing consensus to develop a regional program.

- **Develop a regional vision and establish State of Good Repair goals.** Regions must understand what the program would accomplish. A clear goal guides all subsequent work.

- **Start simple with the capacity to grow.** Building a State of Good Repair program from the ground up can be a daunting exercise given the breadth of public transportation assets. Each peer agency stressed the importance of starting with a focused program with the capacity to expand scope as efficiencies in core efforts are realized.

- **Comprehensive and consistent data collection is key foundation for any program.** The most critical component of each peer agency asset management program is the ongoing effort to collect condition data at regular intervals. Data serves a number of purposes ranging from current condition assessments to developing long-term pavement deterioration models for various roadway types. Data collection can be either centralized or performed by a variety of stakeholders, but the importance of having regular updates is clear.

- **Stable and secure funding is critical.** Maintaining a stable funding source is important to creating a sustainable long-term program and integrating with parallel planning processes. Of particular importance is consistent data collection.

- **There is no “one size fits all” approach to regional asset management.** Each MPO must work with stakeholders to develop a program that addresses the region’s specific goals and needs, and works within available resources. Participating MPOs have different approaches to program...
oversight, data collection, resource allocation, and program implementation. Two commonalities between all programs are (1) the ability to perform scenario analyses within the long-range transportation planning process and (2) a connection to regional funding.

- **Regional State of Good Repair programs tend to focus on pavement preservation.** Peer agencies put a considerable emphasis on pavement preservation relative to other asset types in regional planning efforts. Other asset types such as bridges and nonmotorized infrastructure are generally addressed, however data collection and analyses are primarily focused on roadways.

**Summary of Discussions**

In November 2013, PSRC distributed surveys to the four peer agencies. Upon receipt of the completed survey, follow-up phone interviews were scheduled to further discuss details of each program. Phone interviews lasted approximately one hour and included program managers at respective MPOs, lead PSRC staff, and Aakavs Consulting. A summary of each peer agency’s asset management program and discussion with PSRC is found below.

**Metropolitan Transportation Commission: Greater San Francisco Bay Area**

*Sui Tan, Pavement Management Program Manager*

**Transportation 2035: Change in Motion**

**MTC Regional Streets and Roads Program**

**Pavement Management Technical Assistance Program (P-TAP)**

In 1981, MTC — the transportation planning, financing and coordinating agency for the nine-county San Francisco Bay Area — conducted a study that estimated that spending for local roadway maintenance in the region fell short by $100 million a year, and that streets and roads had a deferred maintenance cost in the range of $300 million to $500 million. In response to this study, MTC started its Pavement Management System in six Bay Area communities as a pilot program in 1984. The full program got under way in 1986; it is one of the first in the country to be tailored specifically for cities and counties, rather than for state highways. MTC’s pavement preservation program revolves around the use of a common program (StreetSaver) by all 100 cities and nine counties in the region and is utilized in all aspects of the region’s transportation planning process. The program’s scope includes all 42,800 lane miles of arterials, collectors and residential streets, as well as bridges.

**Stakeholder Support.** Initial stakeholder support for developing a regional asset management program stemmed from a common understanding of the need for additional preservation resources. Since the effort began, MTC has been a champion for an asset management approach. Buy-in and consensus is maintained through the Local Streets and Roads Working Group. The Local Streets and Roads Working Group is comprised of public works directors and transportation managers, this group advocates for additional funding based on updated regional needs assessments through the regional pavement preservation program. The committee is also a sounding board for MTC staff as the program evolves, making cities and counties partners in the program’s success. The Local Streets and Roads Working Group efforts have paid dividends in terms of increasing resources and lowering costs, creating the value proposition for their involvement and the regional program in general.
Another component that generates significant support for the regional asset management program is the Pavement Management Technical Assistance Program (P-TAP). P-TAP provides jurisdictions with assistance and expertise in implementing and maintaining a pavement management system and in engineering design for pavement rehabilitation projects. Since 1999, MTC has programmed over $10.6 million in STP funds to about 520 P-TAP projects ranging from updating local pavement management system databases to enhancing the functionality of the system.

**Goals and Objectives.** MTC has adopted a “Fix It First” strategy for both long-range and short-range planning efforts. In the long-range plan this policy prioritizes maintaining the existing system prior to expansion. Specifically regarding pavement, the current goal is to maintain a pavement condition index of 66. More broadly, MTC has effectively tied pavement preservation into a variety of regional planning goals, making connections to focused growth and economic development.

**Data Collection and Analysis.** MTC and all its member agencies utilize the StreetSaver, a pavement management system originally developed for use in the Bay Area in 1987. Since implementing the regional program significant benefits have been realized by MTC due to cities and counties employing common approaches to data collection and analysis, and the regional pavement condition database. Pavement condition updates to the database are performed biennially for arterials and collectors, and every five years for residential streets. P-TAP funding is widely used for this purpose. StreetSaver is capable performing a variety of scenario analyses based on investment levels, meeting pavement condition targets, and effects of policy decisions. Figure 2 illustrates the cumulative amount of deferred maintenance, resulting systemwide PCI, and annual investment needed for three different approaches to funding pavement preservation. These analyses provide information used in the evaluation of tradeoffs in the long-range planning process, the identification of funding needs (see Figure 3), and to support informed decision-making in other areas. MTC utilizes StreetSaver for data storage, long-range planning scenario analyses, needs identification, and funding decisions.

*Figure 2: Example Scenario Analysis Using StreetSaver*

*Source: Metropolitan Transportation Commission*
Bridge inspections are performed by Caltrans biennially. Data is stored in the PONTIS bridge management system, however MTC develops the short- and long-term needs assessment using the FHWA’s National Bridge Investment Analysis System (NBIAS). The software also allows MTC to perform scenario analyses for bridges. NBIAS has a modeling approach similar to that of the AASHTO PONTIS Bridge Management System (BMS) but only requires publically-available National Bridge Inventory (NBI) data, in contrast detailed element data necessary to run PONTIS. NBIAS is also free compared to the $10 thousand annual PONTIS license.

In Long-Range Planning. Within the context of the long-range transportation plan, the Bay Area has adopted a policy of “fix it first” and identified projects with a significant cost benefit ratio to maximize the use of scarce resources. As noted in Figure 4, over 87% of funding available in the long-range planning process has been dedicated to maintaining existing services and roadway/bridge facilities. StreetSaver allows MTC to perform long-term cost analyses based on meeting a future pavement condition. Estimates of need are calculated at the jurisdiction level and rolled-up to the region for the plan. For Transportation 2035: Change in Motion, the pavement preservation estimate of need is based on maintaining current pavement conditions through the horizon year of the plan.
**Short-Range Planning/Regional TIP Development.** MTC heavily relies upon the regional pavement management system when selecting projects for regional discretionary funds. Though these funds are allocated to cities and counties using a performance-based formula, projects using regional dollars must be recommended by StreetSaver and be sponsored by an agency whose pavement management system has been certified.

MTC’s performance-based allocation formula for the distribution of regional discretionary funds is based on four factors, including lane miles, population, funding shortfall, and the ratio of the percent of local budget spent on preventative maintenance to the recommended percent (calculated by StreetSaver). The funding shortfall component tends to reward agencies that don’t have lot of money to maintain streets.

![Figure 5: MTC’s Performance-Based Discretionary Funding Allocation Formula](source: Metropolitan Transportation Commission)

**Program Funding.** MTC’s regional asset management program is supported by a variety of local and federal funding sources. Local P-TAP data collection assistance is funded through a federal STP set-aside whereas two MTC staff members are funded through local the Transportation Development Act (TDA) and federal planning resources. Continuous StreetSaver maintenance and upgrades are funded through software sales.

**Outcomes.** The greater San Francisco Bay Area has seen a significant benefit of implementing the regional pavement management program. As agencies have spent increasing amounts on preventative maintenance over the last 20 years estimated future costs are going down, a big success largely attributable to the information and policy-decisions enabled by StreetSaver. Additionally, MTC has a comprehensive understanding of true roadway needs and can make informed decisions when prioritizing needs and evaluating tradeoffs.
The Regional Transportation Commission (RTC) has developed a pavement preservation program in close cooperation with local agencies that has hugely benefited the community. Local partners include the cities of Reno and Sparks and Washoe County. RTC is considerably different from PSRC in that they operate the local transit system, perform long-range transportation planning, and build and maintain the “regional” road network. “Regional Roads” cover all arterials and about half of the region’s collector streets and are defined by a threshold of 5,000+ average daily traffic (ADT). Cities and counties are responsible for funding activities on their respective local access/residential networks.

**Stakeholder Support.** Initial support for RTC to develop a regional pavement preservation program was rooted in a common understanding that roadways were in sub-standard condition and that a new approach to managing these assets was needed. Stakeholders simply understood the issue. As the program evolved, maintaining stakeholder support through consensus-building and transparency was important. As an example, during the development of regional pavement condition standards, cities and counties were initially worried about comparisons of their programs. However RTC was able to negotiate a consensus in one case by agreeing to add low volume warehouse district roads to the regional network and assuming responsibility for their preservation; a growing issue that local agencies did not have resources to address. Developing the value proposition for stakeholders was critical to regional buy-in in this instance.

Ongoing stakeholder participation and transparency is critical to maintaining regional support. RTC’s pavement preservation program is implemented in coordination with the Pavement Preservation Committee, which consists of public works and maintenance staff of the local partners. The committee meets monthly with a focus on data collection and management, enhancing the existing program, and performing the pavement preservation project selection process. Each agency has a role in the ongoing management and development of the region’s pavement management system.

Not only do cities and counties support the pavement preservation program, citizens of the region have twice voted to support an indexed fuel tax that adjusts for inflation and has been in place since 2002. The sustainable funding provided by RTC-5 is dedicated to the regional road system.

**Goals and Objectives.** RTC has been successful at integrating the pavement preservation program with complete streets, livability and safety goals. One example of this integration is making channelization improvements for nonmotorized infrastructure during preventive maintenance slurry seal work, when a facility is essentially a blank slate. The RTC has implemented several road diet projects and added more than a hundred miles of bike lanes through this process improving safety and modal split. These improvements are essentially free since the route would have already needed to be striped after the maintenance work. Making these connections has also resulted in additional opportunities for funding in other arenas.
Through extensive coordination with local agencies RTC has developed regional pavement condition standards and performance goals for the regional network. As noted above, this was an exercise in consensus building and value propositions between cities, counties, and the regional body. Within the context of the long-range transportation plan the pavement condition index (PCI) goal is 70 for all regional roads (excluding state routes) and no more than 5% of the entire network in poor condition by 2020. Figure 6 indicates that, as of 2012, 9% of roads are in poor condition. Due to the significant amount of revenue generated through RTC’s local fuel tax and indexed receipts from the state and federal fuel taxes, the region is currently in discussions on whether to raise the minimum condition target for regional routes or reprogram regional resources to cities and counties to assist with local preservation issues.

**Data Collection and Analysis.** A key requirement of the project selection process was that PCI data could be no more than three years old or a the road was not eligible for funding. This incentivized the agencies to keep their databases current so that priorities for the network were fair between the jurisdictions. After the economic downturn the agencies lost staff and some could not keep up, so the RTC now hires a consultant to collect the data and update the agency’s databases and the RTC Streetsaver data base for the regional roads. Figure 6 also illustrates 2012 condition of roads in the greater Reno region.

Figure 6: Regional Transportation Commission Roadway Conditions (2012)

RTC member agencies have used MicroPaver for over 20 years. MicroPAVER is a program initially developed by the Army Corps of Engineers that includes both data collection and database modules. The software also provides the ability to perform scenario analyses based on achieving pavement condition targets. The RTC gathers MicroPAVER condition and inventory data from each agency annually and combines that data into an excel spreadsheet used to prioritize roads to develop a program of projects that will be constructed two years ahead. Recently, RTC acquired MTC’s StreetSaver program, which allows the agency to evaluate longer-term budget decisions on the regional network, but it has yet to be broadly implemented in the long-range planning process.

RTC also supports research through the University of Nevada and has benefited from findings in new and innovative techniques and materials, including green technologies. These advancements are extending pavement life and lowering lifecycle costs considerably.
In Long-Range Planning. Capitalizing on consistent data and MicroPAVER capabilities, RTC is able to perform scenario analyses to determine long-term pavement preservation needs in the region’s long-range transportation plan. The analysis resulted in an annual funding estimate of $18.7 million to achieve a PCI of 70 for all regional roads (excluding state routes) and no more than 5% of the total network (including local facilities) in poor condition by 2020. StreetSaver allows RTC to evaluate longer-term scenarios on the regional network.

Short-Range Planning/Regional TIP Development. The RTC pavement management system’s primary role is in project selection. Utilizing data derived from MicroPAVER, RTC’s Pavement Preservation Committee programs two years of funding using the software to ensure projects are selected using a needs-based process that is blind to jurisdictions. For a roadway to be eligible for funding, pavement condition data must not be more than 3 years old to ensure that priorities for the regional network are comparable between jurisdictions.

Due to the significant levels of funding received through the voter approved fuel tax increases (see below) the greater Reno area has effectively eliminated its backlog of pavement needs and is able to fully fund all candidate projects moving forward. As noted, the region has exceeded pavement condition targets for the regional road network and is now discussing whether to reprogram regional authority in support of cities and counties with local pavement preservation needs or raise the minimum condition standard on the regional network.

Program Funding. RTC funds the roadway preservation program and projects through the local fuel tax and indexed state and federal fuel taxes. Initially approved by voters in 2002, the local fuel tax is shared by local agencies and RTC with the “regional” road network receiving the largest component. The fuel tax is indexed to producer price index (PPI) which tracks better with construction inflation than the more commonly used consumer price index (CPI). The index also applies to the federal gasoline and diesel taxes and the state fuel tax on fuels sold within Washoe County, with RTC and the region receiving the incremental revenues generated.

Outcomes. The most significant outcome of RTC’s pavement management program is the elimination of the pavement project backlog and ability to program most resources to meet ongoing maintenance and other transportation needs. Implementing an effective program has resulted in cheaper treatments and longer lasting roads, subsequently freeing future revenues for capacity and other types of improvements in both the short- and long-range timeframes.

Southeast Michigan Council of Governments: Greater Detroit, MI Region

Ed Hug, Planner, Data Analysis Group
2040 Regional Transportation Plan for Southeast Michigan

SEMCOG, as the MPO for the 7 county greater Detroit region, has developed a regional asset management program to implement a Michigan state law requiring the assessment of pavement conditions on all federal-aid highways biennially. The agency has expanded upon this basic program and tied pavement management goals to broader regional objectives and adopted a robust
data collection and analysis program that provides for informed decision-making in the long- and short-range horizons. The region benefits from a statewide fuel tax set-aside to partially implement the regional program.

Stakeholder Support. Support for the SEMCOG asset management program is rooted in the state of Michigan’s top-down approach to pavement preservation. Act 499 of the State of Michigan Public Acts of 2002 encourages all agencies using state transportation funds to implement an asset management approach under the leadership and oversight of the newly created Transportation Asset Management Council (TAMC). Broad representation on the committee includes the Michigan Department of Transportation, cities, county road commissions, MPOs, and other appropriate stakeholders. The TAMC was created to be a coordinated, unified effort by roadway agencies within the state to set the statewide transportation asset management strategy, goals for collecting condition data, and strategic goals for roads and bridges. Since 2007 the TAMC has required an annual report from roadway agencies on the pavement condition of the Federal-Aid system and local system if available. Implementing these requirements is the basis of the SEMCOG regional asset management program. More recently, local political leadership is buying into adopting asset management principles for managing infrastructure as the result of increasingly scarce transportation resources.

Goals and Objectives. SEMCOG’s asset management goals are tied to broader regional objectives identified in the long-range transportation plan. The desired outcomes are grouped into six categories: economic prosperity; desirable communities; fiscally sustainable public services; reliable, quality infrastructure; health, attractive environmental assets; and access to services, jobs, markets, and amenities. Related specifically to pavement preservation SEMCOG’s regional goals are to maximize the amount of roads and number of bridges in good or fair condition over the life of the plan. Short term-objectives include 5-year regional condition targets, which are primarily achieved through project selection.

Data Collection and Analysis. Virtually all levels of government in southeast Michigan are involved in the collection of pavement condition information as a result of TAMC requirements. The Council partners with the Michigan Department of Transportation (MDOT), MPOs, and county road commissions to collect required pavement condition data on all federal-aid roads. In most cases, these agencies are reimbursed for expenses related to data collection out of a $1 million annual statewide fuel tax set-aside for the TAMC. For local agencies, the state maintains a grant program for collecting pavement condition data on local routes. The local agencies can be reimbursed $11.65 per valid mile of rated road. Local access/residential routes are surveyed relatively infrequently and are considered ‘nice to have’, but not required for our planning efforts.

Figure 7: Pavement Conditions in Southeast Michigan, 2004-2012
Condition ratings on 8,000 miles of federal-aid roads are collected over a two year period using the PASER (Pavement Surface Evaluation and Rating) system (4,000 miles annually). PASER is a visual “windshield” system used to identify the type and extent of defects present on a segment of road. Based on the visual inspection, the road segment is assigned a score from 1 to 10. Roads with a rating 10 are new, while 1s are in the worst condition. Figure 7 displays pavement conditions in the region for the previous 9 years.

SEMCOG’s uses Roadsoft GIS (www.roadsoft.org) as its pavement management system. Developed by Michigan Technological University, Roadsoft is required for collecting pavement condition data on federal aid roads. Roadsoft must be used by local agencies to qualify for financial assistance to collect pavement condition data and is available to all public agencies at no cost.

SEMCOG has adapted a long-range forecasting tool called the Pavement Condition Forecasting System (PCFS) to perform scenario analyses. The tool is a network & probabilistic-based spreadsheet used for forecasting system conditions based on different funding levels and the type of work (percent preventative maintenance vs. rehabilitation vs. reconstruction) performed in each year. Analyses are based on existing road conditions, useful life information, and actual project costs.

In Long-Range Planning. SEMCOG utilizes pavement management data and technical capabilities to develop a data-driven, outcome-oriented state of good repair component of the long-range transportation plan. Using the PCFS, SEMCOG develops investment scenarios framed using pavement condition targets and/or potential levels of investment. The following figures illustrate examples of SEMCOG’s pavement preservation scenario planning products. Figure 8 depicts the percentage of roadway facilities in “good” or “fair” condition in Monroe County by 2020 based on estimated annual revenues and the percentage of the of those resources dedicated to capital preventive maintenance (CPM), rehabilitation, and reconstruction projects.

![Figure 8: Percent of System in Good or Fair Condition Based on LRTP Funding Scenarios](image)

Source: SEMCOG

SEMCOG also generates estimates of the costs necessary to meet pavement condition goals. This analysis asks the question “how much would the region have to spend to hit performance targets?”
Finally, as depicted in Figure 10 this information allows the SEMCOG board to evaluate tradeoffs in the long-range planning process.

**Figure 9:** Cost to Achieve Pavement Condition Targets by 2020 Depending on Portion of Funds Allocated to Capital Preventive Maintenance

<table>
<thead>
<tr>
<th>Target for % of Roads in Good &amp; Fair Condition</th>
<th>Percentage of Pavement Funds Allocated to CPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>95%</td>
<td>$993.0</td>
</tr>
<tr>
<td>90%</td>
<td>$900.9</td>
</tr>
<tr>
<td>80%</td>
<td>$896.4</td>
</tr>
<tr>
<td>70%</td>
<td>$691.8</td>
</tr>
<tr>
<td>60%</td>
<td>$586.7</td>
</tr>
<tr>
<td>50%</td>
<td>$482.1</td>
</tr>
</tbody>
</table>

Source: 2040 Regional Transportation Plan for Southeast Michigan

**Figure 10:** Percent of Total Investment in Regional Transportation Plan Dedicated to Pavement Preservation Based on Meeting Pavement Preservation Targets

Source: 2040 Regional Transportation Plan for Southeast Michigan

**Short-Range Planning/Regional TIP Development.** SEMCOG takes a localized approach to project selection under the broad direction of regional policy. Federal resources are sub-allocated to countywide groups that select projects and submit to SEMCOG for further technical and policy-review. Pavement condition data is used by each county federal aid committee as one input for this process. SEMCOG recognizes that each county has different needs and maintaining a decentralized project selection process allows counties to select their projects relative to unique priorities and performance goals, with emphasis on preventative maintenance. Pavement preservation projects are evaluated against other needs with no set-asides.

**Program Funding.** Michigan State sets-aside $1 million annually for pavement preservation activities. Funding is distributed through the state TAMC for the following purposes:
• Local agency reimbursement for pavement data collection costs on federal-aid and local routes;
• Local and state asset management plan development;
• Training and capacity building for local agencies; and
• Continuous enhancement of the RoadSoft software.

Outcomes. By implementing a regional asset management program SEMCOG has learned that the region should be programming more resources towards capital preventative maintenance relative to expensive rehabilitation and reconstruction projects to achieve long-term cost savings and maintain a higher percentage of the system in good condition. SEMCOG has also learned that a mix of incentives and requirements is the best approach to encourage data collection and local investment. An innovative project that is the result of the regional asset management program involves SEMCOG coordinating with local road agencies, MDOT, and utility providers to create a project clearinghouse web site. The idea is to get road work aligned with sewer, water, gas, telecommunications, and other providers so all utilities in a corridor can be improved in concert.

Grand Valley Metropolitan Council: Greater Grand Rapids, MI Region

Jim Snell, Senior Transportation Planner

2035 GVMC Long-Range Transportation Plan

The Grand Valley Metropolitan Council (GMVC) has created an asset management program largely focused on pavement preservation for use in a variety of transportation planning and programming efforts. Outputs of the program include determining financial commitments in the long-range transportation plan, determining which preservation projects are eligible and priority for federal funds, and understanding what areas of the federal aid system have been determined as deficient. As with SEMCOG, the Grand Valley region also benefits from Michigan’s $1 million annual fuel tax set-aside for program implementation.

Stakeholder Support. Similar to SEMCOG, GVMC’s program was born out of the Michigan State requirement that cities and counties maintain accurate pavement condition data. That requirement has expanded to where Michigan now requires roadway agencies to report the condition of 50% of federal-aid facilities on an annual basis. Also similar to SEMCOG, GVMC’s program is highly coordinated with the state Transportation Asset Management Council (TAMC). Beyond the state requirement for maintaining and reporting pavement preservation data, buy-in for the regional program is derived from a common stakeholder understanding that preservation is the greatest challenge facing Michigan’s transportation system and that clear, accurate, and comprehensive data is critical to making informed decisions.

Goals and Objectives. GVMC pavement preservation goals and objectives have been developed within the context of the long-range transportation planning process, which in turn drive short-term funding allocation decisions. The overall goal is to “assure the preservation and maintenance of existing facilities and work to educate decision-makers about the need for adequate transportation funding.” Objectives within that goal include:
• Objective 2a: Allocate transportation funds to cost-effectively maintain existing infrastructure so as to protect the serviceability of previous investments.

• Objective 2b: Develop and apply transportation management principles and techniques, in cooperation with state and local agencies, to identify, assess, and maintain existing transportation infrastructure and maximize road maintenance budgets.

• Objective 2c: Encourage effective and proper maintenance of state and local transportation facilities employing best practices and innovative technologies.

• Objective 2d: Prioritize roadway projects that improve existing facilities over those that develop new roadways and encourage the use of existing right-of-ways for the development and expansion of the transportation system for all users.

• Objective 2e: Cooperatively work with local, state, and federal officials to educate decision-makers about transportation funding needs.

Data Collection and Analysis. GVMC surveys all 1,570 miles of the federal-aid system annually and local streets through contracts using an instrumented data collection van. Collecting pavement condition data using this approach is safe, flexible, and significantly more cost efficient than the previous method of deploying field staff to manually rate facilities. As noted in GVMC’s long-range transportation plan, this approach allows for far more data to be collected at a much cheaper price (<$100 per mile) resulting in an estimated annual savings of approximately $75,000¹. Further, the van is capable of capturing other roadside features such as signage, guardrails, the presence of non-motorized facilities, and the geometric configuration of roadways which adds value to safety, nonmotorized, and other planning processes at GVMC.

GVMC has long-used a two distinct programs to collect and analyze pavement data. Similar to Reno’s RTC, GVMC uses the MicroPAVER pavement data collection program to collect pavement condition information in the field. Roadsoft is the data storage and analysis platform that allows GVMC to incorporate pavement lifecycle costs and perform scenario analyses in the long-range transportation planning process. GVMC also collects pertinent traffic data such as average daily traffic (ADT) that allows the agency to customize pavement deterioration curves when estimating future conditions.

In Long-Range Planning. The goals, emphasis on preservation, and technical capabilities at GVMC have resulted in a robust long-range planning process with regard to pavement preservation. Utilizing current pavement conditions data and the Roadsoft system GVMC is capable of performing scenario analyses in an outcome-driven process based on both levels of investment as well as desired future conditions. The results of this process highlight the need to invest additional resources in pavement preservation to reach future condition goals. Figure 11 represents these capabilities.

---

¹ GVMC 2035 Long Range Transportation Plan
Short-Range Planning/Regional TIP Development. GVMC’s pavement preservation program is also heavily relied upon in the short-range planning program and regional project selection process. Since there are relatively few congestion-related construction needs in the greater Grand Rapids region, the region, through local consensus, has decided the majority of STP funding should be programmed towards regional preservation needs. GVMC has implemented a project selection process consisting of two components that implement this policy.

First, using pavement condition data and thresholds established by GVMC Transportation Committees, staff identifies roadway segments eligible for Federal funding. Once these roadways have been identified the Transportation Programming Study Group selects which segments will be included in the program and what treatment type will be applied to maximize the life of the roadway. Figure 12 displays which project types are eligible on roadways with various pavement condition index (PCI) ratings. Reaching system wide pavement condition targets is a component in these programming decisions. Historically, the committee has focused on more expensive overlay and reconstruction projects. However, realizing that the region will never have sufficient resources to reconstruct all roadways GVMC recently began to program federal resources for lower-cost treatments such as routine maintenance.

In addition to the regional pavement preservation program GVMC allocates Federal resources to cities and counties based on local factors including lane miles, VMT, and population. As a condition for receiving these funds each agency must participate in the regional pavement preservation program.
**Program Funding.** GVMC funds their regional asset management program through a regional STP set-aside. Buy-in for using scarce Federal resources for this purpose stems from a strong local commitment to maintaining a current and accurate pavement condition dataset. As with SEMCOG, local expenses associated with data collection are reimbursable by the same statewide fuel tax set-aside allocated to the TAMC for program enhancement and implementation.

**Outcomes.** Figure 13 clearly shows the benefits of GVMC’s concerted efforts to emphasize and prioritize pavement preservation in the long-range planning and resource allocation processes. The agency acknowledges that the program has been an invaluable tool for managing and keeping a close inventory of pavement conditions. Further, the program will continue to provide local decision-makers the data necessary to make well-informed decisions on roadway condition improvements.

**Conclusion**

This peer exchange was based on four regional planning agencies discussing their experiences, challenges, and creative approaches to developing and maintaining regional asset management programs. Key findings include:

- Clearly communicating the value proposition is a critical step in cultivating stakeholder support and regional buy-in.
- Setting a vision and defining goals and objectives to support it is necessary to develop an effective asset management program.
- Each peer agency stressed the importance of starting with a focused program with the capacity to expand scope as efficiencies in core efforts are realized.
- The most critical component of each peer agency asset management program is the ongoing effort to collect pavement condition data at regular intervals.
- Maintaining a stable funding source is important to creating a sustainable long-term program and integrating with parallel planning processes.
- Each MPO must work with stakeholders to develop a program that addresses the region’s specific goals and needs, and works within available resources.
- Peer agencies put a considerable emphasis on pavement preservation relative to other asset types in regional planning efforts.

Next Steps

Through summer 2014 PSRC will continue to refine a vision for a regional asset management program that adds value at the local level and allows the agency to meet new MAP-21 performance-based planning requirements. The peer review has been critical in highlighting approaches to program development and identifying potential program elements.