



# Recommended TDM Performance Measures

Regional Transportation Demand  
Management (TDM) Strategic  
Action Plan

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# Table of Contents

<b>Introduction</b> .....	<b>1</b>
<b>Best Practices</b> .....	<b>1</b>
Selecting Measures .....	1
Monitoring Performance and Assessing Impacts.....	2
<b>Existing Performance Measures</b> .....	<b>3</b>
Congestion Management Process (CMP) .....	3
Regional Operations Plan.....	3
Long Range Transportation Plan.....	4
Regional TDM Strategic Action Plan Goals .....	5
<b>Performance Data Sources and Analysis Approaches</b> .....	<b>6</b>
<b>Recommended Performance Measures</b> .....	<b>7</b>
<b>Implementation: Performance Management</b> .....	<b>12</b>

## Tables

Table 1: SPC System Performance Measures and Targets .....	4
Table 2: Themes, Strategies, and Actions to Identify SPC SmartMoves Plan Goal of Connected Mobility .....	5
Table 3: Summary of Recommended TDM Performance Measures for SPC Regional TDM Strategic Action Plan.....	11

## Introduction

Performance measurement is important for the Regional Transportation Demand Management (TDM) Strategic Action Plan in order to track the implementation and effectiveness of actions toward meeting regional goals. Establishing performance measures that are aligned with regional TDM goals helps to ensure that that regional and local TDM programs prioritize actions that will assist with meeting those goals. Moreover, by raising awareness and integrating these performance considerations into decision making, performance measures support regional and local investment and policy decisions that work toward meeting those goals. These measures are important for tracking progress over time, making adjustments, and communicating results in terms that are meaningful.

In this document, TDM performance measures are recommended building on a review of the SPC regional goals in the Long-Range Transportation Plan, the Congestion Management Process (CMP), and the Regional Operations Plan. These recommendations also connect to the Federal performance measures required under the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act, which include non-single occupant vehicle (non-SOV) mode share, annual hours per capita of peak hour excessive delay, and emissions reductions associated with Congestion Mitigation and Air Quality Improvement (CMAQ) projects.

## Best Practices

Regions across the country struggle with performance measures for TDM, as it can be difficult to attribute outcomes such as reduced vehicle miles traveled to specific TDM strategies and to assess the effectiveness of TDM program initiatives, which often involve an array of activities, including marketing, outreach, and incentives. Performance measures can be used at two broad scales:

1. To measure the effectiveness of TDM programs and/or individual TDM strategies, such as the effectiveness of a vanpool program, regional ridematching program, employer outreach efforts, or a consumer outreach campaign; and
2. To measure regional or sub-regional (e.g., county, municipality, business district, or corridor) performance in managing travel demand (e.g., in terms of mode shares, vehicle travel, and/or congestion levels).

Recognizing that effective demand management involves a wide array of strategies – including employer and commuter outreach, land use strategies, parking management, transit services, transportation infrastructure, and transportation systems management and operations – it is useful to consider performance measures at both scales.

## Selecting Measures

Based on reviews of regional efforts and programs across the country, general best practices for selecting TDM performance measures include:



- Ensure performance measures are standardized across the region to capture the effects of TDM services delivered by different stakeholders (such as outreach and technical assistance of transportation management associations) and tools (such as a ride-matching platform to enable documentation and reporting of TDM activities and results) at a regional level, in order to provide consistency.
- Develop performance measures that directly address TDM goals and priorities, which may include specific aspects of managing demand, such as shifts to specific modes or services (e.g., use of park-n-ride facilities, bicycle sharing) or specific types of engagement (e.g., employers offering commuter benefits). Moreover, it is valuable to go beyond measuring vehicle trip reduction to assess outcomes in terms of overall goals, such as environmental quality (e.g., emissions reductions) and public health.
- Develop performance measures to evaluate the effectiveness of TDM programs and projects to inform ongoing and future implementation, and document the results of program efforts (outcomes) for communicating to stakeholders and the public.
- Integrate performance measures focused on person mobility into the overall investment planning and prioritization process at a regional scale. For instance, in the Congestion Management Process (CMP), use performance measures such as person hours of travel delay per capita to optimize person movement (e.g., transit, HOV) rather than measures like vehicle hours of delay or roadway level of service, which optimize vehicle movement. The performance measures used in the CMP at a regional scale to track performance and to compare alternative investment strategies can be developed in ways that emphasize strategies to move people across multiple modes rather than focusing solely or primarily on vehicles.

## Monitoring Performance and Assessing Impacts

Best practices related to performance data collection and management emerged from the best practices review and interviews with the Atlanta Regional Commission (ARC), Mid-America Regional Council (MARC), and Denver Regional Council of Governments (DRCOG). These practices include:

- Use a Customer Relationship Management (CRM) system to keep track of employers, outreach activities and engagement, mode shifts, and data that partners such as transportation management associations (TMAs) can easily track and report on activities and outcomes. CRM software ranges in functionality and cost (including free web-based versions) and helps TDM programs to streamline outreach by managing employer and partner contacts as well as tracking communications and outcomes (ARC and MARC).
- Use ridematching platform and trip tracker user data to obtain activity and output metrics such as number of customers registered, number of ridematch searches, and number trips tracked by alternative transportation (ARC and MARC).
- Use data from road sensors, vehicles, and mobile networks from products such as Streetlight or Inrix to validate trends observed across performance measures (DRCOG).
- Strategically deploy surveys to understand complex factors like workforce access and strategies that will be effective, such as willingness of job seekers to share rides and willingness of employers to invest resources in potential access solutions (MARC).

- Estimate impacts of overall program efforts (e.g., in terms of reductions in vehicle miles, trips, and changes in congestion or delay time and emissions).

## Existing Performance Measures

### Congestion Management Process (CMP)

The SPC's CMP uses the following fundamental performance measures, collected by vehicle probe data.

- **Posted Speed Reliability Index:** the percentage of time that the measured average speed for a corridor is at or near the average posted speed for the corridor (i.e. how often vehicles can flow freely in the corridor without significant delay).
- **Expected Travel Time Reliability Index:** the percentage of time that the measured travel time for a corridor is within 10% (or below) of the median weekday travel time for that corridor (i.e. how often are you able to travel the corridor in the amount of time you would expect with typical recurring levels of congestion).
- **Travel time, speed and delay:** measured by the amount of time it takes a vehicle to traverse a road segment given interference (delay).

The index measures (Posted Speed Reliability and Expected Travel Time Reliability) are only used on Interstates and other limited-access freeways. These measures are used to calculate additional performance measures such as **Delay per Vehicle per Mile** and **Total Delay**. Because these measures are collected from vehicle probe data, they center performance on vehicle travel rather than person travel, and so *do not strongly support TDM or have direct application for assessing TDM strategies*.

### Regional Operations Plan

The SPC's Regional Operations Plan proposes the following regional system performance measures for the operational objective to facilitate travel demand management:

- Number of registered users in regional CommuteInfo program
- Transit ridership
- Number of people carried by HOV lanes, busways & LRT
- Park-n-ride utilization rates

In addition, the plan includes performance measures in relation to a wide array of other operational objectives, such as improving work zone management, facilitating the management of traffic for special events, and providing timely and reliable traveler information for planned and unplanned events, including:

- Travel time reliability index
- # of 511 calls within the region
- % of regional bus routes providing real-time tracking
- % of transit shelters and platforms with real-time arrival displays
- % up-time of intelligent transportation systems (ITS) devices

- # of corridors with travel time postings on dynamic messaging systems (DMS)
- # of message postings on DMS boards.

Based on resource considerations and the current availability of data, the Regional Operations Plan identified the following regional system performance measures as key for Southwestern Pennsylvania. Measures related to TDM are shown in bold.

- **Transit ridership**
- **Percentage of regional bus routes with real-time tracking**
- Total Delay (vehicle-hours)
- Posted Speed Reliability Index
- Expected Travel Time Reliability Index
- Annual number of crashes at signalized intersections
- Annual number of pedestrian fatalities and major injuries
- Annual number of bicyclist fatalities and major injuries
- Percentage of at-grade highway-rail crossings with active warning gates
- Number of first responders completing national TIM training
- FHWA Traffic Incident Management (TIM) self-assessment score
- Number of traffic signals capable of remote operation from an actively managed traffic management center

## Long Range Transportation Plan

The Long-Range Transportation Plan SmartMoves includes a Transportation Performance Management Appendix<sup>1</sup>, which describes performance measures, targets, as well as baseline data to meet the Federal performance-based planning requirements. The Federal requirements most relevant to TDM are the system performance measures (PM-3), which include assessment of traffic congestion and on-road mobile source emissions. These system-level performance measures, required by FHWA include the following. Baseline measures and targets are provided where applicable.<sup>2</sup>

Table 1: SPC System Performance Measures and Targets

Measure	Statewide or SPC?	Baseline (2017)	2-Year Target (2019)	4-Year Target (2021)
Percent of person-miles traveled on the Interstate that are reliable.	Statewide	89.8%	89.8%	89.8%
Percent of person-miles traveled on the non-Interstate National Highway System (NHS) that are reliable	Statewide	87.4%	N/A	87.4%
Peak hours of excessive delay per capita	SPC	11.1	N/A	11.8
Non-single occupant vehicle (non-SOV) work mode share	SPC	24.8%	24.6%	24.4%

<sup>1</sup> Retrieved from [https://spcregion.org/pdf/SmartMoves/SM\\_App\\_II\\_TPM.pdf](https://spcregion.org/pdf/SmartMoves/SM_App_II_TPM.pdf)

<sup>2</sup> Source of SPC targets: 2019-2022 TIP. Retrieved from: [https://www.spcregion.org/pdf/TIP2019-2022/2019\\_2022\\_TIP\\_Appendix%20Trans%20Perf%20Meas.pdf](https://www.spcregion.org/pdf/TIP2019-2022/2019_2022_TIP_Appendix%20Trans%20Perf%20Meas.pdf)

Measure	Statewide or SPC?	Baseline (2017)	2-Year Target (2019)	4-Year Target (2021)
CMAQ program emissions reduction	SPC	SPC has set pollutant specific targets for VOC, NO <sub>x</sub> , PM, and CO.		

The draft LRTP identifies the following themes, strategies, and actions to support the goal of Connected Mobility shown in Table 2 below, which are useful context to consider in developing performance measures for TDM.

Table 2: Themes, Strategies, and Actions to Identify SPC SmartMoves Plan Goal of Connected Mobility

Themes	Strategies	Actions
Mobility for All: Equity Keeps Us Whole	Equitable Access	<ul style="list-style-type: none"> <li>Local and Agency Collaboration</li> <li>Increase Mobility Equitably</li> </ul>
High Tech Mobility: Connected and Autonomous Vehicles	Emerging Technology	<ul style="list-style-type: none"> <li>Modernize Supporting Infrastructure</li> </ul>
	Autonomous Technology	<ul style="list-style-type: none"> <li>Offset Potential CAV Impacts</li> </ul>
Funding and Financing: Sustainable Funding	Sustainable Funding	<ul style="list-style-type: none"> <li>Matching Revenue to Needs</li> <li>Identify New Revenue Sources</li> <li>Promote Public-Private Partnership</li> </ul>
	Public Awareness	<ul style="list-style-type: none"> <li>Increase Awareness</li> </ul>
	Public Transit	<ul style="list-style-type: none"> <li>Sustainable Public Transit Funding</li> <li>Facilitate Seamless Linkages</li> <li>Regional Collaboration</li> </ul>
Prioritize and Streamline: Faster Project Development and Delivery	Prioritize and Streamline	<ul style="list-style-type: none"> <li>Holistic Planning</li> <li>Promote Collaboration</li> </ul>
	Project Development and Delivery	<ul style="list-style-type: none"> <li>Streamline Process</li> </ul>

## Regional TDM Strategic Action Plan Goals

An important role of the TDM performance measures is to support tracking progress against the goals of the SPC’s Regional TDM Strategic Action Plan. The following goals have been proposed (including some adjustments following workshop #2):

1. Enhance the ease of use, connectivity, and effectiveness of travel options, including transit, shared mobility options, bicycling and walking
2. Increase employer involvement to improve workforce access to jobs
3. Increase awareness of travel options and services
4. Promote location-efficient development and TDM-oriented design
5. Target opportunities for TDM beyond commute trips and to address non-recurring sources of delay (special events, work zones, weather, incidents)
6. Integrate demand management in planning and project development

## Performance Data Sources and Analysis Approaches

In recommending performance measures, it is important to consider data availability. Measures for which no data are available or are of poor quality or consistency will create challenges for use in tracking performance. Data may reflect direct observations (e.g., counts of travelers). In other cases, particularly in order to assess the impacts of TDM strategies on outcomes, surveys may be needed to understand shifts in behavior or travel patterns.

Data availability is essential to on-going performance measurement, though can be costly to obtain and manage. Therefore, the SPC should minimize the number of surveys or additional data needed for TDM performance measurement. Additionally, the SPC should leverage existing data sources to assess performance impacts at varying scales, including local street networks, corridors, and regionally. Several data sources are noted below:

**Data available through the CommuteInfo platform** includes commuter registrants, commute options report submissions, active vanpools, and emergency ride home registrants and redemptions. The CommuteInfo program also tracks engagement with employers and stakeholders through outreach.

**The SPC's *Streetlight Insight* subscription** provides a platform for analyzing travel data obtained by GPS and location-based services from mobile devices, representing approximately 23% of the travelling public. The platform can validate and supplement TDM system performance measures with data at the sub-regional and corridor levels, including relative volume and average travel time of commercial and personal trips between specified origin and destination zones. Trips can be parsed by trip purpose and demographics of travelers and can be customized by date range, day of week, and time of day. While SPC's current subscription of *Streetlight* provides data only within a 35-mile buffer of the City of Pittsburgh, the subscription renewal planned for July 2019 will cover all 10 counties and allow for multi-modal analysis including transit, bicycle, and pedestrian trips.

**Data on travel time and speed from vehicle probe** is gathered in real-time from public and private sources including roadway sensors, commercial fleets, in-car navigation systems, and cell phones. SPC can access this data for planning and performance measurement via contracts in place by PennDOT and FHWA with traffic data providers.

**Federal and State data sources** are also available. For system performance measures required by FHWA (PM-3), data on non-SOV travel is obtained from the American Community Survey (ACS). Data on mobile source emissions is estimated at the project level, and then aggregated from FHWA's CMAQ annual reporting system.

It should be noted that data on non-motorized (bicycle and pedestrian) activity levels is currently limited and not suitable for extrapolating local counts to estimates of activity levels regionwide. In 2016, the SPC piloted a cyclical bicycle data collection program that gathered short-term automated bicycle counts at seven locations in the region, including trails and mixed traffic settings. SPC's Active Transportation Plan identifies the opportunity for the SPC to facilitate development of local bicycle count programs through the lending of automated counting equipment and training on equipment use and data collection. While this localized count data



provides insight on use and of specific facilities, it does not provide the geographic coverage necessary to estimate bicycle activity at the regional level.

## Recommended Performance Measures

Recommended performance measures were developed through consideration of best practices, available data sources, and existing performance measures identified in the SPC’s transportation planning and programming documents. Performance measures generally address a typology of:



Awareness (e.g., awareness of travel options, travel information);



Activities (e.g., participation in a vanpool program, number of ride matches);



Outputs (e.g., mode shifts, increases in average vehicle occupancy); and



Outcomes (e.g., reduced vehicle miles traveled, reduced travel time, reduced emissions, cost savings).

Performance measures are described below and summarized in Table 3 in relation to each of the TDM Strategic Action Plan goals. It is important to recognize that while many of these measures can be used at the regional scale, many of the measures are also targeted for use at a subarea, corridor, or localized scale, and can be used in relation to specific program activities (for instance, to assess the benefits of a targeted marketing campaign along a specific corridor).



### **Awareness (e.g., awareness of travel options, travel information);**

*Awareness of travel options/CommuteInfo:* Due to the dominance of digital media over other channels, public awareness of travel options and the CommuteInfo program would be best measured through web traffic analytics and social media engagements. Potential measures include:

- Unique visitors to CommuteInfo.org website
- Unique visitors to TMA websites
- Engagements on social media

General public awareness and employer awareness using a measure such as the “share of population that has heard messages about commute options” could also be assessed through a regional survey.



### **Activities (e.g., participation in a vanpool program, number of ride matches);**

*Number of employers offering commuter benefits:* While there is no regional data source on commuter benefits offered by employers, the regional TDM partners can contribute to a dataset through employer engagement efforts. CommuteInfo outreach staff and partners of CommuteInfo, including TMAs, could track information on commuter benefits offered by

employers through a Customer Relationship Management (CRM) system. Alternatively, TDM stakeholders could distribute an employer survey about commuter benefits on biannual basis.

*Travelers served by CommuteInfo services:* This includes Commute Options Reports submitted and registrants for Emergency Ride Home.

*Number of vanpools operating:* The CommuteInfo program already tracks the number of vanpools operating in the region.

*% of regional bus routes with real-time tracking:* Bus services can provide this information; in addition, supplemental measures like the number of bus riders accessing real-time travel information can be tracked.

*Special events and work zone management:* Initiatives to manage demand during planned special events as well as work zone efforts, such as transit promotions, shuttles, or water taxis, can be tracked by the estimated share of total attendance to which special travel or access options were utilized, or based on the number of travelers utilizing these services. Timestamped traffic data from *Streetlight Insight* and other vehicle probe sources could be used to evaluate transportation system impacts of special events and work zones.



## Outputs

*Transit ridership (system-level or route-based):* The SPC's annual Regional Transit Profile compiles metrics for each transit agency in the SPC region. Additional measures are available through the National Transit Database.

- Average annual weekday ridership.
- Annual ridership
- Total passengers

*Non-single occupant vehicle (non-SOV) work mode share:* This measure is a federal requirement for Systems Performance Measurement and can be obtained through the American Community Survey (ACS) on an annual basis. *Streetlight Insight* data on trips by mode (including transit, biking, and walking) can validate the non-SOV mode share for both work and non-work trips, and can be used for sub-regional and corridor analysis.

*Mode share for non-work trips:* Since work trips account for only 25% of travel in the SPC region, it is valuable to measure mode share for personal trips beyond commuting. Data on non-work trips can be obtained from *Streetlight Insight*. The National Household Travel Survey (NHTS), conducted every five to seven years, provides mode share data on non-work trips, however the sample size is generally not sufficient for regional analysis without the NHTS Add-on Program. This program combines the NHTS random national samples with additional samples collected in the Add-on area (such as an MPO service area) for analysis.

*Park & ride lot utilization:* Utilization of park & ride lots across the region reflect levels of carpooling and transit use. Data can be obtained through counts on a quarterly basis at each lot.

*Number of jobs within ½ mile of regional transit routes:* This measure reflects changes in both transit service and land use patterns. Data are available through the AllTransit™ Metrics tool, an

initiative of the Center for Neighborhood Technology.<sup>3</sup> Data are available at numerous geographic scales, including Census block and tract, city, county, metro area, and MPO service area. Data is sourced from the General Transit Feed Specification (GTFS) as well as the Longitudinal Employer-Household Dynamics (LEHD) dataset.

*Number of households within ½ mile of regional transit routes:* This measure reflects changes in both transit service and land use patterns. Data are available through the AllTransit™ Metrics tool, an initiative of the Center for Neighborhood Technology.<sup>4</sup> Data are available at numerous geographic scales, including Census block and tract, city, county, metro area, and MPO service area. Data is sourced from the General Transit Feed Specification (GTFS) as well as the Longitudinal Employer-Household Dynamics (LEHD) dataset.



## Outcomes

*Vehicle miles traveled (VMT) daily per capita (regional or sub-regional scale) or VMT reduced (program evaluation):* VMT per capita is a valuable measure of performance because it is understandable and reflects the outcome of TDM efforts targeted toward encouraging travel options; when divided by population, the measure is standardized in a way that enables tracking over time as population levels change. For TDM program evaluation, VMT reduction can be estimated and is a useful measure to assess the effectiveness of specific strategies, such as marketing promotions, incentives, and new services. VMT data are available through the User Delay Cost Analysis from the National Performance Management Research Data Set (NPMRDS), though it is limited in coverage. These data can be obtained at the region, county, or corridor levels within the NPRMDS by making the appropriate selection. Alternatively, the SPC can use travel surveys and results from the regional Travel Demand Model to estimate VMT at multiple levels. VMT reductions can be calculated for specific activities based on information on travel behavior and factors such as average trip lengths and average vehicle occupancies.

*Cost savings (program evaluation):* VMT reduction can be translated into cost savings. Existing research collected in the Trip Reduction Impacts of Mobility Management Strategies (TRIMMS) Model monetizes VMT in terms of direct and societal costs such as road maintenance, noise, fuel, emissions, fatalities and injuries, as well as delay.<sup>5</sup>

*Emissions reduced (program evaluation):* VMT reduction can be translated into emissions reductions by applying emissions factors from the Motor Vehicle Emissions Simulator (MOVES) model used as part of regional emissions analysis. It is important to note that the level of sophistication of analysis can vary, from simply multiplying VMT reduced by an emissions factor, to conducting more complex analyses accounting for changes in vehicle speeds and travel conditions. Emissions can be calculated with respect to criteria pollutants, VOC, NOX, PM2.5, PM10, and CO, as well as greenhouse gas emissions. Other simplified tools that can be used also include the TRIMMS Model and the Environmental Protection Agency's Local Greenhouse Gas Inventory Tool.<sup>6</sup>

<sup>3</sup> Available at <https://alltransit.cnt.org/metrics/>

<sup>4</sup> Available at <https://alltransit.cnt.org/metrics/>

<sup>5</sup> Retrieved from <http://trimms.com/>

<sup>6</sup> Available at <https://www.epa.gov/statelocalenergy/local-greenhouse-gas-inventory-tool>

*Cost effectiveness (program evaluation):* Cost effectiveness compares the cost of implementing TDM strategies with total impacts, for example, the cost per VMT reduced. Tools exist to go beyond cost effectiveness and monetize the value of TDM outcomes (such as VMT reductions) to estimate return on investment (ROI). FHWA's TDM ROI Calculator<sup>7</sup> is a tool that monetizes the direct and social benefits of existing TDM strategies at the regional and sub-regional level. The calculator can analyze a single TDM service or bundle of TDM services together, and can be applied to the entire region, activity center, county, local jurisdiction, or highway corridor. While this tool is the most comprehensive available for calculating ROI on TDM, it does not account for several significant TDM-related costs and benefits, including costs savings from parking or vehicle ownership, improved mobility for those who do not drive, and health benefits. For this reason, it is recommended that the SPC use cost effectiveness rather than ROI.

















It should be noted that at a sub-regional or corridor scale, specific evaluations can also be conducted to assess *person hours of delay reduced* in response to targeted TDM initiatives. However, these assessments are challenging, given the variety of factors that affect travel speeds and delay. At the regional scale, moreover, measures of congestion are not very valuable as a means to assess TDM since congestion is affected by both supply and demand considerations.

Note that while TDM strategies can play a valuable role in improving travel time reliability, and national performance measures include *the percent of person-miles traveled that are reliable*, this is not recommended specifically as a measure of TDM success at a regional scale since reliability is affected by a wide array of factors and strategies, including transportation systems management and operations strategies.

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<sup>7</sup> Available at <https://mobilitylab.org/calculators/download-tdm-roi-calculator/>

Table 3: Summary of Recommended TDM Performance Measures for SPC Regional TDM Strategic Action Plan

Performance Measure	Federal Requirement	Regional Ops Plan	Regional TDM Strategic Action Plan Goals						
			Enhance travel options	Increase Employer Involvement	Increase Awareness of Travel Options	Location-Efficient Development	Target Opportunities Beyond Commute / Non-recurring Delay	Integrate TDM into Planning & Projects	
 Awareness of travel options/ CommuteInfo				●	●				
 Number of employers with commuter benefits				●					
 Travelers served by CommuteInfo			●	●	●				
 Number of vanpools operating regionwide			●	●					
 % of regional bus routes with real-time tracking		●	●		●				
 Special events management								●	
 Transit ridership (Route-based or system)		●	●	●	●	●	●		
 Non-SOV mode share for work trips	●		●	●	●	●	●		
 Non-SOV mode share for non-work trips			●		●	●	●	●	
 Park & ride lot utilization			●	●	●				
 Number of jobs within ½ mile of regional transit routes			●				●		
 Number of households within ½ mile of regional transit routes			●				●		
 Vehicle miles traveled (VMT) per capita / VMT reduced			●	●	●	●	●	●	●
 Cost savings			●	●	●	●	●	●	●
 Emissions reduction*	●		●	●	●	●	●	●	●
 Cost effectiveness			●	●	●	●	●	●	●

\*Note that the Federal emissions reduction measure addresses CMAQ projects generally.

## Implementation: Performance Management

While this memo provides a framework for selection, data sources, and analysis of TDM performance measures, implementation of effective performance management requires accountability for 1) on-going tracking of performance measures, 2) sharing performance with stakeholders and the general public, and 3) linking observed changes in performance with planning and programming of TDM activities.

To ensure that performance measurement provides meaningful insight on the impacts of TDM activities over time, SPC staff should be assigned responsibility for tracking key performance measures, most of which can be tracked on an annual or biennial basis in tandem with the SPC's overall performance management program. For instance:

- CommuteInfo staff would report on program-measures, such as the number of employers offering commuter benefits, travelers served by CommuteInfo, and number of vanpools operating regionwide annually.
- SPC's transportation planning / data analysis staff would compile system-level measures, such as transit ridership, non-SOV mode share, park-n-ride lot utilization, and VMT per capita, drawing on data from transit agencies, PennDOT, SPC surveys, and other data sources, including Federal agencies at least every two years.
- Partner agencies, such as TMAs, PennDOT, and counties or municipalities would report on specific programs or pilot efforts targeted to corridors, business districts, or local areas in association with program funding.

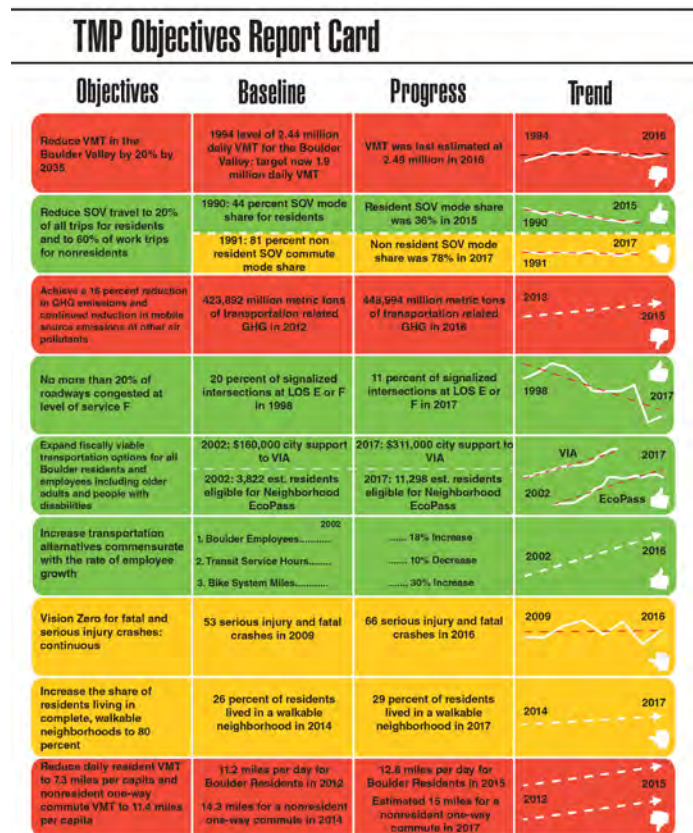


Figure 1: City of Boulder's 2018 Transportation Management Plan Objectives Report Card.

A TDM Advisory Committee should provide guidance in reviewing the results, advising on communication, and assessing implications in terms of future program and funding priorities.

Performance measures can help to communicate to the public and stakeholders about progress toward goals, and performance information should help to inform future priorities, including policy and program changes. Therefore, performance measures should be shared in a user-friendly and accessible format, such as a report card or dashboard. It is recommended that a report card or dashboard be posted on the TDM Action Plan website, [spcmobility.org](http://spcmobility.org). A report card provides a snapshot of performance with respect to goals, such the 2018 report card for

the City of Boulder’s Transportation Management Plan<sup>8</sup> shown in Figure 1. The report card summarizes progress toward objectives using color and graphics to simplify more detailed text.

The summary of recommended performance measures in Table 3 could serve as a template for a report card for the SPC region. In contrast to a report card, a dashboard provides an interactive, web-based interface that displays multiple report types and allows users to access diverse datasets. Dashboards provide greater utility to stakeholders who may download and exports datasets, however, dashboards require more resources than score cards to develop and maintain. An example of a transportation performance dashboard by the Boston MPO, which includes a wide array of different types of measures, is shown in Figure 2 below.<sup>9</sup>

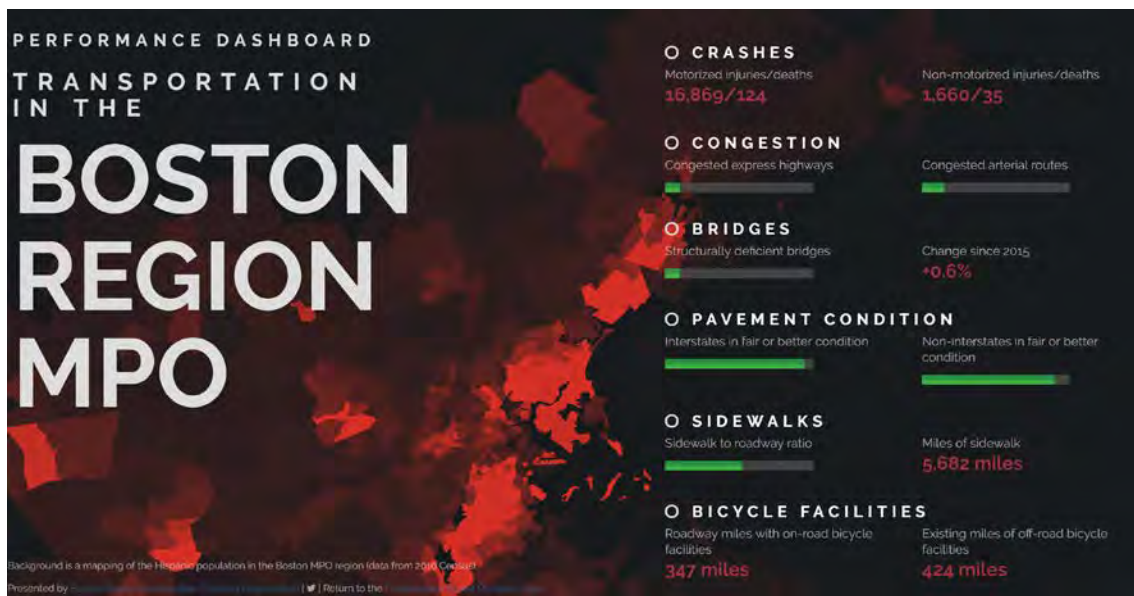


Figure 2: Transportation Performance Dashboard by the Boston Region MPO

Finally, the TDM Advisory Committee should ensure that TDM performance measures are shared with the SPC Board and key measures such as VMT per capita are integrated with SPCs overall performance management program in order to inform long-range planning and project programming.

<sup>8</sup> Graphic retrieved from <https://bouldercolorado.gov/transportation/2018-report-on-progress>

<sup>9</sup> Graphic retrieved from [https://www.ctps.org/dv/lrtp\\_dashboard/](https://www.ctps.org/dv/lrtp_dashboard/)