



COMPONENT 01

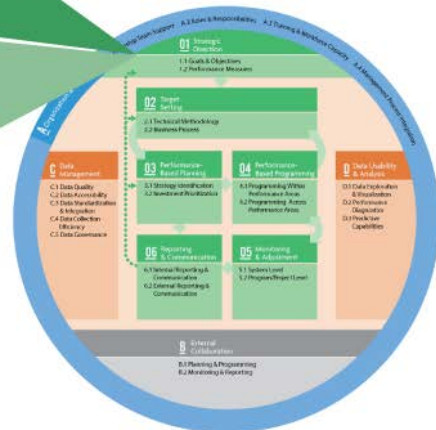
STRATEGIC DIRECTION

This chapter provides assistance to transportation agencies with the “Strategic Direction” component of Transportation Performance Management (TPM). It discusses where the strategic direction occurs within the TPM Framework, describes how it interrelates with the other nine components, presents definitions for associated terminology, provides links to regulatory resources, and includes an action plan exercise. Key implementation steps are the focus of the chapter. Guidebook users should take the TPM Capability Maturity Self-Assessment (located in the TPM Toolbox at www.tpmtools.org) as a starting point for enhancing TPM activities. It is important to note that federal regulations for strategic direction may differ from what is included in this chapter.

01 Strategic Direction

1.1 Goals and Objectives 1.2 Performance Measures

The **Strategic Direction** is the establishment of an agency’s focus through well-defined goals and objectives, enabling assessment of the agency’s progress toward meeting goals and objectives by specifying a set of aligned performance measures. The Strategic Direction is the foundation upon which all transportation performance management rests.



INTRODUCTION

A Strategic Direction is established when an agency develops and institutes goals, objectives, and a set of aligned performance measures to track progress. Defining these elements is a critical first step in the TPM process because together they determine the strategic direction for an agency and the means to assess performance changes. Carefully considered and connected goals, objectives, and measures become the structure upon which an agency's transportation performance management approach rests. This strategic direction should be integrated into an agency's business plan and related documents.

Establishment of a Strategic Direction benefits an agency by:

- Bringing about staff support for the agency's purpose;
- Clarifying what the public and other stakeholders expect from the agency;
- Focusing on current and future performance outcomes;
- Setting a clear direction for agency decision-making;
- Outlining how individual employees play a role in achieving agency goals and objectives;
- Guiding day to day activities using a unifying and overarching structure; and
- Identifying possible funding needs.

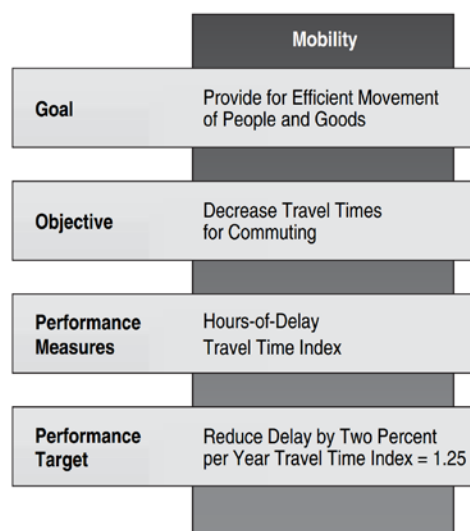
When establishing a Strategic Direction, first an agency determines “*where do we want to go,*” by crafting goals and objectives through a collaborative and inclusive process involving both internal staff and external stakeholders (e.g., policymakers, partners, citizens). The purpose of the resulting goals and objectives is to identify longer term outcomes for an agency. Assessing progress toward achievement of the goals and objectives, performance measures create a direct link between actions taken by an agency and results. For example, the construct displayed in Figure 1-1 communicates to staff that the agency is focused on providing efficient movement of people and goods and that the achievement of this outcome will be determined by a reduction in travel time index.

“If you don’t know where you are going, you will end up somewhere else.”

- Laurence Peter, US educator & writer (1919 - 1988)

Figure 1-1: Relationship Between Goals, Objectives, Performance Measures, and Targets.

Source: Strategic Highway Research Program 2¹



¹ From SHRP 2 Report S2-C02-RR: *Performance Measurement Framework for Highway Capacity Decision Making*, Figure 2.4, p. 19. Copyright, National Academy of Sciences, Washington, D.C., 2009. Reproduced with permission of the Transportation Research Board.

Together goals, objectives, and performance measures set the stage for an agency to answer, *“how are we going to get there.”* To begin answering this question, agencies use baseline data, information on possible strategies, funding constraints and forecasting tools to collaboratively establish performance targets (Component 02). The Strategic Direction combined with established targets describe how an agency will measure its achievement of identified performance outcomes. The agency will use that description of achievement as the foundation from which strategic decision-making occurs, thereby guiding the identification of strategies and investments that can and should be implemented during Performance-Based Planning (Component 03).

“Agency goals should become the steady drumbeat in the background that inspires action—the goals should be ingrained in the subconscious of workers so that they live the performance management culture.”

Source: “Moving from Reactive to Strategic Decision Making.” TR News 293 July-August 2014

From there, the Strategic Direction influences how the agency answers *“what will it take,”* using Performance-Based Programming (Component 04) to prioritize and allocate resources within and across performance areas. The Strategic Direction also drives an agency’s response to *“how did we do”* by linking the answer to this question back to agency goals and objectives and using performance measures to assess progress. The Monitoring and Adjustment (Component 05) activities agencies conduct expand the understanding about what is influencing performance outcomes and improve the delivery of programs in order to achieve desired results. The goals, objectives and measures in the Strategic Direction also serve as the foundation for communicating performance changes. In short, every stage of the TPM process links back to the Strategic Direction and the pursuit of attaining agency goals and objectives.

For a Strategic Direction to become engrained in the agency culture and embraced by external stakeholders, it should be grounded on four major building blocks:

- **Performance information:** The selected goals, objectives and measures focus an agency’s policy and investment decisions and therefore should be based on performance condition information across a range of performance areas. On what key area(s) does current performance data and future projections suggest that an agency should focus? An agency’s ability to answer such questions is dependent on its ability to use, analyze, and manage its data. See Data Management (Component C) and Data Usability and Analysis (Component D).
- **Internal buy-in:** To create a performance atmosphere within an agency, individual staff must be able to see their role in attaining goals and objectives by connecting their daily activities to the agency’s strategic direction. See Organization and Culture (Component A).
- **External buy-in:** Agency goals, objectives and measures must reflect what the public, customers, policymakers, and other stakeholders care about and align with regional priorities to appear worthwhile to the public. See External Collaboration and Coordination (Component B).
- **Continuous messaging and demonstration of commitment to goals:** In order to cement the Strategic Direction at an agency, goal language should appear in internal and external communications (e.g., signature lines for emails), be visually displayed (e.g., posters), be included in regular business activities (e.g., employee performance plans), and discussed during interactions with external stakeholders. See Reporting and Communication (Component 06) and Organization and Culture (Component A).

SUBCOMPONENTS AND IMPLEMENTATION STEPS

The component Strategic Direction is defined as the establishment of an agency's focus through well-defined goals and objectives, enabling assessment of the agency's progress toward meeting goals and objectives by specifying a set of aligned performance measures. The Strategic Direction is the foundation upon which all transportation performance management rests.

Strategic Direction is broken down into two complementary subcomponents:

- **Goals and Objectives:** Goals are broad statements articulating a desired end state that provide strategic direction for an agency. Objectives are specific, measurable statements that support achievement of a goal.²
- **Performance Measures:** Performance measures are based on a metric that is used to track progress toward goals, objectives, and achievement of established targets. They should be manageable, sustainable, and based on collaboration with partners. Measures provide an effective basis for evaluating strategies for performance improvement.

Goals and Objectives

Goals indicate the desired state of the transportation system according to both agency staff and external stakeholders. While goals are broad, their formation should be given careful consideration and due time because the dialogue and collaboration necessary to identify sound goals lays the groundwork for implementing transportation performance management practices. A transportation agency's goals should reflect the community's vision for the future and tie transportation to wider societal goals such as livability, economic prosperity, and environmental sustainability. Goals that address aspects of the transportation system that people experience directly will resonate with the public (e.g., access to jobs), but the agency must recognize that such outcome-oriented goals are often not fully under agency control. For example, equity and livability are important and resonate with the public, but transportation agencies have limited ability to affect these outcomes among other factors such as economic forces, job growth, and land use/zoning laws.³

"When WMATA asked the Jurisdictional Coordinating Committee (JCC) what the goal "deliver quality service" meant, staff was surprised that "overcrowding" was identified as a concern. WMATA had traditionally viewed crowded platform, trains and buses as a sign of success, but with this feedback, the agency created the objective "Relieve overcrowding."

Source: WMATA staff

Some agencies begin the process of defining goals by first engaging in a visioning exercise. At the same time, staff may draft a mission statement to articulate the core function of the agency (e.g., plan, build, and maintain a transportation system). The resulting paired statements (vision and mission) are often displayed inside agency facilities as a reminder to employees about the ultimate purpose of their activities. Creating vision and mission statements is addressed further in the TPM Guidebook under Organization and Culture (Component A).

Objectives make strategic goals more actionable by breaking down the goals into more specific statements. Defining objectives also provides agencies with the opportunity to ask the public and other external stakeholders, "*what does X goal mean to you?*" Agencies can also use the acronym S.M.A.R.T. (Specific, Measurable, Attainable, Realistic and

² Federal Highway Administration (FHWA). (2013). *Performance-Based Planning and Programming Guidebook* (FHWA Publication FHWA-HEP-13-041). Washington, DC. http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

³ National Cooperative Highway Research Program (NCHRP). (2000). *A Guidebook for Performance-Based Transportation Planning* (NCHRP Report 446). Washington, DC: National Academy Press. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_446.pdf

Time-bound) to assist them in creating useful objectives. Refer to the *Performance-Based Planning and Programming Guidebook* and Step 1.1.4 below for more information about S.M.A.R.T. objectives.⁴

The FHWA *Performance-Based Planning and Programming Guidebook* states that:

A good objective should include or lead to development of a performance measure in order to support decisions necessary to help achieve each goal. Objectives that include specific targets and delivery dates (e.g., reduce pedestrian fatalities by 15 percent from 2010 levels by 2018) are commonly called "SMART" (specific, measurable, agreed-upon, realistic, time-bound).

Initially, a State, region, or agency may start out by developing a general objective, which identifies an issue of concern or focus area under a goal area through public and stakeholder outreach. Data and analysis tools used as part of CMP, Transportation Asset Management Plan (TAMP), SHSP or other processes are helpful in first identifying focus areas (understanding what factors are most important in attaining goals).⁵

Goals and objectives serve as a cornerstone for every subsequent step in the transportation performance management process. In light of this, goals and objectives should reflect certain desired characteristics as discussed in Table 1-1.

Table 1-1: Desired Characteristics of Goals and Objectives

Source: Federal Highway Administration⁶

	Desired characteristics	Rationale/Purpose
Applicable to Goals and Objectives	Attributable to agency	Although many factors influence transportation outcomes, agencies should be able to identify the extent of their role in achieving the goals and objectives.
Applicable to Goals and Objectives	Outcome-oriented	To be relatable to the public, goals and objectives should reflect how the user perceives and interacts with the transportation system.
Applicable to Goals and Objectives	Supported by available data	Data are necessary to track progress toward obtaining goals and objectives.
Applicable to Goals and Objectives	Operational ⁷	The overarching purpose of goals and objectives is to guide resource allocation decisions. To evaluate strategies, goals and objectives need to be translatable into performance measures.
Applicable to Goals and Objectives	Reflect Planning Factors ⁸ , National Goals ⁹	Supports efforts to comply with regulations.

⁴ National Cooperative Highway Research Program (NCHRP). (2000). *A Guidebook for Performance-Based Transportation Planning* (NCHRP Report 446). Washington, DC: National Academy Press. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_446.pdf

⁵ FHWA. (2013). *Performance-Based Planning and Programming Guidebook* (FHWA Publication FHWA-HEP-13-041). Washington, DC. http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

⁶ FHWA. (2013). *Performance-Based Planning and Programming Guidebook* (FHWA Publication FHWA-HEP-13-041). Washington, DC. http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

⁷ National Cooperative Highway Research Program (NCHRP). (2000). *A Guidebook for Performance-Based Transportation Planning* (NCHRP Report 446). Washington, DC: National Academy Press. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_446.pdf

⁸ 23 USC § 134 (h) and § 135 (d)

⁹ 23 USC § 150(b)

Applicable to Goals and Objectives	Limited number	A general rule of thumb is to keep goals to <5 and objectives <12. Multiple goals and objectives become too unwieldy to manage and fail to provide focus for an agency. In addition, there is a multiplier effect for each additional goal/objective because a measure needs to be identified for tracking.
Exclusive to Goals	Reflect broad societal concerns	Goals provide the opportunity to demonstrate how transportation affects multiple dimensions of individual lives
Exclusive to Objectives	Specific	Given that goals are broad statements, objectives help agencies “break down” goals into more actionable pieces.

Performance Measures

Once goals and objectives have been defined, performance measures need to be selected to track progress toward attainment,¹⁰ enabling agencies to evaluate their decisions. Careful selection of performance measures is important because the measurement of particular outputs can influence what strategies are employed. For example, if an agency chooses to measure congestion using volume/capacity ratio, strategies to expand capacity (such as road widening) will take preference over more multimodal solutions because capacity-specific activities will have the most impact on this measure. Because measures indicate progress toward meeting goals, agencies could end up focusing more on moving the needle of a specific measure, possibly producing undesirable results.

“Measures should not be created for the sake of it. Instead, develop the correct measure for the correct purpose and audience.”

- Tim Henkel, Minnesota DOT

In addition, measure selection is strongly affected by data availability (see Data Management, Component C and Data Usability and Analysis, Component D). Existing data are the logical place to begin measure development, and often agencies are pushed toward using particular measures because data are already available. The absence of data for areas of public concern like livability can result in a disconnect between how an agency tracks its progress and what external stakeholders care about. Agencies should continually assess what data gaps exist and, over time, make efforts to close those gaps and develop different measures that may be more desired. In the meantime, agencies can use qualitative measures for livability, or can attempt to measure some aspect of livability that serves as a proxy. These challenges should be debated both internally and externally to ensure the best possible list of measures is selected.

Like goals and objectives, measures also have desired characteristics (see Table 1-2). In addition to the characteristics in Table 1-2, the overall number of performance measures should be limited to the “vital few.” Measuring everything wastes limited resources because an agency does not have the capacity to incorporate each measure into decision-making. Choosing the “vital few” over the “trivial many” will keep redundant and unimportant measures from obscuring the critical information needed for effective decision-making.¹¹

¹⁰ Federal Highway Administration (FHWA). (2013). *Performance-Based Planning and Programming Guidebook* (FHWA Publication FHWA-HEP-13-041). Washington, DC. http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

¹¹ Strategic Highway Research Program 2 (SHRP2). (2009). *Performance Measurement Framework for Highway Capacity Decision Making* (SHRP2 Report S2-C02-RR). Washington, DC. http://onlinepubs.trb.org/onlinepubs/shrp2/shrp2_S2-C02-RR.pdf

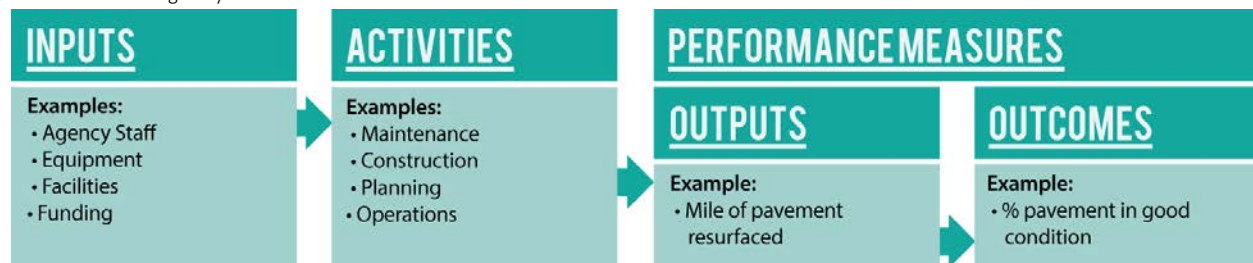
Table 1-2: Desired Characteristics of Performance Measures

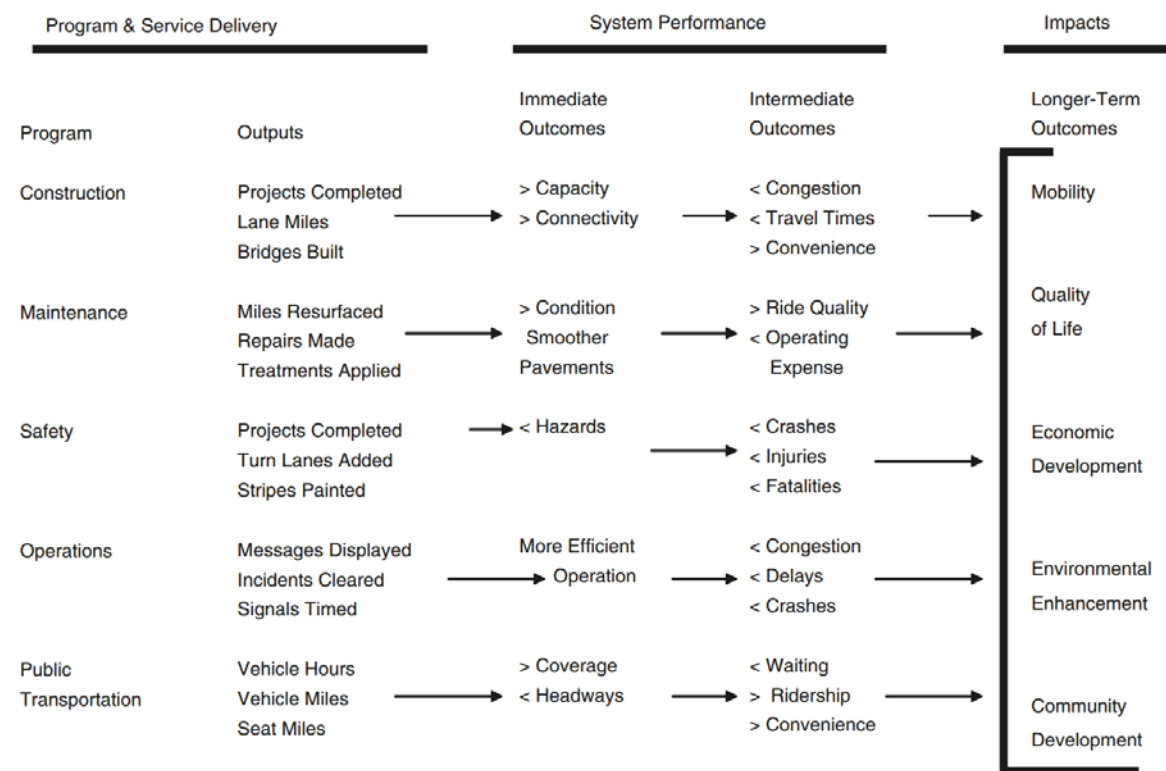
Source: National Cooperative Highway Research Program¹²

Desired Characteristic	Rationale/Purpose
Measurable with available tools/data	May require no additional cost for data collection
Forecastable	Enables data-driven target setting based on future conditions
Clear to the public and lawmakers	Allows performance story-telling to customers and policymakers
Agency has influence over result	Measures agency activities rather than impact of external factors

Figure 1-2: Logic Map for the Development of Performance Measures

Source: Federal Highway Administration


Figure 1-3: Logic Map for the Development of Performance Measures

Source: Performance Measures to Improve Transportation Systems¹³


¹² National Cooperative Highway Research Program (NCHRP). (2000). *A Guidebook for Performance-Based Transportation Planning* (NCHRP Report 446). Washington, DC: National Academy Press. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_446.pdf

¹³ From *Conference Proceedings 36: Performance Measures to Improve Transportation Systems*, Figure 1, p. 6. Copyright, National Academy of Sciences, Washington, D.C., 2005. Reproduced with permission of the Transportation Research Board.

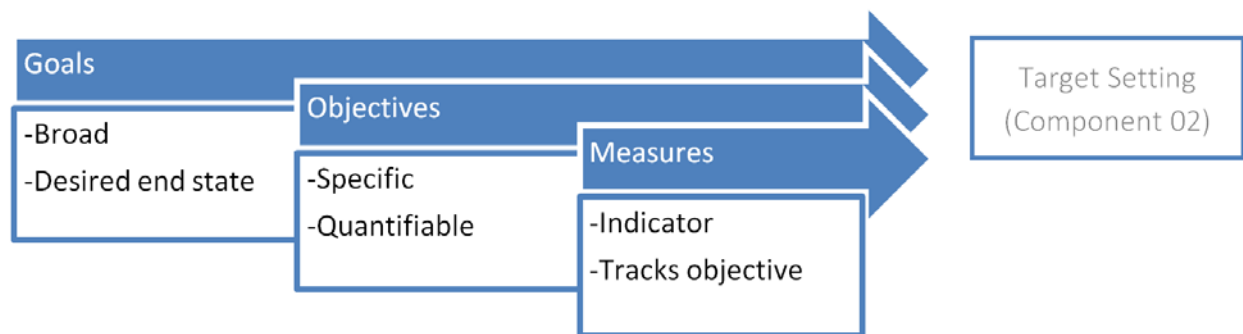
To assist with selecting performance measures, some agencies create a logic map. This can help make the connections between agency staff's day-to-day activities and desired performance results (see Figure 1-2 and Figure 1-3). Output measures assess the level of activity (e.g., miles of pavement resurfaced) and are useful for determining how efficient the agency's budget has been used. In contrast, outcome measures assess effectiveness of an activity. Rather than measure tons of salt applied (an output measure), an agency can measure number of ice-related crashes to gain an understanding of how salt application (an agency activity) impacted public safety through reducing, or not, crash rates due to winter road conditions. A logic map can also serve as documentation of the measure selection process, to promote transparency and repeatability. There are additional factors and challenges to consider when selecting performance measures, which are discussed in detail in the implementation steps below and in Chapter 4 of the Performance-Based Planning and Programming Guidebook.¹⁴

Outline of Implementation Steps

The establishment of the Strategic Direction is a progression from broad goals, to more specific objectives, to quantitative measures. The example in Figure 1-4 demonstrates the relationship between the different elements addressed in this chapter. An overarching rule of thumb to keep in mind when developing the Strategic Direction is that all three pieces (goals, objectives and measures) need to be defined in a manner that will guide investment decisions and reveal the effect those decisions have on results.¹⁵ Only then can an agency determine how to accomplish the desired outcomes and if those outcomes are in fact being achieved.

Figure 1-4: Formation of Goals and Objectives and Selection of Performance Measures

Source: Federal Highway Administration



Goals, objectives and performance measures are intricately linked, but are treated separately in implementation because each is individually important in creating a strategic direction for transportation performance management. Table 1-3 lists the implementation steps for each subcomponent that will be discussed further in this chapter.

Table 1-3: Strategic Direction Implementation Steps

Source: Federal Highway Administration

Goals and Objectives		Performance Measures	
1.	Understand the performance context to create a vision	1.	Inventory data, tools, and performance reports
2.	Build inclusive internal process to develop goals and objectives	2.	Engage internal staff and external stakeholders
3.	Engage external stakeholders to refine goals and objectives	3.	Evaluate potential measures

¹⁴ Federal Highway Administration (FHWA). (2013). *Performance-Based Planning and Programming Guidebook* (FHWA Publication FHWA-HEP-13-041). Washington, DC. http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

¹⁵ Federal Highway Administration (FHWA). (2013). *Performance-Based Planning and Programming Guidebook* (FHWA Publication FHWA-HEP-13-041). Washington, DC. http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

Goals and Objectives	Performance Measures
4. Evaluate and finalize goals and objectives	4. Establish governance process
5. Document the process	5. Document the process and measure details

CLARIFYING TERMINOLOGY

Table 1-4 presents definitions for the strategic direction terms used in this guidebook. A full list of common TPM terminology and definitions is included in Appendix C: Glossary.

Table 1-4: Strategic Direction: Defining Common TPM Terminology

Source: Federal Highway Administration

Common Terms	Definition	Example
Goal	A broad statement of a desired end condition or outcome; a unique piece of the agency's vision.	A safe transportation system.
Metric	An indicator of performance or condition.	The annual number of fatalities.
Mission	Statement that reflects the core functional purpose of an agency.	Plan, build, operate and maintain a safe, accessible, efficient and reliable multimodal transportation system that connects people to destinations and markets throughout the state, regionally and around the world. ¹⁶
Objective	A specific, measurable statement that supports achievement of a goal.	Reduce the number of motor vehicle fatalities.
Outcome	Results or impacts of a particular activity that are of most interest to system users. Focus of subcomponent 5.1 System Level Monitoring and Adjustment.	Transit travel time reliability, fatality rate, percent of assets within useful life.
Output	Quantity of activity delivered through a project or program. Focus of subcomponent 5.2 Program/Project Level Monitoring and Adjustment.	Miles of pavement repaved, miles of new guardrail put into place, the number of bridges rehabilitated, the number of new buses purchased.
Performance Measure	Performance measures are based on a metric that is used to track progress toward goals, objectives, and achievement of established targets. They should be manageable, sustainable, and based on collaboration with partners. Measures provide an effective basis for evaluating strategies for performance improvement.	Transit passenger trips per revenue hour.

¹⁶ Vision and mission examples from: Minnesota Department of Transportation. <http://www.dot.state.mn.us/vision/>

Common Terms	Definition	Example
Target	Level of performance that is desired to be achieved within a specific time frame.	Two % reduction in fatality rate in the next calendar year.
Transportation Performance Management	A strategic approach that uses system information to make investment and policy decision to achieve performance goals.	Determining what results are to be pursued and using information from past performance levels and forecasted conditions to guide investments.
Vision Statement	An overarching statement of desired outcomes that is concisely written, but broad in scope; a vision statement is intended to be compelling and inspiring.	Minnesota's multimodal transportation system maximizes the health of people, the environment, and our economy. ¹⁷
Visioning	The process of setting or confirming goals and objectives.	Envisioning the characteristics of a transit agency by providing equitable, efficient, and dependable service.

RELATIONSHIP TO TPM COMPONENTS

The ten TPM components are interconnected and often interdependent. Table 1-5 summarizes how each of the nine other components relate to the strategic direction component.

Table 1-5: Strategic Direction Relationship to TPM Components

Source: Federal Highway Administration

Component	Summary Definition	Relationship to the Strategic Direction
02. Target Setting	The use of baseline data, information on possible strategies, resource constraints and forecasting tools to collaboratively establish targets.	Targets turn goals, objectives and measures identified in the strategic direction into statements of success to promote accountability.
03. Performance-Based Planning	Use of a strategic direction to drive development and documentation of agency strategies and priorities in the long-range transportation plan and other plans.	Strategies identified in the planning process define how an agency will achieve goals and objectives. Performance measures provide the means to evaluate/prioritize strategies.
04. Performance-Based Programming	Allocation of resources to projects to achieve strategic goals, objectives and performance targets. Clear linkages established between investments made and their expected performance outputs and outcomes.	The selection of projects is guided by the goals and objectives and measures defined in the Strategic Direction.
05. Monitoring and Adjustment	Processes to track and evaluate actions taken and outcomes achieved that establish a feedback loop to adjust planning, programming, and target setting decisions. Provides key insight into the efficacy of investments.	Information uncovered during the monitoring and adjustment phase helps agencies assess progress toward the goals and objectives defined under the Strategic Direction.

¹⁷ Vision and mission examples from: Minnesota Department of Transportation. <http://www.dot.state.mn.us/vision/>

Component	Summary Definition	Relationship to the Strategic Direction
06. Reporting and Communication	Products, techniques and processes to communicate performance information to different audiences for maximum impact.	The Strategic Direction is the structure by which the performance story is told, connecting desired and actual results.
A. TPM Organization and Culture	Institutionalization of a TPM culture within the organization, as evidenced by leadership support, employee buy-in, and embedded organizational structures and processes that support TPM.	The Strategic Direction provides a unifying and overarching structure to guide daily activities. The collaborative approach to setting agency goals and objectives builds staff support for the agency's purpose and clarifies how individual employees play a role.
B. External Collaboration and Coordination	Established processes to collaborate and coordinate with agency partners and stakeholders on planning/ visioning, target setting, programming, data sharing, and reporting.	External stakeholder input in creation of the Strategic Direction is essential to clarify what is expected from the agency and to ensure resulting goals, objectives and measures reflect what the public cares about and align with regional priorities.
C. Data Management	Established processes to ensure data quality and accessibility, and to maximize efficiency of data acquisition and integration for TPM.	The Strategic Direction is based on performance condition information across the range of performance areas which in turn is depending on quality data.
D. Data Usability and Analysis	Existence of useful and valuable data sets and analysis capabilities, provided in usable, convenient forms to support TPM.	The availability of data may determine what performance measures are selected within the Strategic Direction, and/or spur new data acquisition.

REGULATORY RESOURCES

This Guidebook is intended to assist agencies with implementing transportation performance management in a general sense and not to provide guidance on compliance and fulfillment of Federal regulations. However, it is important to consider legislative requirements and regulations when using the Guidebook. In many cases, use of this Guidebook will bring an agency in alignment with Federal requirements; however, the following sources should be considered the authority on such requirements:

Federal Highway Administration

- Transportation Performance Management: http://www.fhwa.dot.gov/tpm/links_fhwa.cfm
- Fact Sheets on Fixing America's Surface Transportation (FAST) Act: <https://www.fhwa.dot.gov/fastact/factsheets/>
- Fact Sheets on Moving Ahead for Progress in the 21st Century (MAP-21): <https://www.fhwa.dot.gov/map21/factsheets/>
- Resources on MAP-21 Rulemaking: <https://www.fhwa.dot.gov/tpm/rule.cfm>

Federal Transit Administration

- Fact Sheets on FAST Act: <https://www.transit.dot.gov/funding/grants/fta-program-fact-sheets-under-fast-act>
- Resources on MAP-21: <https://www.transit.dot.gov/regulations-and-guidance/legislation/map-21/map-21-program-fact-sheets>

IMPLEMENTATION STEPS

1.1 GOALS AND OBJECTIVES

The following section outlines the steps agencies can follow to develop a set of goals and objectives that establish an agency's strategic direction.

1. Understand the performance context to create a vision
2. Build inclusive internal process to develop goals and objectives
3. Engage external stakeholders to refine goals and objectives
4. Evaluate and finalize goals and objectives
5. Document the process

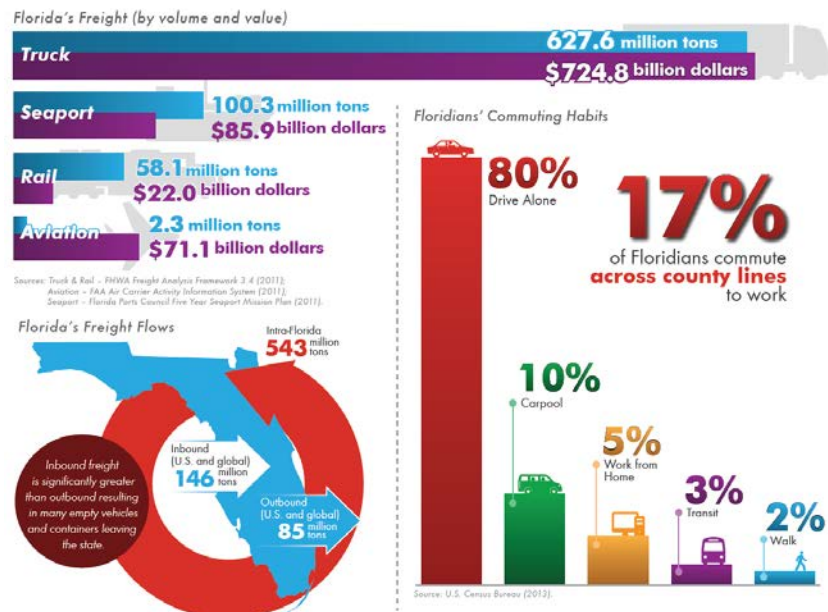
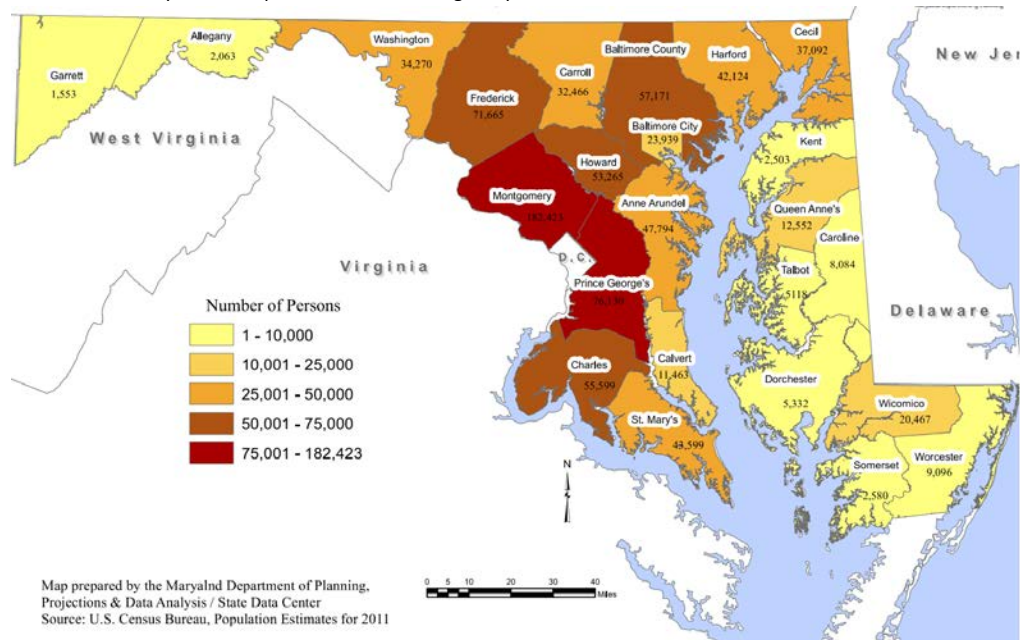
"The Bay Area Long Range Transportation Plan has shifted away from traditional goals like 'system preservation' and now fully reflects how transportation agencies can help the region's citizens fulfill their priorities like 'healthy and safe communities.'"

- Dave Vautin, MTC

STEP 1.1.1	Understand the performance context to create a vision
Description	<p>Developing a vision is a useful and productive way for an agency to gain an understanding of the performance context as well as generate buy-in among staff before moving on to goal setting. Before beginning the goal-setting process, staff should assess the current context and have an understanding of how the transportation system is currently performing. This knowledge will help to frame the discussion about long-term transportation trends and needs for the future. Without context, an agency could easily select goals that are irrelevant, unimportant, or already well-addressed, making each subsequent performance-based planning and programming (PBPP) step less effective. A wide array of information will help establish an agency's performance context, including historical and forecast changes in population and employment; current usage by mode; forecasts of expected changes in travel demand; and estimates of current and future transportation system conditions and performance.</p> <p>Items to keep in mind when developing a vision:</p> <ul style="list-style-type: none"> • Examine current performance information to identify high and low performing areas • Obtain understanding of what data exists to track goal/objective achievement • Consider how much control the agency has over a particular outcome • Identify risks that could prevent attainment of goals and objectives • Consider regulatory requirements affecting performance measures
Examples	<p>Assessment of Existing and Future Demographics, Economics, Climate, Travel Usage and Demand</p> <p>Understanding historical demographic and economic trends and forecasts help determine the context in which goals and objectives will be developed. Therefore, it is important to incorporate these external factors into the goal/objective-setting conversations (e.g., employment, economic, and industry trends and forecasts; population, households trends and projections, age group, and location). Agencies have also begun to focus on climate forecasts to be better prepared for an increase in frequency and severity of weather incidents. Obtaining this information will likely require partnerships with partners and stakeholders. The following graphics are examples of how agencies have summarized this important information. Figure 1-5 visually illustrates freight movement and commuting habits in Florida. Figure 1-6 displays projected average annual growth for the state of Maryland, by county.</p>

STEP 1.1.1

Understand the performance context to create a vision

Figure 1-5: Florida Freight Movements and Commuting HabitsSource: Florida Transportation Plan Vision Element¹⁸**Figure 1-6: State of Maryland Projected Population Growth through 2030**Source: 2035 Maryland Transportation Plan: Moving Maryland Forward¹⁹¹⁸ Florida Department of Transportation. (2015). Florida Transportation Plan Element. Tallahassee, FL.http://floridatransportationplan.com/pdf/FDOT_FTP-SIS_VisionElement.pdf¹⁹ Maryland Department of Transportation. (January 2013). Roundtable Presentation: 2035 Maryland Transportation Plan: Moving Maryland Forward. Baltimore, MD.http://www.mdot.maryland.gov/Office_of_Planning_and_Capital_Programming/Maryland_Transportation_Plan/Documents/MTP_Roundtable_Workshop_Presentation_Final.pdf

STEP 1.1.1

Understand the performance context to create a vision

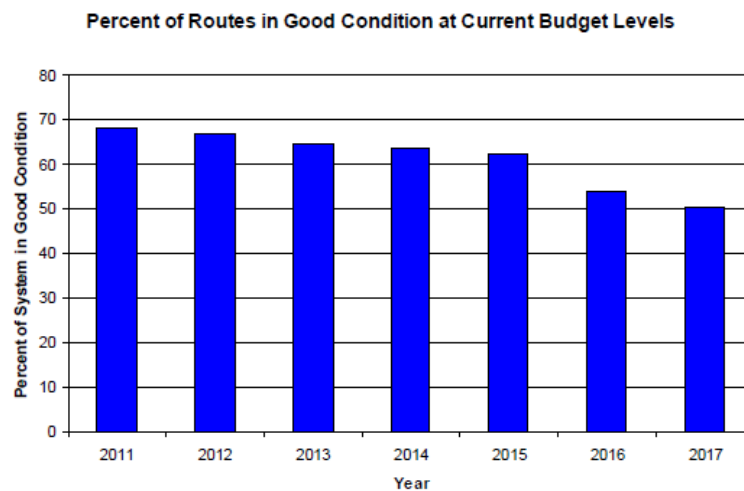
Inventory and Summary of Extent, Condition and Performance of Existing Transportation System

In order to address the external forces shaping transportation in a region, agencies should have a comprehensive understanding of the multimodal transportation system. A comprehensive inventory of existing infrastructure, current condition, and project performance highlight what aspect(s) of their system should be the focus of strategic goals and objectives.

The NCDOT 2040 Challenges and Opportunities Report²⁰ highlights the need to preserve the health of the state's infrastructure to address mobility and logistic challenges. The assessments of the state highway system condition confirmed that pavement was in need of serious attention. The projection suggests that by 2017, the percent of pavement miles in good condition would drop to 50 percent. The current performance condition and dire projections helped focus the agency's strategic direction on system preservation.

Figure 1-7: Pavement Performance Based on Current Budget in North Carolina

Source: North Carolina Report on the Condition of the State Highway System (2010)²¹

**Linkages to Other TPM Components**

Component B: External Collaboration and Coordination

Component C: Data Management

Component D: Data Usability and Analysis

(See TPM Framework)

STEP 1.1.2

Build inclusive internal process to develop goals and objectives

Description

With an understanding of the performance context, staff involved up to this point should begin developing an inclusive process to set goals and objectives. This process will inherently build buy-in among others within the agency as long as it is truly inclusive. The shift to a performance-based

²⁰ North Carolina Department of Transportation. (2011). 2040 Plan Challenges and Opportunities, September 2011. https://www.ncdot.gov/download/performance/2040_challengeopp.pdf

²¹ North Carolina Department of Transportation Division of Highways. (2010). 2010 Report on the Condition of the State Highway System. Raleigh, NC. http://www.ncleg.net/documentsites/committees/JLTOC/2011-12_Biennium/Archive/2010-12-14/Presentations/Maintenance_Funding_Needs_Condition_of_Highway_System_DOT_2010_12_10.pdf

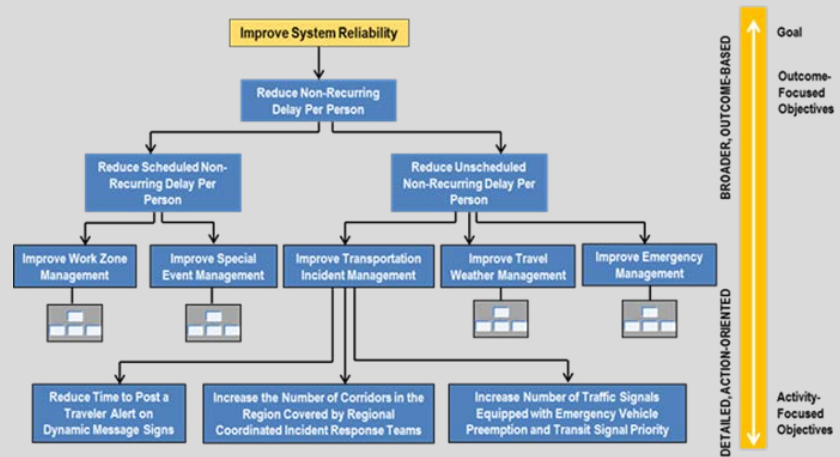
STEP 1.1.2	Build inclusive internal process to develop goals and objectives										
	<p>focus affects the type and amount of work expected of staff, and therefore it is critical to make them aware of such changes from the beginning to ensure a smooth integration of new processes. This is also a time when staff should be informed of the benefits of PBPP and how it will improve agency outcomes. Lack of support across the agency can be a deal breaker, either preventing the process from going forward at all or making the process an empty exercise that will not garner any process changes.</p> <p>Important actions to take in building internal buy-in:</p> <ul style="list-style-type: none"> • Identify who is involved internally: promote intra-agency involvement that will enable collaboration between typically isolated silos • Ensure inclusivity: support by staff stems from a feeling of inclusion and ownership • Decide who will manage the process • Choose (or be aware of) who will approve the final goals • Ground goals in agency priorities/focus areas: look at past goals and planning documents as a starting point • Engage in a dialogue about the relative priority of different goals • Ensure senior management team uses goal/objective language to reinforce employees' contribution to agency success and highlight the agency's role in broader societal concerns 										
Examples	<p>Inclusive goal and objective development can take many forms:</p> <table border="1"> <tr> <td data-bbox="418 1077 581 1192">Web-based engagement tool</td><td data-bbox="589 1077 1442 1192">Staff can write suggestions and provide feedback to draft goals and objectives using an online portal. Executives would review comments and adjust draft list accordingly.</td></tr> <tr> <td data-bbox="418 1203 581 1339">Workshop/facilitated discussion</td><td data-bbox="589 1203 1442 1339">Held with various groups across the agency and modeled from external workshops can be used to gather feedback from the public and other stakeholders. Facilitating workshops enable staff to have input in an interactive and engaging way.</td></tr> <tr> <td data-bbox="418 1350 581 1507">SWOT analysis</td><td data-bbox="589 1350 1442 1507">A way to assess Strengths, Weaknesses, Opportunities, and Threats of potential goals and objectives. With this method, there is ample opportunity for a wide range of topics to be included in the discussion, such as influence of the agency over outcomes and other topics identified in step one.</td></tr> <tr> <td data-bbox="418 1518 581 1707">Tour of preliminary goals</td><td data-bbox="589 1518 1442 1707">A small group within the agency can develop a draft list of goals and objectives for review by the staff at large. The small group may provide a webinar or short seminar to orient other staff before gathering feedback. Feedback from the broader staff can be used to evaluate the draft goals and objectives to create the final list.</td></tr> <tr> <td data-bbox="418 1717 581 1810">Objective Tree</td><td data-bbox="589 1717 1442 1810">A transportation agency can select which objectives in the objectives tree are most important to be included in the LRTP or other planning documents. This</td></tr> </table>	Web-based engagement tool	Staff can write suggestions and provide feedback to draft goals and objectives using an online portal. Executives would review comments and adjust draft list accordingly.	Workshop/facilitated discussion	Held with various groups across the agency and modeled from external workshops can be used to gather feedback from the public and other stakeholders. Facilitating workshops enable staff to have input in an interactive and engaging way.	SWOT analysis	A way to assess Strengths, Weaknesses, Opportunities, and Threats of potential goals and objectives. With this method, there is ample opportunity for a wide range of topics to be included in the discussion, such as influence of the agency over outcomes and other topics identified in step one.	Tour of preliminary goals	A small group within the agency can develop a draft list of goals and objectives for review by the staff at large. The small group may provide a webinar or short seminar to orient other staff before gathering feedback. Feedback from the broader staff can be used to evaluate the draft goals and objectives to create the final list.	Objective Tree	A transportation agency can select which objectives in the objectives tree are most important to be included in the LRTP or other planning documents. This
Web-based engagement tool	Staff can write suggestions and provide feedback to draft goals and objectives using an online portal. Executives would review comments and adjust draft list accordingly.										
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Objective Tree	A transportation agency can select which objectives in the objectives tree are most important to be included in the LRTP or other planning documents. This										

STEP 1.1.2 Build inclusive internal process to develop goals and objectives

can be seen below or viewed in the Performance Based Planning and Programming Guidebook.²²

Figure 1-8: FHWA Objective Development

Source: Advancing Metropolitan Planning for Operations: The Building Blocks of a Model Transportation Plan Incorporating Operations²³



Linkages to Other TPM Components

Component A: Organization and Culture

(See TPM Framework)

STEP 1.1.3 Engage external stakeholders to refine goals and objectives

Description

Once internal buy-in is solidified and staff understands their role in the process, those outside the agency must be asked for their input. These groups include the public at large as well as other agencies and organizations; identifying which organizations and groups should be involved sets the stage for obtaining their input, which is critical to keeping the agency relevant.

- How do the agency's activities support regional priorities?
- How do the initial goals and objectives drafted through internal engagement align with to external goals?

These questions can only be answered if asked to a broad and diverse cross-section of the community. Stakeholder engagement is also an opportunity for the agency to clarify the linkage between core agency functions and broader societal concerns and discuss the relative priority of different goals. Input from stakeholders should be used to refine goals and objectives so that they resonate outside of the agency. Given that goals determined within the Strategic Direction process will guide all agency work, effective engagement of external stakeholders is a key step.

In addition to making the goal-setting process more relevant, external engagement is also required under 23 USC § 134 (i)(6) and 23 USC § 135 (f)(3), as well as 49 USC § 5303 (i)(6) and 49 USC § 5304 (f)(3) as part of transportation plan development. Any interested parties should

²² Federal Highway Administration (FHWA). (2013). *Performance-Based Planning and Programming Guidebook* (FHWA Publication FHWA-HEP-13-041). Washington, DC. http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

²³ Federal Highway Administration and Federal Transit Administration. (2010). *Advancing Metropolitan Planning for Operations: The Building Blocks of a Model Transportation Plan Incorporating Operations – A Desk Reference*. <http://www.ops.fhwa.dot.gov/publications/fhwahop10027/fhwahop10027.pdf>

STEP 1.1.3	Engage external stakeholders to refine goals and objectives
	<p>be included, as well as the general public, transportation providers, and representatives of system users.²⁴ Other agencies and governments, including Federal and Tribal, must be consulted as well. Metropolitan Planning Organizations (MPOs) developing the Metropolitan Transportation Plan must consult, as appropriate, “State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation.”²⁵ States developing the LRTP must consult with MPOs, regional transportation planning organizations (RTPOs), tribal governments, and applicable Federal, state and local agencies.²⁶</p> <p>Items to keep in mind:</p> <ul style="list-style-type: none"> • Identify who is to be involved externally • Connect draft goals and objectives to regional priorities (ask stakeholders: “what does X goal mean to you?”) • Clarify the linkage between core agency functions and broader societal concerns • Consider National Goals and Planning Factors when discussing priorities • Discuss the relative priority of different goals • Refine goals and objectives so that the language resonates with stakeholders
Examples	<p>Binghamton Scenario Planning²⁷</p> <p>Spurred by a declining population and the need to update the LRTP, the Binghamton Metropolitan Transportation Study (BMTS), the MPO for the Binghamton, NY region, undertook an extensive external engagement process to identify community goals. Their first step was to create a Community Vision Team that included a representative cross-section of the community:</p> <ul style="list-style-type: none"> • Students and administrators from Binghamton University • Human service providers • Elected officials • Business and economic development representatives • BMTS staff <p>Facilitators presented the team with summaries of goals from local planning and economic development documents to discuss in a series of meetings. While there were some challenges in keeping all members of the team continuously engaged, the biggest challenge was convincing local elected officials and planning staff from different agencies to participate in a cooperative dialogue.</p> <p>The previous LRTP lacked a clear community vision, but the updated plan reflects the goals proposed by the Community Vision Team, emphasizing how external engagement can link community goals to agency planning. In a reminder that internal buy-in is also critical, those involved noted that success hinged on the support of the MPO leadership who approved a departure from traditional methodology.</p>

²⁴ 23 USC § 134 (i)(6) and 23 USC § 135 (f)(3)

²⁵ 23 USC § 134 (i)(5)

²⁶ 23 USC § 135 (f)(2)

²⁷ FHWA PlanWorks Application. *Binghamton Metropolitan Transportation Study: Scenario Planning Yields Community Vision of Revitalized Urban Centers*. <https://fhwaapps.fhwa.dot.gov/planworks/Reference/CaseStudy/Show/23>.

STEP 1.1.3	Engage external stakeholders to refine goals and objectives
	<p>MTC PlanBayArea 2040</p> <p>The Metropolitan Transportation Commission, the MPO for the San Francisco Bay Area, is currently updating its Regional Transportation Plan (RTP), known as Plan Bay Area 2040. To engage external stakeholders, MTC assembled a Performance Working Group comprised of representatives from cities; counties; transit agencies; congestion management agencies; the state; economic, equity, and environmental organizations; and members of the Policy Advisory Committee, made up of citizen representatives. This comprehensive group was engaged to develop goals and performance targets for the plan update.</p> <p>To inform the working group, staff led public workshops during which goals from the original Plan Bay Area (adopted in 2013) were presented as a starting point; attendees voted for their top three most important. Once voting was complete, individuals were asked what goals were missing and wrote their ideas on sticky notes to assemble on the wall. This low-tech word cloud was assembled into the digital version shown here, with word size indicating the relative number of comments posted by participants.²⁸</p> <p>Figure 1-9: MTC Collaborative Goal Setting</p> <p>Source: Plan Bay Area 2040 Spring 2015 Public Engagement Report²⁹</p> <p>Water was a top goal area because of the ongoing drought. MTC staff noted that social equity, in terms of affordable housing, was elevated as a major concern in this RTP cycle, while economic vitality was a lower priority because of the strength of the area’s economy. This engagement process demonstrated how important it is for an agency to engage stakeholders on an ongoing basis because priorities can and do shift based on changing conditions. Staff also noted that stakeholder understanding of the impact of this process has increased each cycle; selection of goals can be contentious because stakeholders know that plan goals do in fact determine which projects are funded and how discretionary funding is allocated.</p>

²⁸ Metropolitan Transportation Commission and Association of Bay Area Governments. (2015). Plan Bay Area 2040 Spring 2015 Public Engagement Report. <http://planbayarea.org/file10232.html>

²⁹ Metropolitan Transportation Commission and Association of Bay Area Governments. (2015). Plan Bay Area 2040 Spring 2015 Public Engagement Report. <http://planbayarea.org/file10232.html>

STEP 1.1.3	Engage external stakeholders to refine goals and objectives
Linkages to Other TPM Components	<p>Component B: External Collaboration and Coordination (See TPM Framework)</p> <p>Component 03: Performance-Based Planning</p>
STEP 1.1.4	Evaluate and finalize goals and objectives
Description	<p>After a set of goals and objectives has been assembled, the list must be adjusted so each goal reflects the desired characteristics discussed in the introduction to this chapter. If the external stakeholder engagement step was done well, the goals will likely already be outcome-oriented and relatable to the public.</p> <p>External engagement will also align initial goals with areas of key public concern. While these two characteristics may already be reflected in the agency’s initial goals, the National Planning Factors and Goals should also be considered. In addition, the agency should clarify the relative priority of each goal to set a clear strategic direction. As a result of this process, performance measure will start to become clearer.</p> <p>As referenced in the introduction of this component, agencies may opt to use S.M.A.R.T. objectives. These objectives align with the principles listed here:</p> <ul style="list-style-type: none"> • Specific: The objective includes enough specificity to allow formation of strategies that will enable attainment without dictating said strategies. • Measurable: The objective is quantifiable. • Agreed: The objective is valid and important, as judged by stakeholders. • Realistic: The objective can be attained with available resources and within particular political, economic, and other contexts. • Time-Bound: The objective identifies a timeframe for attainment. <p>Refer to the Performance-Based Planning and Programming Guidebook³⁰ for more information about S.M.A.R.T. objectives.</p> <p>Desirable characteristics of goals and objectives (see Table 1-1):</p> <ul style="list-style-type: none"> • Attributable to agency • Outcome-oriented • Supported by available data, or by data that can be easily acquired or collected • Operational • Reflects Planning Factors, National Goals • Limited in number • Reflects broad societal concerns (goals only) • Specific (objectives only)
Examples	<p>Final goals and objectives will be unique to each agency but below is an example of how Champaign Urbana Urbanized Area Transportation Study (CUUATS) aligned its objectives with national goals, Illinois State Transportation Policy Factors, and the updated LRTP title Sustainable Choices 2040.</p>

³⁰ Federal Highway Administration (FHWA). (2013). *Performance-Based Planning and Programming Guidebook* (FHWA Publication FHWA-HEP-13-041). Washington, DC. http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

STEP 1.1.4

Evaluate and finalize goals and objectives

Goal: Increase accessibility and mobility of people and freight**Table 1-6: CUUATS S.M.A.R.T. Goals Addressing Accessibility**Source: Champaign Urbana Urbanized Area Transportation Study³¹

Draft Objectives	Elements of S.M.A.R.T. Objectives
Develop pedestrian plans for all jurisdictions within the urbanized area by 2020.	Defining “by 2020” for when the objective is completed supports the time-bound requirement of S.M.A.R.T. objectives.
Develop snow removal ordinances, programs, and policies for all jurisdictions to provide year-round access to sidewalks, bike paths, and transit stops	Providing particular examples of how an objective is completed, such as “snow removal on sidewalks, bike paths” supports the specific feature of S.M.A.R.T.

Goal: Transportation for underserved populations such as elderly, low-income, and persons with disabilities**Table 1-7: CUUATS S.M.A.R.T. Goals for Underserved Demographics**Source: Champaign Urbana Urbanized Area Transportation Study³²

Draft Objectives	Elements of S.M.A.R.T. Objectives
Upgrade existing sidewalk network within the urbanized area by 10% to be ADA-compliant	Identifying a 10% increase affirms the specific and realistic characteristics of S.M.A.R.T. objectives.
Improve below-average scores in five planning areas identified by the Local Accessibility and Mobility Analysis	Defining five planning areas can easily be assessed to fulfill the measurement feature of S.M.A.R.T.

Goal: Address issues of equity as well as segregation in diverse communities in the area of transportation**Table 1-8: CUUATS S.M.A.R.T. Goals for Addressing Social Inequity and Segregation in Diverse Communities**Source: Champaign Urbana Urbanized Area Transportation Study³³

Draft Objectives	Elements of S.M.A.R.T. Objectives
Provide at least one opportunity for public input for each new transportation project	Providing opportunity for public input accomplishes the agreement aspect of a S.M.A.R.T. objective.
Make information materials on transportation modes, facilities, and/or benefits available in at least one language besides English	

³¹ Champaign County Regional Planning Commission. (2013). Champaign Urbana Urbanized Area Transportation Study - 2040 Vision - Goals, Objectives, & Performance Measures. Urbana, IL. http://lrtp.cuuats.org/wp-content/uploads/sites/2/2016/03/LRTP-Main_011615_reduced_9-Goals-etc.pdf

³² Champaign County Regional Planning Commission. (2013). Champaign Urbana Urbanized Area Transportation Study - 2040 Vision - Goals, Objectives, & Performance Measures. Urbana, IL. http://lrtp.cuuats.org/wp-content/uploads/sites/2/2016/03/LRTP-Main_011615_reduced_9-Goals-etc.pdf

³³ Champaign County Regional Planning Commission. (2013). Champaign Urbana Urbanized Area Transportation Study - 2040 Vision - Goals, Objectives, & Performance Measures. Urbana, IL. http://lrtp.cuuats.org/wp-content/uploads/sites/2/2016/03/LRTP-Main_011615_reduced_9-Goals-etc.pdf

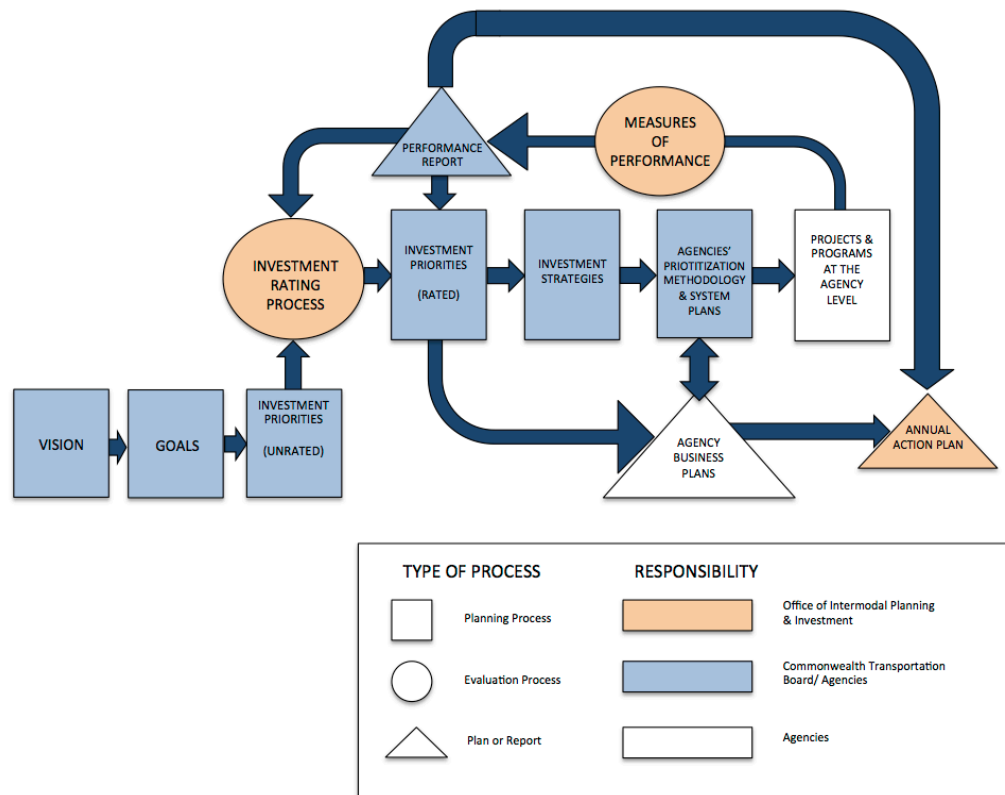
STEP 1.1.4	Evaluate and finalize goals and objectives
Linkages to Other TPM Components	Component 06: Reporting and Communication (See TPM Framework) Component B: External Collaboration and Coordination
STEP 1.1.5	Document the process
Description	<p>Because the goals and objectives selected through this process will drive agency priorities, the selected set of goals and objectives should be reevaluated on a regular basis to ensure that the agency is maintaining focus on the most important areas according to both internal staff and external stakeholders. To make the process simpler and easier in the future, information about how each step was completed the first time around should be documented in detail. It is important to distribute this documentation internally and externally as appropriate to promote transparency and accountability as well as build internal buy-in among staff.</p> <p>While there is no Federal requirement to document these steps, some of the steps themselves are required by Federal law, such as external outreach/engagement. In addition to making the external engagement process easier the next time goals and objectives are reevaluated, it may make sense to document how this step was undertaken to make it clear that the Federal requirement to engage external stakeholders was in fact met.</p> <p>Documentation should:</p> <ul style="list-style-type: none"> • Outline coordination of goals across planning documents • Explain how goals and objectives will be used in planning, programming, and employee performance evaluations • Describe who fulfilled roles and responsibilities throughout the process • Detail how each step was undertaken, and the result of each step
Examples	<p>Virginia VTrans2035 Update</p> <p>The update to VTrans2035 seeks to link projects to VTrans Goals by describing how goals will permeate through the later planning and programming processes. As measurable statements, Investment Priorities are analogous to Objectives. In each cycle, Investment Priorities are rated based on performance measures (which indicate need) and cost-effectiveness. Investment Strategies are key tactics that modal agencies can implement through plans and programs to achieve Investment Priorities and therefore drive attainment of Goals. Specific projects from state and regional plans are linked to Goals through the succession of Investment Priorities and Investment Strategies. The diagram below shows how the VTrans2035 LRTP documents how Goals impact the planning and programming processes.³⁴</p> <div data-bbox="956 1289 1395 1577" style="background-color: #e6f2ff; padding: 10px; border: 1px solid #add8e6;"> <p>“Agency processes such as needs evaluations, performance rating, and project prioritization can be shaped in terms that relate directly to VTrans. This consistency... promotes the alignment among policies, plans, and funding programs that is necessary to gauge accurately the effects of transportation decisions on system performance.”</p> </div> <p>Source: Commonwealth Transportation Board. (February 2013). <i>VTrans2035 Update: Executive Summary</i>.</p>

³⁴ Commonwealth Transportation Board. (2013). 2035 Update, VTrans: An Update to Virginia’s Statewide Multimodal Long-Range Transportation Policy Plan. http://www.vtrans.org/resources/VTrans2035Update_Final_Draft_with_Appendices.pdf

STEP 1.1.5

Document the process

Figure 1-10: VTrans2035 Investment Priority Planning Process

Source: Adapted from 2035 Update, VTrans³⁵

Vermont Agency of Transportation (VTrans)

VTrans describes both external and internal engagement in developing its Long Range Transportation Business Plan. A public opinion survey was commissioned to determine public priorities for projects, services, and other agency outputs and the results were compared to a previous survey conducted in 2000. In addition to external input, the Vtrans has an Internal Working Group that comments on draft objective language. Final objectives provide the framework by which planning and programming strategies will be developed. When drafting goal statements, Executive leadership obtained input from VTrans staff and solicited input for draft objective language. The current LRTBP identifies multiple policy options for each objective based on a variety of future scenarios, setting it apart from past plans and making it clear that the process is dynamic.³⁶

Linkages to Other TPM Components

Component A: Organization and Culture
Component B: External Collaboration

(See TPM Framework)

³⁵ Commonwealth Transportation Board. (2013). 2035 Update, VTrans: An Update to Virginia's Statewide Multimodal Long-Range Transportation Policy Plan. http://www.vtrans.org/resources/VTrans2035Update_Final_Draft_with_Appendices.pdf

³⁶ Vermont Long Range Transportation Business Plan. June 7, 2016. <http://vtransplanning.vermont.gov/reports/lrtbp>

1.2 PERFORMANCE MEASURES

From the goals and objectives approved in subcomponent 1.1, the agency chooses performance measures to track progress toward attainment. Another important result of the performance measure selection process is the establishment of a governance process that can be used to assess, modify, and add measures in the future, allowing an agency to continuously refine its transportation performance management program.

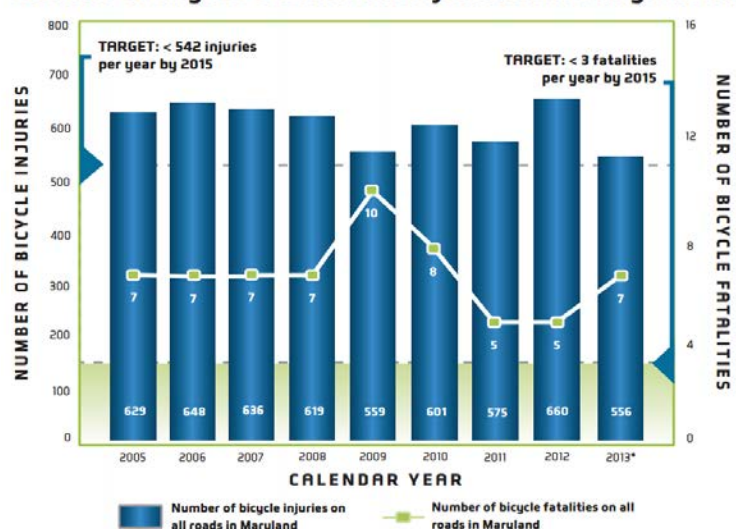
1. Inventory data, tools, and performance reports
2. Engage internal staff and external stakeholders
3. Evaluate potential measures
4. Establish governance process
5. Document the process and measure details

“Why do we look at performance information? It is pretty simple. We are investing money in our transportation system and want to know what we get for it. Performance measures let us understand the relationship between investments and results.”

- Camelia Ravanbakht, Hampton Roads Transportation Planning Organization

STEP 1.2.1	Inventory data, tools, and performance reports
Description	<p>Similar to step 1.1.1, some groundwork should be done to understand where the agency stands in terms of data, tools, and performance reports. Selection of measures will depend on whether the agency has existing data to support the measure, or whether there is capacity to collect or acquire new data. However, the existence of data does not guarantee its usability for this new purpose. Many agencies have a wealth of data, but do not have systems in place to create usable information from it. Knowing the state of data will help define the scope of the measure selection process; agencies with well-established systems that allow for data usability can choose measures directly related to those data streams. Agencies with less well-developed data management should scale back their measure selection process to make it more manageable. It may make more sense to select just a few measures with the data that is currently usable and expand at a later date once more data are available. However, some agencies may choose to use this measure selection process as an impetus for tackling problems associated with data, whether it is a lack of it, or a lack of usability.</p> <p>It is also important that forecasting tools exist related to the data and measures. Without a method to forecast future conditions, it will be very difficult to complete Target Setting (Component 02) processes.</p> <p>Finally, performance reports contain potential measures that are proven to have all the necessary elements discussed above. While it will be important to evaluate them for usefulness under the goal areas selected in subcomponent 1.1, they provide a starting point for discussion. Performance reports will also support the target-setting process (Component 02) by providing information on current performance levels.</p> <ul style="list-style-type: none"> • Identify and document data owner and source • Consider whether data are useful and reliable in its current form • Contemplate tackling data usability and reliability issues • Inventory forecasting tools • Use performance reports as discussion starter

STEP 1.2.1	Inventory data, tools, and performance reports
Examples	<p>DDOT Measure Development</p> <p>Prompted by language in the comprehensive plan, the District of Columbia Department of Transportation attempted to develop a new measure termed person through-put. The comprehensive plan tasked DDOT to reduce reliance on level of service as a primary evaluation tool; the organization desired a broader set of measures that would capture more information when measuring the movement of people. It was not intended that level of service be eliminated, but rather additional measures would be included alongside.</p> <p>Person through-put proved difficult to develop. The agency struggled with its definition and whether it would be useful as developed. The measure relied on travel modeling, which introduced issues of data quality and accuracy of prediction outputs from coarse tools such as a travel demand model. Staff produced more accurate predictions using a microsimulation, but concluded that it would be prohibitively expensive for regular use in planning.</p> <p>When applied to a study for an exclusive transit lane on Georgia Ave, the person through-put measure did not clearly indicate whether improved transit would move enough people to compensate for those in vehicles displaced by the transit lane.</p> <p>DDOT staff learned valuable lessons that other agencies should consider when beginning the measure selection process.</p> <ul style="list-style-type: none"> • Developing new measures takes significant thought. • Many staff began the process expecting it to be relatively straightforward, but found it to be complex and difficult. • Existing measures like level of service are used for a reason – they are easy. • Linkages between data, tools, and measures are not necessarily clear. <p>For agencies starting down the path of transportation performance management for the first time, it may make sense to use measures that are well-established so that time will be spent on measures known to be easily usable. However, it is important that agencies critically analyze the limitations of existing measures.</p>
Linkages to Other TPM Components	<p>Component C: Data Management</p> <p>Component D: Data Usability and Analysis (See TPM Framework)</p> <p>Component 06: Reporting and Communication</p>
STEP 1.2.2	Engage internal staff and external stakeholders
Description	<p>Once the agency understands which data are usable and what current performance levels are, the process of engagement can begin. Both agency staff and external groups should be consulted when developing measures. Obtaining input from various groups will expedite the evaluation process in the next step when determining if the public and other external groups can easily understand a particular performance measure. This will also be important when reporting results, covered in depth in Component 06: Reporting and Communication. Internal staff should, now that they understand the performance context, be able to determine whether certain measures are forecastable or measurable with existing tools and data. This combination of internal technical understanding and external, generalist perspective will ensure that a useful set of initial measures is developed in this step.</p>

STEP 1.2.2	Engage internal staff and external stakeholders																														
	<p>Items to keep in mind:</p> <ul style="list-style-type: none">• Ensure a diverse group of stakeholders is invited to participate• Engage technical and nontechnical individuals																														
Examples	<p>External Stakeholders: Maryland Attainment Report Advisory Committee</p> <p>As of 2000, Maryland law requires publication of an annual Attainment Report that includes performance indicators to track progress toward achievement of goals and objectives in the Maryland Transportation Plan (LRTP) and the Consolidated Transportation Program (6-year capital budget).³⁷ The law was updated in 2010 to create an Attainment Report Advisory Committee comprised of specific stakeholders such as:</p> <ul style="list-style-type: none">• A representative of rural interests• A representative of an auto-users’ group• A representative of a transit-users’ group• A nationally-recognized expert on pedestrian and bicycle transportation• A nationally-recognized expert on transportation performance management• And others <p>The committee is charged with reviewing use of performance measures in other states to advise MDOT on goals, benchmarks, and performance measures. An example of such a measure is below. MDOT staff as well as staff from the modal administrations within the department work with the committee to develop performance measures each time Maryland’s long-range plan is updated, or every three years.</p> <p>Figure 1-11: Measuring Safety for Bicycle and Pedestrians at MDOT Source: 2015 Annual Attainment Report³⁸</p> <p>Number of Bicycle Fatalities and Injuries on All Maryland Roads</p>  <table><tr><th>Calendar Year</th><th>Number of bicycle injuries on all roads in Maryland</th><th>Number of bicycle fatalities on all roads in Maryland</th></tr><tr><td>2005</td><td>629</td><td>7</td></tr><tr><td>2006</td><td>648</td><td>7</td></tr><tr><td>2007</td><td>636</td><td>7</td></tr><tr><td>2008</td><td>619</td><td>7</td></tr><tr><td>2009</td><td>559</td><td>10</td></tr><tr><td>2010</td><td>601</td><td>8</td></tr><tr><td>2011</td><td>575</td><td>5</td></tr><tr><td>2012</td><td>660</td><td>5</td></tr><tr><td>2013*</td><td>556</td><td>7</td></tr></table>	Calendar Year	Number of bicycle injuries on all roads in Maryland	Number of bicycle fatalities on all roads in Maryland	2005	629	7	2006	648	7	2007	636	7	2008	619	7	2009	559	10	2010	601	8	2011	575	5	2012	660	5	2013*	556	7
Calendar Year	Number of bicycle injuries on all roads in Maryland	Number of bicycle fatalities on all roads in Maryland																													
2005	629	7																													
2006	648	7																													
2007	636	7																													
2008	619	7																													
2009	559	10																													
2010	601	8																													
2011	575	5																													
2012	660	5																													
2013*	556	7																													

³⁷ Transportation Article Section 2-103.1 of the Annotated Code of Maryland.

³⁸ Maryland Department of Transportation. (2015). 2015 Annual Attainment Report.

http://www.mdot.maryland.gov/Office_of_Planning_and_Capital_Programming/CTP/CTP_15_20/CTP_Documents/2015_Final_AR.pdf

STEP 1.2.2	Engage internal staff and external stakeholders
Linkages to Other TPM Components	<p>Component A: Organization and Culture (See TPM Framework)</p> <p>Component B: External Collaboration and Coordination</p>
STEP 1.2.3	Evaluate potential measures
Description	<p>What gets measured gets managed, so it is important to select performance measures thoughtfully. An agency should consider the characteristics discussed in the introduction to this chapter and listed in Table 1-2. Selected measures will have a strong impact on agency priorities because they will be tracked and reported. A classic example is congestion measures, whereby choosing to measure volume/capacity ratio will push the agency toward capacity solutions such as roadway expansion. While this could be acceptable to an agency, this likely result should be understood during the selection process and weighed against other potential measures such as person-hour delay that may allow for more multimodal solutions. Measures can push agencies away from their stated goals if they favor undesirable solutions as the only way to move the needle.</p> <p>The evaluation process feeds into the next step of establishing a governance process. To streamline the next steps and future iterations of the process of setting up the strategic direction, it is important to record how measure selection was conducted, what was decided, and why.</p> <p>Items to keep in mind:</p> <ul style="list-style-type: none"> • Consider the desirable characteristics in Table 1-2. • What type of solutions will a particular measure push the agency toward? • Do measures create potential conflicts? • Create a user-friendly and standard form for evaluation.
Examples	<p>WisDOT Measures Profile</p> <p>The Wisconsin DOT (WisDOT) uses an extensive spreadsheet to assess potential measures; factors include a one to five rating of measure reliability, how often data are collected, who is responsible for the measure, and unit of measure. Each measure is listed according to the goal it seeks to measure. The spreadsheet has been designed for ease of use with pop-out info boxes that further explain particular factors. It is important that the process is as robust as possible, while also being simple and straightforward for the user. WisDOT's spreadsheet also tracks measures by year and lists the performance target for each measure, allowing the same document to be used for evaluation of potential measures as well as for recording progress toward attaining targets.</p>

STEP 1.2.3

Evaluate potential measures

Figure 1-12: Performance Measure Evaluation at WisDOTSource: Wisconsin Department of Transportation³⁹

K	L	M	N	O	P	Q	R	S
Singular metric or analytic (index) measure?	Degree of reliability (1 worst - 5 best)	Degree of validity (1 worst - 5 best)	Data Frequency	Data Timing	Information Source(s)	Data Element(s)	Measure Calculation Formula(e)	Steering Team Member

Maricopa Association of Governments (MAG)

MAG uses the following matrix to visualize data availability for potential measures. Measures are arranged according to mode and focus area and are identified as system, corridor, or segment level measures. Data availability is indicated by the color of the cell; yellow indicates data are available, orange indicates partial data are available/refinement is needed for usability, and red indicates that no data are available or significant refinement is necessary. This “road map matrix” method clearly demonstrates at a glance which focus areas and modes are lacking in usable measures, assisting the agency in refining measures through further development of the Transportation Performance Management Program.

Figure 1-13: Maricopa Association of Governments Measure Evaluation MatrixSource: Maricopa Association of Governments⁴⁰

Focus Area/Mode	Limited Access Highways (GP)	HOV Lanes	Arterials	Transit
Travel Time, Delay & Reliability	Mean and 80th-95th percentile & point-to-point travel times	Mean and 80th-95th percentile & point-to-point travel times	Mean and 80th-95th percentile & point-to-point travel times (PSSD)	Point-to-point travel times
	Congestion - spatial and temporal (FMS)	Congestion - spatial and temporal (FMS)	Congestion - spatial and temporal	Congestion - spatial and temporal
	Travel time reliability index [buffer index]	Travel time reliability index [buffer index]	Travel time reliability index [buffer index]	On-time performance (peak period and overall)
	Congestion/Delay - speed based (PSSD)		Congestion/Delay - speed based (PSSD)	
	Travel time index and planning time index (PSSD)		Travel time index and planning time index (PSSD)	
	Avg Trip length by mode			Avg Trip length by mode
	Lost Productivity			

Linkages to Other TPM Components

Component B: External Collaboration and Coordination

(See TPM Framework)

Component C: Data Management

Component D: Data Usability and Analysis

³⁹ Wisconsin Department of Transportation. Performance Measure Evaluation. Madison, WI. Courtesy of Lori Richter.⁴⁰ Maricopa Association of Governments. 2016. Phoenix, AZ.

STEP 1.2.4	Establish governance process
Description	<p>With final measures approved, the agency is then ready to document the process and move to target setting. However, the performance measures selection process is not a one-off activity; measures should be continually assessed and modified. A governance process must be created to manage these adjustments to ensure changes reflect the needs of the agency and external stakeholders, data constraints, and other factors.</p> <p>Important questions to ask:</p> <ul style="list-style-type: none"> • Obtain internal feedback from different users across the agency: will the selected measures support decision-making? • Gather feedback from external stakeholders on higher-level measures: do they resonate? • Consider gaps: what does the agency want to measure, but can't, because of data limitations? What new data sources are in the pipeline? <p>From answers to the above questions, the agency should adjust selected measures, develop supplementary measures that will provide additional support for decision-making, and explore the feasibility of collecting new data to fill gaps. Data may already be collected, but are not in an accessible or usable form; consider options to make such data useful for decision-making.</p>
Examples	<p>The Strafford MPO, which covers the Dover-Rochester-Berwick, ME urbanized area in New Hampshire and Maine, has a well-defined performance measure governance process. Initial measure selection considers a number of factors as shown below.⁴¹</p> <p>The Policy and Technical Advisory Committees⁴² comprise representatives from a number of external stakeholders including NHDOT, local municipalities, the University of New Hampshire, and FHWA. In addition to input from these committees, SMPO considers data/resource constraints, statutory requirements, and its own goals and objectives. With selected measures, targets are set and incorporated into the planning process. The dynamic nature of SMPO's process is depicted with the feedback arrow that spans the full length of the performance measure selection process as well as target setting and planning.</p>

⁴¹ Performance Based Transportation Planning. Presentation November 21, 2014. http://www.trafford.org/cmsAdmin/uploads/policy-11-21-2014-meeting-presentation_with_notes.pdf

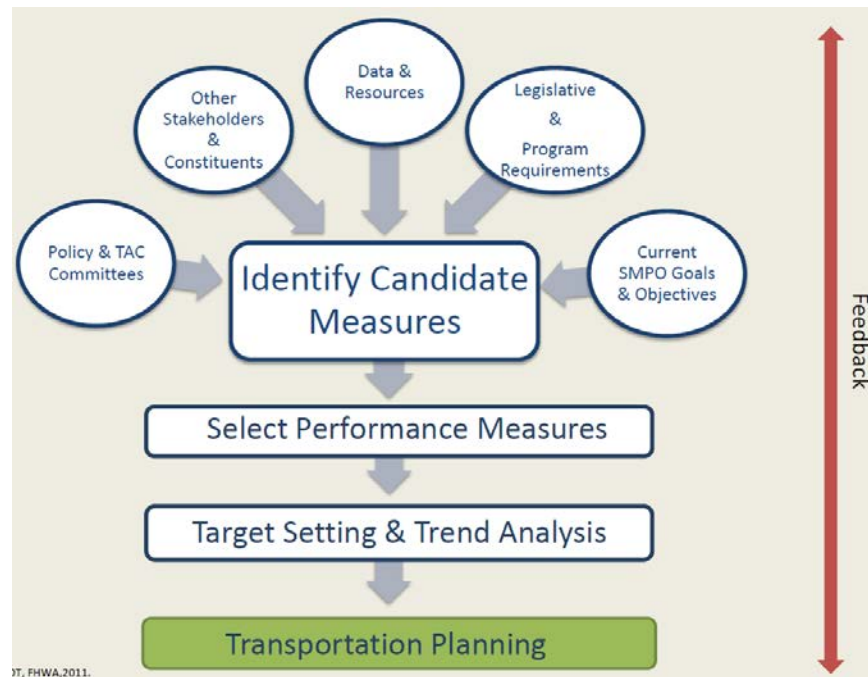
⁴² Policy Advisory Committee. http://www.trafford.org/transportation/mpo_policycomm.php. Technical Advisory Committee. http://www.trafford.org/transportation/mpo_tac.php

STEP 1.2.4

Establish governance process

Figure 1-14: Strafford MPO Performance Measure Governance Process

Source: Performance Based Transportation Planning Presentation⁴³


Linkages to Other TPM Components

Component A: Organization and Culture

(See TPM Framework)

Component B: External Collaboration and Coordination

Component C: Data Management

Component D: Data Usability and Analysis

STEP 1.2.5

Document the process and measure details

Description

Like the goal selection process, the measure selection process should be documented to streamline future iterations. However, for performance measures, it is vital to document the measures themselves including how they are calculated, what data sources they use, and other details. Among other reasons, it will prevent inaccurate comparisons among agencies that use a measure of the same name but different underlying calculations.

Step 1.2.1 directly feeds into documentation. All of the information collected in the inventory of data, tools, and performance reports should be recorded in this step for future reference.

Document:

- Data owner and source
- Measure calculations
- Final selection of measures
- How to identify and close performance measurement gaps

⁴³ Strafford Regional Planning Commission. (2014). Performance Based Transportation Planning Presentation. Rochester, NH. http://www.strafford.org/cmsAdmin/uploads/policy-11-21-2014-meeting-presentation_with_notes.pdf

STEP 1.2.5 Document the process and measure details

Examples

WMATA On-Time Performance Comparison

When the Board of the Washington Metropolitan Area Transit Authority wanted to compare bus on-time performance (OTP) with other agencies, staff found such a comparison to be a challenge. No industry standard exists for measuring and reporting this metric, yet many agencies use the same name: bus on-time performance. It is impossible to precisely compare one agency to another with widely varying parameters of what is considered late or on time. Figure 1-15 summarizes a few agency parameters for OTP. WMATA (listed as Metro in Figure 1-15) defines on-time performance as the “difference between scheduled time and actual time arriving at a time point based on 2 minutes early/7 minutes late parameters.”⁴⁴

While it may seem clear from Figure 1-15 which agency has the most rigorous definition of OTP, there is another aspect of this performance measure that must be noted; agencies also record bus arrivals in differing ways. Some agencies like Miami-Dade Transit include every stop on a route, but do not include departure and arrival at garages. MARTA only measures departures.

Figure 1-15: Comparing Public Transportation Performance Measures

Source: Bus Performance Board Nov. 2010⁴⁵

AGENCY	EARLY	LATE
Metro <small>*Schedule Adherence</small>	2 minutes	7 minutes
Ride On <small>* Schedule Adherence</small>	2 minutes	5 minutes
DC Circulator <small>*Headway Adherence (<15 mins. is late)</small>	7 minutes	11 minutes
The Bus <small>* Schedule Adherence</small>	2 minutes	7 minutes
CUE <small>*Schedule Adherence</small>	2 minutes	5 minutes
SEPTA <small>*Schedule Adherence</small>	0 minutes	4 minutes
MDT <small>* Schedule Adherence</small>	59 seconds	4 minutes + 59 seconds
MARTA <small>*Schedule Adherence</small>	0 minutes + 30 seconds	5 minutes + 30 seconds
MTA New York City <small>*Schedule Adherence</small>	1 minute	5 minutes

This example demonstrates the importance of clearly documenting every aspect of each performance measure the agency selects. In the target-setting process (Component 02), the agency may decide to benchmark with peer agencies to create a context for the target being set. Knowing the details and definitions behind both internal and external measures ensures that benchmarking provides useful information to help set a proper target.

Minnesota Department of Transportation Performance Reporting

In an effort to evaluate service delivery and program effectiveness, MnDOT established a transportation performance management plan intended to ensure transparency, support decision-making and enhance management practices. To communicate performance to stakeholders, the organization created a transportation results scorecard documenting measures, targets, results, score, and trend figures, along with an analysis of results.

⁴⁴ Washington Metropolitan Area Transit Authority. (2008). Operational Performance. http://www.wmata.com/about_metro/board_of_directors/board_docs/100208_OPSPerformance.pdf

⁴⁵ Washington Metropolitan Area Transit Authority. (2011). Bus Performance Board Nov. 2010. Washington, DC.

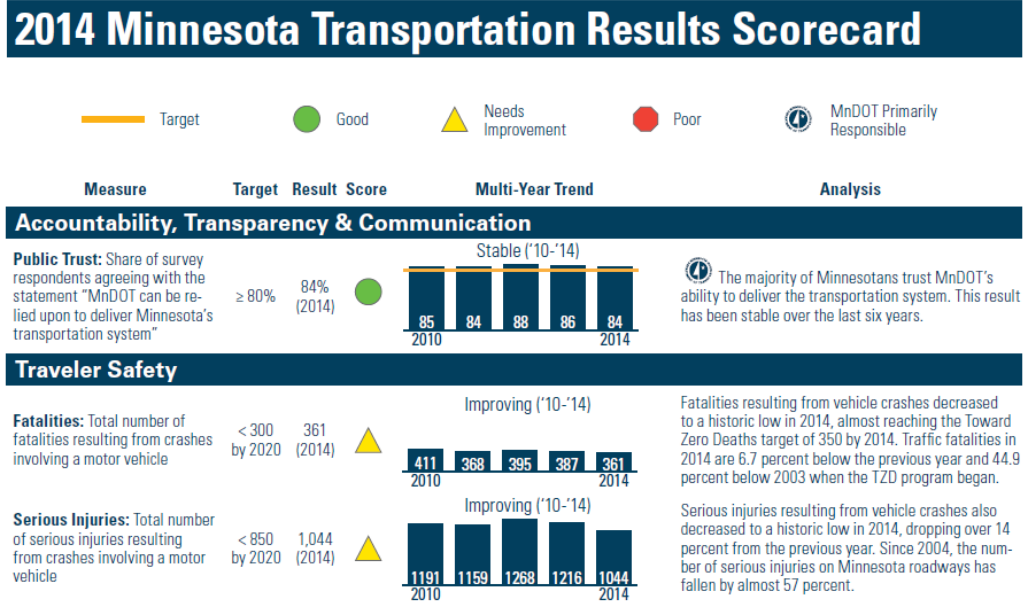
STEP 1.2.5

Document the process and measure details

The components shown below illustrate how MnDOT documents and shares its data and delivers performance results.

Figure 1-16: Encouraging Transparency through Self-Reporting with MnDOT

Source: 2014 Minnesota Transportation Results Scorecard⁴⁶



Linkages to Other TPM Components

Component A: Organization and Culture

(See TPM Framework)

Component C: Data Management

Component 02: Target Setting

⁴⁶ Minnesota Department of Transportation. (2014). 2014 Minnesota Transportation Results Scorecard. <http://www.dot.state.mn.us/measures/pdf/2014scorecard.pdf>

RESOURCES

Resource	Year	Link
<i>TPM Toolbox</i>	2016	www.tpmtools.org
<i>Performance Based Planning and Programming Guidebook</i>	2013	http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/
<i>FHWA Interim Guidance on National Performance Measure Development</i>	2012	http://www.regulations.gov/#!documentDetail;D=FHWA-2013-0020-0016
<i>A Guidebook for Performance-Based Transportation Planning (NCHRP Report 446)</i>	2000	http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_446.pdf
<i>Performance Measurement Framework for Highway Capacity Decision Making (SHRP 2 Report S2-CO2-RR)</i>	2009	http://onlinepubs.trb.org/onlinepubs/shrp2/shrp2_S2-CO2-RR.pdf
<i>Model Long-Range Transportation Plans: A Guide for Incorporating Performance-Based Planning</i>	2012	http://www.fhwa.dot.gov/planning/performance_based_planning/mlrtp_guidebook/
<i>Performance Measurement: Getting Results</i>	2006	Book, Harry P. Hatry (author) https://books.google.com/books/about/Performance_Measurement.html?id=PQNUNlwdbDQC

ACTION PLAN

1. Of the TPM subcomponents discussed in this chapter, which would you like to work on?

☐ 1.1 Goals and Objectives

☐ 1.2 Performance Measures

2. What part of the TPM process listed above are you focusing on? What does your agency want to change or improve?

3. What “step(s)” discussed in this chapter do you think could help you address the focus area noted above?

Goals and Objectives

- ☐ Understand the performance context to create a vision
- ☐ Build inclusive internal process to develop goals and objectives
- ☐ Engage external stakeholders to refine goals and objectives
- ☐ Evaluate goals and objectives
- ☐ Document the process

Performance Measures

- ☐ Inventory data, tools, and performance reports
- ☐ Engage internal staff and external stakeholders
- ☐ Evaluate potential measures
- ☐ Establish governance process
- ☐ Document the process and measure details

4. To implement the “step(s)” identified above, what actions are necessary, who will lead the effort and what interrelationships exist?

Action(s)	Lead Staff	Interrelationships

5. What are some potential barriers to success?

6. Who is someone (internal and/or external) to collaborate with to implement this action plan?

7. How will I know if I have made progress (milestones/timeframe/measures)?

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