

# National TPM Implementation Review Survey Design and Draft Questions

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## Overview

The primary goal of the National Transportation Performance Management (TPM) Implementation Review is to gather information about the application of performance management, performance based-planning and programming principles, and other MAP-21 performance provisions at State Departments of Transportation (State DOTs) and Metropolitan Planning Organizations (MPOs). The National TPM Implementation Review will seek to provide quantitative and coded qualitative data from open ended questions that can be summarized to spur further discussion of the resource and guidance needs of transportation agencies. It is believed that State DOTs and MPOs have a general understanding of TPM practices and have begun implementation, but it will be beneficial to have a better understanding of specific capabilities, progress, challenges and needs. The review will collect data from State DOT and MPO staff regarding:

- Self-assessments of their capabilities to implement performance management and status of their current practice;
- Perceived priorities of different aspects of performance management;
- Understood benefits and drawbacks of TPM practices;
- Identification of key challenges of TPM implementation from the perspective of the Partner Organizations;
- Assessment of needs and interest in receiving training, guidance resources, and technical assistance;
- Preferences among alternative means for providing capacity building and training; and
- Evaluation of TPM components by specific performance areas (e.g., safety, bridge, pavement).

The web survey instrument for the National TPM Implementation Review will consists of the following sections:

- A. TPM General (*directed at the principal contacts at the State DOTs, and MPOs regarding TPM in general*)
- B. Performance-based Planning and Programming (*directed at Subject Matter Expert (SMEs)*)
- C. Asset Management (*directed at SMEs*)
- D. TPM by Performance Area: Safety (*directed at SMEs*)
- E. TPM by Performance Area: Bridge (*directed at SMEs*)
- F. TPM by Performance Area: Pavement (*directed at SMEs*)
- G. TPM by Performance Area: Freight (*directed at SMEs*)
- H. TPM by Performance Area: Congestion/Mobility/System Performance (*directed at SMEs*)
- I. TPM by Performance Area: On-road Mobile Source Emission (*directed at SMEs*)
- J. TPM by Performance Area Supplement: Transit Safety and Transit State of Good Repair (***directed only at State DOTs and MPOs with Transit Oversight***)

For each of the performance area sections listed above (D-J), a set of 22 common questions will be used and organized into the following subsections:

Subsection	Example questions
Staffing	<ul style="list-style-type: none"> <li>• Does your agency have staff dedicated to TPM responsibilities?</li> </ul>
Data & Analysis	<ul style="list-style-type: none"> <li>• Does your agency have data analytic tools to help with developing measures, setting targets, programming and monitoring results?</li> </ul>
Performance Measures	<ul style="list-style-type: none"> <li>• Are the measures developed by an agency included in the LRTP?</li> </ul>
Target Setting	<ul style="list-style-type: none"> <li>• Does your agency develop short term quantifiable targets that can be used to guide program investment decision making?</li> </ul>
Planning and Programming	<ul style="list-style-type: none"> <li>• Have you been able to successfully use a performance based justification to acquire additional funds to support transportation needs?</li> </ul>
Monitoring & Reporting	<ul style="list-style-type: none"> <li>• How are performance results communicated?</li> </ul>

Subsection	Example questions
Capacity building needs	<ul style="list-style-type: none"> <li data-bbox="548 107 1497 159">Please indicate the areas that your agency will likely need assistance for TPM practices?</li> </ul>

In addition to the transit questions in Section J, Section A also contains a transit supplement section aimed at capturing additional transit TPM information.

In addition to the common set of questions, a limited number of performance area specific questions will be included as warranted.

In the administered online survey, each set of performance area questions along with a set of common questions, will be “self-contained” so they can be delegated to the appropriate subject matter experts. A responding agency will have the option to delegate sections of the survey by performance area via email. The designated survey contact for that agency will have the ability to review the entire survey before submitting it to FHWA. This is discussed in more detail in [Part 2](#) of this document.

The remainder of this document is divided into two parts:

[Part 1](#) lists the draft questions proposed for the National TPM Implementation Review Survey and [Part 2](#) outlines the Data Collection and Analysis Design of the survey. Use the following table of contents to navigate through the document.

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# Section A: TPM Questions

FHWA defines Transportation Performance Management (TPM) as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals. In short, Transportation Performance Management (TPM):

- Is systematically applied in a regular ongoing process.
- Provides key information to help decision makers -- allowing them to understand the consequences of investment decisions across multiple markets.
- Supports the improvement of communications between decision makers, stakeholders and the traveling public.
- Encourages the development of targets and measures in cooperative partnerships and based on data and objective information.

The FHWA Office of TPM has developed a TPM Framework that is comprised of the following 10 components:

Component	Definition
Strategic direction	The establishment of an agency's direction through well-defined goals and objectives and a set of aligned performance measures.
Target Setting	The use of baseline data, information on possible strategies, funding constraints, and forecasting tools to collaboratively set targets.
Performance-based planning	The use of agency goals, objectives, and performance trends to drive the development of strategies and priorities in mid and long range plans.
Performance-based programming	The use of strategies and priorities to guide the allocation of resources to projects selected to achieve goals, objectives, and targets.
Reporting & communication	The products, techniques, and processes used to communicate performance information to different audiences for maximum impact
Monitoring & adjustment	Processes to track and evaluate actions taken and outcomes achieved that establish a feedback loop to adjust planning, programming, and target setting decisions.
External collaboration	Established processes to engage and collaborate with agency partners and stakeholders on planning/visioning, target setting, programming, data sharing, and reporting.
Data Usability & Analysis	The existence of useful and valuable data sets and analysis capabilities, provided in usable, convenient forms to support TPM.
Data Management	The means by which an organization efficiently plans, collects, creates, organizes, uses, controls, stores, disseminates and disposes of data to ensure that the value of the data is understood and fully exploited.
Organization & Culture	Institutionalization of a performance management culture within the organization, as evidenced by leadership support, employee buy-in, and embedded organizational structures and processes that support performance management.

**A1. To comply with federal requirements, State DOTs and MPOs may need to implement transportation performance management practices. Generally speaking, how prepared do you feel to carry out the following components of a TPM practice?**

TPM Component	1-not at all prepared	2-somewhat unprepared	3-moderately prepared	4-very well prepared
Strategic direction	( )	( )	( )	( )
Target Setting	( )	( )	( )	( )
Performance-based planning	( )	( )	( )	( )

TPM Component	1-not at all prepared	2-somewhat unprepared	3-moderately prepared	4-very well prepared
Performance-based programming	( )	( )	( )	( )
Reporting & communication	( )	( )	( )	( )
Monitoring & adjustment	( )	( )	( )	( )
External collaboration	( )	( )	( )	( )
Data Usability & Analysis	( )	( )	( )	( )
Data Management	( )	( )	( )	( )
Organization & Culture	( )	( )	( )	( )

**A2. For your agency, how important do you feel each of the ten TPM components are for your agency?**

TPM Component	1- not important at all	2- somewhat unimportant	3- somewhat important	4- very important
Strategic direction	( )	( )	( )	( )
Target Setting	( )	( )	( )	( )
Performance-based planning	( )	( )	( )	( )
Performance-based programming	( )	( )	( )	( )
Reporting & communication	( )	( )	( )	( )
Monitoring & adjustment	( )	( )	( )	( )
External collaboration	( )	( )	( )	( )
Data Usability & Analysis	( )	( )	( )	( )
Data Management	( )	( )	( )	( )
Organization & Culture	( )	( )	( )	( )

**A3. Which of the ten TPM components do you expect will be the biggest challenge for your agency to carry out?**

\*Please rate how challenging each TPM component will be for your agency from 0 to 10, where "10" (*Biggest Challenge*) means that you feel your agency does not have the skills or resources to address that aspect of TPM at all and "0" (*Not a Challenge*) means that your agency sees no challenge in fulfilling that TPM component.

TPM Component	(0)Not a challenge to Biggest Challenge (10)										
Strategic direction	0	1	2	3	4	5	6	7	8	9	10
Target Setting	0	1	2	3	4	5	6	7	8	9	10
Performance-based planning	0	1	2	3	4	5	6	7	8	9	10
Performance-based programming	0	1	2	3	4	5	6	7	8	9	10
Reporting & communication	0	1	2	3	4	5	6	7	8	9	10
Monitoring & adjustment	0	1	2	3	4	5	6	7	8	9	10
External collaboration	0	1	2	3	4	5	6	7	8	9	10
Data Usability & Analysis	0	1	2	3	4	5	6	7	8	9	10
Data Management	0	1	2	3	4	5	6	7	8	9	10
Organization & Culture	0	1	2	3	4	5	6	7	8	9	10

**A4. On what TPM components should FHWA be developing technical support to help your agency?**

\* Please identify the one role that should receive FHWA's highest priority for technical support (column 1), second highest priority (column 2), and third highest priority (column 3).

Select Top 3 TPM Component Priorities (1st, 2nd, 3rd)	1st	2nd	3rd
Strategic direction			
Target Setting			
Performance-based planning			
Performance-based programming			
Reporting & communication			
Monitoring & adjustment			
External collaboration			
Data Usability & Analysis			
Data Management			
Organization & Culture			

**A5. To address the need for technical training identified in the previous question, what capacity building format would benefit you and other agency staff members the most? (check all that apply)**

- Specific training/workshops
- Courses (NHI or similar),
- Guidance
- Guidebooks
- Webinars,
- Performance Plans and Documents Templates
- Tools
- Other:

**A6. What do you think of Transportation Performance Management as a business practice? (check the box, on either on right or the left, next to the word you agree with the most)**

( )	Easy vs. Challenging	( )
( )	Practical vs. Impractical	( )
( )	Creative vs. Ordinary	( )
( )	Important vs. Unimportant	( )
( )	Inflexible vs. Accommodating	( )
( )	Groundbreaking vs. Outmoded	( )
( )	Wasteful vs. Efficient	( )

**A7. Select and describe the option(s) that best aligns with how your agency is staffed to support transportation performance management. (check all that apply)**

	TPM Staffing
( )	Dedicated performance management staff
( )	Existing organizational unit
( )	Temporary implementation group
( )	Committee structure
( )	Other

Please elaborate on how your organization is staffed or plans to its self to support transportation performance management: \_\_\_\_\_

**A8. What number of Full Time Equivalent (FTEs) would you estimate are focused on performance management activities? \_\_\_\_\_**

**A9. If your AGENCY has a reporting website please provide the URL: \_\_\_\_\_**

**A10. For each of the performance management functions listed below please indicate: your agency’s need for tools; your agency’s ability to competently carry out the function; and how important the function is to your agency in managing performance.**

Function	Need for tools (y/n)	Agency competency (1 to 5)	Importance to Agency (1-not at all important to 4-very important)
Producing graphical and map displays	(y/n)	1 2 3 4 5	1 2 3 4
Conducting project level benefit-cost alternative analysis	(y/n)	1 2 3 4 5	1 2 3 4
Conducting system level investment scenario analyses	(y/n)	1 2 3 4 5	1 2 3 4
Comparing trade-offs across projects, investment scenarios, and performance areas	(y/n)	1 2 3 4 5	1 2 3 4
Creating internal operational dashboards	(y/n)	1 2 3 4 5	1 2 3 4
Creating externally facing dashboards	(y/n)	1 2 3 4 5	1 2 3 4
Reporting progress and performance outcomes on websites	(y/n)	1 2 3 4 5	1 2 3
Communicating/Messaging performance results to public and stakeholders	(y/n)	1 2 3 4 5	1 2 3 4

**A11. What specific limitations constrain you from considering the activities listed in the previous question? (Check all that apply)**

- Available staff
- Available data
- Lack of staff skills
- Funding
- Limited time or resources for training
- Availability of Final Rules
- All of the above

**A12. Does your agency have over sight of Transit and Public Transportation entities? (Yes/NO)If Yes, please answer the questions in the Transit Safety and Transit State of Good Repair Supplement Questions and throughout the remainder of the survey.**

## Transit Safety and Transit State of Good Repair Supplement

**A13. Select and describe the option that best aligns with how your agency is staffed to support transportation performance management in the areas of *Transit Safety and Transit State of Good Repair*.**

TPM Staffing for Transit	Transit Safety	Transit State of Good Repair
Dedicated performance management staff	( )	( )
Existing organizational unit	( )	( )
Temporary implementation group	( )	( )
Committee structure	( )	( )
Other	( )	( )

**A14. On what TPM components should FTA be developing technical support to help your agency? Please identify the one role that should receive FTAs highest priority for technical support (column 1), second highest priority (column 2), and third highest priority (column 3).**

Select Top 3 TPM Component Priorities for Transit (1st, 2nd, 3 <sup>rd</sup> )	1st	2nd	3rd
Strategic direction			
Target Setting			
Performance-based planning			
Performance-based programming			
Reporting & communication			
Monitoring & adjustment			
External collaboration			
Data Usability & Analysis			
Data Management			
Organization & Culture			

**A15. To address the need for technical training identified in the previous question, what capacity building format would benefit you and other agency staff members the most? (*check all that apply*)**

- Specific training/workshops
- Courses (NHI or similar),
- Guidance
- Guidebooks
- Webinars,
- Performance Plans and Documents Templates
- Tools
- Other:

# Section B- PBPP Questions

*The following questions pertain specifically to PBPP and to your agency's use of PBPP in the transportation planning process.*

**PBPP Definition:** Performance-based planning and programming (PBPP) refers to the application of performance management within the planning and programming processes of transportation agencies to achieve desired performance outcomes for the multimodal transportation system. This includes processes to develop a range of planning products undertaken by a transportation agency with other agencies, stakeholders, and the public as part of a 3C (cooperative, continuing, and comprehensive) process.

It includes development of these key elements:

- Long range transportation plans (LRTPs) or Metropolitan Transportation Plans (MTPs),
- Other plans and processes: e.g., Strategic Highway Safety Plans, Asset Management Plans, the Congestion Management Process, CMAQ Performance Plan, Freight Plans, Transit Agency Asset Management Plans, and Transit Agency Safety Plan,
- Programming documents, including State and metropolitan Transportation Improvement Programs (STIPs and TIPs).

PBPP attempts to ensure that transportation investment decisions in long-term planning and short-term programming of projects are based on an investment's contribution to meeting established goals. [Source: **FHWA PBPP guidebook**; [http://www.fhwa.dot.gov/planning/performance\\_based\\_planning/](http://www.fhwa.dot.gov/planning/performance_based_planning/)]

## **B1. How does your agency incorporate PBPP into its LRTP? (*check all that apply*)**

- The LRTP includes performance measures linked to the plan's vision, goals, or objectives
- The LRTP includes performance measures corresponding to MAP-21 national goals
- The LRTP includes performance measures corresponding to goals in addition to the national goals specified under MAP-21
- The LRTP performance measures are linked to project selection or screening criteria for STIP/TIP programming
- The LRTP evaluates multiple scenarios based on established performance measures
- The LRTP sets performance targets for goals
- The LRTP includes a monitoring plan for evaluating the results of LRTP investments using performance measures
- All of the above
- None of the above
- Not sure

**B2. Indicate the degree to which the LRTP/Strategic Business Plan (SBP) impacts actual investment decisions for the following areas** (*Please rate the level of linkage between program investments and the performance outcome they intend to achieve using a 1(No linkage) to 5(Strong Linkage) scale.*)

Performance Area	1-No linkage	2-Minor Linkage	3-Some Linkage	4-Moderate Linkage	5-Strong Linkage
Highway Safety	( )	( )	( )	( )	( )
Transit Safety	( )	( )	( )	( )	( )
Pavement	( )	( )	( )	( )	( )
Bridge	( )	( )	( )	( )	( )
Transit State of Good Repair	( )	( )	( )	( )	( )
Congestion/Mobility/System Performance	( )	( )	( )	( )	( )
CMAQ On-Road Mobile Source Emissions	( )	( )	( )	( )	( )
Freight	( )	( )	( )	( )	( )

**B3. For the following plans, indicate if there is a connection to PBPP elements in the LRTP. For example, do these plans and the LRTP share goals, measures, targets or strategies? (check all that apply)**

Performance Plan	Goals	Measures	Targets	Strategies	Unclear
Strategic Highway Safety Plan	( )	( )	( )	( )	( )
Asset Management Plan	( )	( )	( )	( )	( )
Congestion Management Process	( )	( )	( )	( )	( )
CMAQ performance plan	( )	( )	( )	( )	( )
Freight Plans	( )	( )	( )	( )	( )
Transit Agency Asset Management Plan	( )	( )	( )	( )	( )
Transit Agency Safety Plan	( )	( )	( )	( )	( )

**B4. How does your agency incorporate PBPP into its STIP/TIP? (check all that apply)**

- The LRTP goals and performance measures are reflected in STIP/TIP project selection or screening
- Priorities or rating of proposed STIP/TIP investments are determined or informed by performance measures
- The STIP/TIP evaluates alternative investment scenarios based on LRTP goals and performance measures
- The results of STIP/TIP investments are monitored using performance measures
- STIP/TIP project selection or screening includes a discussion as to how the investment program will achieve targets

**B5. Indicate the degree to which you agree with the following statement:**

**“Your agency has a plan that identifies the strategies and/or investments that will be made to achieve specific targets in the following performance areas:”**

Performance Area	1-Strongly Disagree	2-Somewhat Disagree	3-Neutral	4-Somewhat Agree	5-Strongly Agree
Highway Safety	( )	( )	( )	( )	( )
Transit Safety	( )	( )	( )	( )	( )
Bridge	( )	( )	( )	( )	( )
Pavement	( )	( )	( )	( )	( )
Transit State of Good Repair	( )	( )	( )	( )	( )



Performance Area	1-Strongly Disagree	2-Somewhat Disagree	3-Neutral	4-Somewhat Agree	5-Strongly Agree
Congestion/Mobility/System Performance	( )	( )	( )	( )	( )
CMAQ On-Road Mobile Source Emissions	( )	( )	( )	( )	( )
Freight	( )	( )	( )	( )	( )

**B6. Does your agency use measures in other non- highway modes to evaluate performance? (check all that apply)**

- Amtrak/Freight Rail
- Transit Rail
- Transit Bus
- Aviation
- Waterways/Shipping
- Passenger/ Auto Ferries
- Hiking/Biking Trails
- Bike/Pedestrian
- Other State Transportation Agencies (STA) areas: \_\_\_\_\_

**B7. How does your agency evaluate the outcomes of its transportation planning and programming processes? (Check all that apply)**

- The agency regularly monitors the effect of project and strategies funded in the STIP/TIP
- The agency reports on progress towards achieving performance targets
- The agency applies the evaluation of investment effectiveness in future programming decisions
- Congestion Management Program annual reporting
- The Agency DOES NOT identify the outcomes they want from the transportation planning and programming process

**B8. Rate your sense of the readiness of your agency to effectively carry out a performance-based planning and programming approach using the scale below (select one):**

Rating	Scale
( )	<b>Low</b> - In general, the STA has not integrated performance into their planning and investment decision making and will need considerable assistance to carry out a performance-based federal program
( )	<b>Moderate</b> - STA needs to build capacity and develop better tools/processes to carry out a performance-based federal program in a majority of the performance areas
( )	<b>High</b> - STA is prepared to carry out a performance-based federal program in some of the areas of performance
( )	<b>Very High</b> - STA is prepared to carry out a performance-based federal program in all areas of performance

**B9. In general, how would you describe your agency's the coordination with other planning organizations (the State DOT, MPO(s), Rural Transportation Planning Organization(s) (RTPO[s]), Tribal Organizations, operators of public transportation, and local agencies) to establish performance measures and targets for the state using the scale below? (*select one*)**

Rating	Scale
( )	<b>Nonexistent</b> – State DOT and other planning organizations/agencies do not communicate effectively
( )	Ineffective - State DOT and other planning organizations/agencies communicate but are not aware of each other's view of performance expectations for the region
( )	<b>Somewhat Effective</b> – State DOT and other planning organizations/agencies share their respective performance expectations but do not collaborate on a shared vision for the region
( )	<b>Highly Effective</b> – State DOT and other planning organizations/agencies collaboratively work together to program investments that support generally shared performance expectations. Absent agreements, each implements programs based on shared expectations.
( )	<b>Very Highly Effective</b> – State DOT and other planning organizations/agencies work together in a collaborative manner to decide on performance expectations for a region. All agree to program investments in support of this shared expectation of performance

**B10. Have you realized any benefits (quantitative or qualitative) in using performance-based planning and programming? (*Please check all that apply*)**

- The planning process is improved
- The planning process has a greater influence on decisions
- New or enhanced focus on measurable results
- Improved results – “better decisions”
- Improved transparency and credibility of process
- Improved understanding of process by partners, public, and stakeholders
- Greater acceptance of plans and projects by partners, public, and stakeholders
- Other (describe): \_\_\_\_\_

**B11. On a scale of 1 to 5 how effective has the PBPP process been as a tool for:\***

PBPP process	1- Nonexistent	2- Ineffective	3- Somewhat Effective	4-Highly Effective	5-Very Highly Effective
Guiding transportation investments	( )	( )	( )	( )	( )
Encouraging meaningful Collaboration between the MPO and state DOT, public transit, and other partner agencies	( )	( )	( )	( )	( )
Setting direction in the LRTP (strategic direction, goals, priorities, policies)	( )	( )	( )	( )	( )
Selecting or screening alternative projects for STIP/TIP	( )	( )	( )	( )	( )
Communicating results	( )	( )	( )	( )	( )
Evaluating the results of policies, investments, and strategies	( )	( )	( )	( )	( )

<b>PBPP process</b>	<b>1- Nonexistent</b>	<b>2- Ineffective</b>	<b>3- Somewhat Effective</b>	<b>4-Highly Effective</b>	<b>5-Very Highly Effective</b>
Improving understanding and support for the planning process	( )	( )	( )	( )	( )
Encouraging participation by stakeholders and the public in the planning process.	( )	( )	( )	( )	( )

**B12. To improve your agency’s effectiveness in using PBPP as a tool for the purposes identified in the previous question, what capacity building format would benefit you and other agency staff members the most?**

- Specific training/workshops
- Courses (NHI or similar),
- Guidance
- Guidebooks
- Webinars,
- Performance Plans and Documents Templates
- Tools
- Other:

# C. Highway Asset Management

FHWA defines asset management is a strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on engineering and economic analysis based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a desired state of good repair over the lifecycle of the assets at minimum practicable cost.

Each State is required to develop a risk-based asset management plan for the National Highway System (NHS) to improve or preserve the condition of the assets and the performance of the system. While the required risk-based asset management plan specifies pavements and bridges on the NHS in 23 U.S.C. § 119(e)(4), 23 U.S.C. 119(e)(3) (MAP-21 § 1106) requires USDOT to encourage States to include all infrastructure assets within the highway right-of-way. Examples of such infrastructure assets include: pavement markings, culverts, guardrail, signs, traffic signals, lighting, Intelligent Transportation Systems (ITS) infrastructure, rest areas, etc., in the asset management plan.

**C1. On a scale of 1 to 5, please indicate to what extent your agency has documented the following Asset Management Plan activities (1-no at all documented to 5-Completely documented):**

Asset Management activities	1-Not at all Documented	2- Beginning to Document	3-Somewhat Documented	4-Significantly Documented	5-Completely Documented
Summary listing of the pavement and bridge assets on the National Highway System in the State, including a description of the condition of those assets	( )	( )	( )	( )	( )
Asset management objectives and measures;	( )	( )	( )	( )	( )
Performance gap identification	( )	( )	( )	( )	( )
Lifecycle cost and risk management analysis,	( )	( )	( )	( )	( )
A financial plan	( )	( )	( )	( )	( )
Investment strategies	( )	( )	( )	( )	( )

**C2. On a scale of 1 to 5, please indicate the degree to which the Performance-based Planning and Programming processes support each of the following Asset Management practices in your Agency (1-No linkage) to 5-Strong Linkage):**

Asset Management practices	1-No linkage	2-Minor Linkage	3-Some Linkage	4-Moderate Linkage	5-Strong Linkage
Long-range plan includes an evaluation of capital, operational, and modal alternatives to meet system deficiencies.	( )	( )	( )	( )	( )

<b>Asset Management practices</b>	<b>1-No linkage</b>	<b>2-Minor Linkage</b>	<b>3-Some Linkage</b>	<b>4-Moderate Linkage</b>	<b>5-Strong Linkage</b>
Capital versus maintenance expenditure tradeoffs are explicitly considered in the preservation of assets like pavements and bridges.	( )	( )	( )	( )	( )
Capital versus operations tradeoffs are explicitly considered in seeking to improve traffic movement.	( )	( )	( )	( )	( )
Long-range plan provides clear and specific guidance for the capital program development process.	( )	( )	( )	( )	( )
Criteria used to set program priorities, select projects, and allocate resources are consistent with stated policy objectives and defined performance measures	( )	( )	( )	( )	( )
Preservation program budget is based upon analyses of least-life-cycle cost rather than exclusive reliance on worst-first strategies.	( )	( )	( )	( )	( )
A maintenance quality assurance study has been implemented to define levels of service for transportation system maintenance	( )	( )	( )	( )	( )

**C3. Has your agency/organization implemented or is planning to implement an Asset Management System (please check one)?**

- Yes, it has already implemented an Asset Management System.
- No, it does not plan to implement an Asset Management System.
- It is planning to implement an Asset Management System but it does not have one yet.
- Don't know.

**C4. Please check the management systems your agency/organization currently has, along with the status of each system within an overall Asset Management framework (please check all that apply):**

<b>Stand-alone management system:</b>	<b>Integrated within Asset Management framework</b>			
<input type="checkbox"/> Pavement (PMS)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Planned	<input type="checkbox"/> Don't know
<input type="checkbox"/> Bridge (BMS)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Planned	<input type="checkbox"/> Don't know
<input type="checkbox"/> Highway Safety (SMS)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Planned	<input type="checkbox"/> Don't know

Stand-alone management system:	Integrated within Asset Management framework			
<input type="checkbox"/> Traffic Congestion (CMS)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Planned	<input type="checkbox"/> Don't know
<input type="checkbox"/> Public Transportation Facilities and Equipment (PTMS)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Planned	<input type="checkbox"/> Don't know
<input type="checkbox"/> Intermodal Transportation Facilities and Systems (ITMS)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Planned	<input type="checkbox"/> Don't know
<input type="checkbox"/> Maintenance Management (MMS)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Planned	<input type="checkbox"/> Don't know

Please list any other management systems used by your agency/organization:

**C5. Please indicate if your agency collects data for each of the following roadway assets types and specify the data collection method (check all that apply).**

Roadway Assets:	Data Collection Method:		
<input type="checkbox"/> Drainage	<input type="checkbox"/> Manual*	<input type="checkbox"/> Automatic**	<input type="checkbox"/> Both
<input type="checkbox"/> Roadside Assets	<input type="checkbox"/> Manual	<input type="checkbox"/> Auto	<input type="checkbox"/> Both
<input type="checkbox"/> Pavements	<input type="checkbox"/> Manual	<input type="checkbox"/> Auto	<input type="checkbox"/> Both
<input type="checkbox"/> Bridge	<input type="checkbox"/> Manual	<input type="checkbox"/> Auto	<input type="checkbox"/> Both
<input type="checkbox"/> Traffic Items	<input type="checkbox"/> Manual	<input type="checkbox"/> Auto	<input type="checkbox"/> Both
<input type="checkbox"/> Special Facilities	<input type="checkbox"/> Manual	<input type="checkbox"/> Auto	<input type="checkbox"/> Both
* Manual data collection involves two or more data collectors that record the data either with pen or most recently with hand-held computers.			
** Automatic data collection involves the use of some type of data collection vehicle or equipment, e.g., video cameras, laser sensors, etc. to capture, store, and process the collected data			

**C6. On a scale of 1 to 4, how important do you feel each of the following Asset Management decision processes are for your agency/organization (1-not at all important to 4-very important)**

Asset Management Decision Processes	1- not important at all	2- somewhat unimportant	3- somewhat important	4- very important
Policy formulation	( )	( )	( )	( )
Performance evaluation and monitoring	( )	( )	( )	( )
Fiscal planning	( )	( )	( )	( )
Program optimization and trade-offs	( )	( )	( )	( )
Development of alternatives (for sustaining assets through their life-cycle)	( )	( )	( )	( )
Impact analysis	( )	( )	( )	( )
Performance-based budgeting	( )	( )	( )	( )
Project selection	( )	( )	( )	( )
Resource allocations	( )	( )	( )	( )
Program delivery/project implementation	( )	( )	( )	( )
Audit, reporting and communication	( )	( )	( )	( )

**C7. On a scale of 1 to 4, please rate the following criteria according to their level of importance for selecting projects that are candidates for funding and implementation within your agency/organization (1-not at all important to 4-very important):**

Project Selection Criteria	1- not important at all	2- somewhat unimportant	3- somewhat important	4- very important	Don't know
Available budget earmarked funds	( )	( )	( )	( )	( )
Project significance	( )	( )	( )	( )	( )
Usage of the project	( )	( )	( )	( )	( )
Proximity of the project to major urban areas	( )	( )	( )	( )	( )
Ease/difficulty of implementation	( )	( )	( )	( )	( )
Engineering parameters (including asset condition)	( )	( )	( )	( )	( )
Geographic distribution of projects/funds	( )	( )	( )	( )	( )
Distribution among asset types	( )	( )	( )	( )	( )
Public demands/user opinion	( )	( )	( )	( )	( )
Environmental consideration	( )	( )	( )	( )	( )
User costs/benefits	( )	( )	( )	( )	( )
Agency costs/benefits	( )	( )	( )	( )	( )
Community costs/benefits	( )	( )	( )	( )	( )

Please list up to three other criteria important for project selection within your agency/organization: \_\_\_\_\_

**C8. Do you think that the above criteria that are used by an agency in order to select between different projects or groups of projects are or should be uniform and consistent for all types of different roadway assets (please click one)?**

Yes.

No.

Don't know.

If Yes please explain why: \_\_\_\_\_

**C9. On a scale of 1 to 5, please rate your agency's technical capacity to carry out the following Asset Management decision-support activities (1-No Capabilities to 5-Expert level Capabilities):**

Asset Management decision-support activities	1-No capabilities	2- Basic level capabilities	3-Interim level capabilities	4-Advanced level capabilities	5-Expert level capabilities
Calculate and report actual system performance;	( )	( )	( )	( )	( )
Identify system deficiencies or needs	( )	( )	( )	( )	( )
Rank candidate projects for the capital program	( )	( )	( )	( )	( )

Asset Management decision-support activities	1-No capabilities	2- Basic level capabilities	3-Interim level capabilities	4-Advanced level capabilities	5-Expert level capabilities
Forecast future system performance given a <b>proposed program of projects</b>	( )	( )	( )	( )	( )
Forecast future system performance under different mixes of <b>investment levels by program category.</b>	( )	( )	( )	( )	( )
Monitors actual system performance and compares these values to targets projected for its <b>capital preservation program</b>	( )	( )	( )	( )	( )
Monitors actual system performance and compares these values to targets projected for its <b>capital improvement program</b>	( )	( )	( )	( )	( )
Monitors actual system performance and compares these values to targets projected for its <b>maintenance and operations program.</b>	( )	( )	( )	( )	( )

**C10. What specific limitations constrain you from considering the activities listed in the previous question? Check all that apply**

- Available staff
- Available data
- Lack of staff skills
- Funding
- Limited time or resources for training
- Availability of Final Rules
- All of the above

**C11. On a scale of 1 to 5, please indicate the degree to which your agency’s policies and guidance is linked to or supports implementing the following Asset Management practices (1-No linkage to 5-Strong Linkage).**

Policies and guidance related to Asset Management	1-No linkage	2-Minor Linkage	3-Some Linkage	4-Moderate Linkage	5-Strong Linkage
Policy guidance supports preservation of existing infrastructure assets.	( )	( )	( )	( )	( )



<b>Policies and guidance related to Asset Management</b>	<b>1-No linkage</b>	<b>2-Minor Linkage</b>	<b>3-Some Linkage</b>	<b>4-Moderate Linkage</b>	<b>5-Strong Linkage</b>
Policy guidance encourages resource allocation and project selection based on cost-effectiveness or benefit/cost analysis	( )	( )	( )	( )	( )
Policies support a long-term, life-cycle approach to evaluating investment benefits and costs.	( )	( )	( )	( )	( )
Policy guidance on resource allocation allows our agency sufficient flexibility to pursue a performance-based approach.	( )	( )	( )	( )	( )
Our agency has a business plan or strategic plan with comprehensive, well-defined goals and objectives to guide resource allocations	( )	( )	( )	( )	( )
Our agency's goals and objectives are linked to specific performance measures and evaluation criteria for resource allocation	( )	( )	( )	( )	( )

**C12. How does your agency evaluate the outcomes of its transportation AM practices?**

- The agency regularly monitors the effect of project and strategies funded in the STIP/TIP
- The agency reports on progress towards achieving performance targets
- The agency applies the evaluation of investment effectiveness in future programming decisions
- Congestion Management Program annual reporting

**C13. On a scale of 1 to 5 how effective has your Asset Management p been as a tool for guiding transportation investments (1-nonexistent to 5-very highly effective)**

- 1: Nonexistent
- 2: Ineffective
- 3: Somewhat Effective
- 4: Highly effective
- 5: Very Highly Effective

**C14. On a scale of 1 to 5 how effective has the AM process been as a data collection tool for(1-nonexistent to 5-very highly effective):\***

<b>AM process</b>	<b>1-Nonexistent</b>	<b>2-Ineffective</b>	<b>3-Somewhat effective</b>	<b>4-Highly effective</b>	<b>5-Very highly Effective</b>
Completing and keeping an up-to-date inventory of your major assets.	( )	( )	( )	( )	( )

AM process	1- Nonexistent	2- Ineffective	3-Somewhat effective	4-Highly effective	5-Very highly Effective
Collecting information on the condition of your assets.	( )	( )	( )	( )	( )
Collecting information on the performance of your assets (e.g. serviceability, ride quality, capacity, operations, and safety improvements).	( )	( )	( )	( )	( )
Improving the efficiency of data collection (e.g., through sampling techniques, use of automated equipment, other methods appropriate to our transportation system).	( )	( )	( )	( )	( )
Establishing standards for geographic referencing that allow us to bring together information for different asset classes.	( )	( )	( )	( )	( )

**C15. To address the need for AM technical training identified what capacity building format would benefit you and other agency staff members the most?**

- Specific training/workshops
- Courses (NHI or similar),
- Guidance
- Guidebooks
- Webinars,
- Performance Plans and Documents Templates
- Tools
- Other: \_\_\_\_\_

# Sections D to J: Common and Specific Performance Area Questions

Common questions that will be asked for all 8 performance areas (including the transit supplementary questions) are grouped in this section. Questions in the section are also grouped thematically by following 6 subsections:

- Staffing
- Data & Analysis
- Performance Measures
- Target Setting
- Programming
- Monitoring & Reporting
- Capacity building needs

In the administered online survey, each set of performance area questions will be “self-contained” so they can be delegated to the appropriate subject matter experts.

## TPM STAFFING

**CommonQ1. On a scale of 1-5, rate that impact that implementing federal performance management requirements to related **PERFORMANCE AREA X** will have on staff resources (1-No Impact to 5-High Impact).**

1-No Impact	2. Minor Impact	3. Some Impact	4. Moderate Impact	5-High Impact
( )	( )	( )	( )	( )

Please Explain \_\_\_\_\_

## DATA & ANALYSIS

**CommonQ2. How do you obtain data relevant for **PERFORMANCE AREA X** performance management (select all that apply)?**

No data	Collect own data	Purchase data	Provided by 3rd party	Collaboration with Partner agency	Evaluating outsourcing data collection
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

**CommonQ3. With respect to data collection, what criteria did your agency use to determine whether or not to outsource *PERFORMANCE AREA X* data collection or rely on 3<sup>rd</sup> party data? (select all that apply)**

- Cost-effectiveness
- Scope of data collection requirements
- Availability of qualified contractors
- Capability of in-house data collection teams
- Experiences of other agencies that have out-sourced data collection
- Coordination with other agencies
- Not applicable
- Other (please specify): \_\_\_\_\_

**CommonQ4. With respect to Data Analysis, what criteria did your agency use to determine whether or not to outsource *PERFORMANCE AREA X* data analysis? (select all that apply)**

- Cost-effectiveness
- Scope of data analysis requirements
- Availability of qualified contractors
- Capability of in-house data analysis teams
- Experiences of other agencies that have out-sourced data analysis
- Coordination with other agencies
- Not applicable
- Other (please specify): \_\_\_\_\_

**CommonQ5. Does your agency have data analytic tools to help with processing and managing data, calculating measures, setting targets, programming and monitoring results for *PERFORMANCE AREA X*?**

Yes, extensive set of analytic tools	Yes, some analytic tools	No	Not sure
()	()	()	()

**CommonQ6. For each of the performance management functions listed below please indicate your agency's need for tools; your agency's ability to competently carry out the function; and how important the function is to your agency in managing *PERFORMANCE AREA X*.**

Function	Need for tools (y/n)	Agency competency (1 low – 5 very high)	Importance to Agency (1-not at all important to 4-very important)
Collecting, processing, reviewing, and managing data	(y/n)	1 2 3 4 5	1 2 3 4
Developing performance models and forecasting trends	(y/n)	1 2 3 4 5	1 2 3 4
Assessing and developing system-wide targets	(y/n)	1 2 3 4 5	1 2 3 4
Selecting and programming projects	(y/n)	1 2 3 4 5	1 2 3 4
Evaluation and analysis of performance results	(y/n)	1 2 3 4 5	1 2 3 4

**CommonQ7. What specific limitations constrain you from considering the activities listed in the previous question? (Check all that apply)**

- Available staff
- Available data
- Lack of staff skills
- Funding
- Limited time or resources for training
- Availability of Final Rules
- All of the above

**D. SPECIFIC TO SAFETY: DATA & ANALYSIS**

**D1. What percentage of public roads are covered by your crash database?**

- ( ) 0 – 20%
- ( ) 21 – 40%

**D2. Have HSIP funds addressed “off state” system needs adequately?**

- No, local needs are not considered.
- Minimally, token amount of HSIP funds flow to locals, but not enough based on crash data
- Marginally, some HSIP funds flow to locals, but not enough based on crash data
- Yes, the distribution of HSIP funds between state and “off State” system matches the distribution of crash data

**D3. Typically how long does it take for crash data from all public roads to be entered into your Statewide crash database?**

- Over 1 year
- 9 – 12 months
- 6 – 9 months
- 3 – 6 months
- 0 – 3 months

**D4. Which agencies do you cooperate with to gather crash data?**

- Counties
- Cities
- Federal agencies
- Tribes
- Other States
- Other (please specify): \_\_\_\_\_

**D5. Does your agency collect and analyze data to assess overall program- level benefits of the HSIP?**

- Yes
- No
- Not Sure

**D6. To what extent does your agency have current or projected railroad traffic?**

- The State has extensive data on the current railroad traffic and extensive data on the projected railroad traffic.
- The State has extensive data on the current railroad, but little to no data on the projected railroad traffic.
- The State has little to no data on the current railroad traffic, but extensive data on the projected railroad traffic.
- The State has little to no data on the current railroad traffic and little to no data on the projected railroad traffic.

**E. SPECIFIC TO BRIDGE: DATA & ANALYSIS**

**E1. Who conducts the National Bridge Inspection Standards safety inspections of non-State owned NHS bridges?**

- State
- Owner Agency
- Not Sure

**E2. How does your agency handle the National Bridge Inspection Standards responsibilities for border bridges (bridges that cross State borders)?**

- Written agreement
- Periodic meetings
- Do Nothing
- Not Sure
- 41 – 60%

- 61 – 80%
- 81 – 100%

## F. Specific to PAVEMENT: DATA & Analysis

### F1. Is pavement data collected in both directions?\*

Route Location	Yes, full extent	Yes, partial extent	No	Not sure
On Interstate Routes?	( )	( )	( )	( )
On other Routes?	( )	( )	( )	( )

### F2. How often is pavement data collected on the National Highway System?

- Annually
- Biennially
- Varies by data item

### F3. Who acquires pavement data on non- State owned NHS Routes?

- State
- Owner Agency
- Don't Know

## G. SPECIFIC TO FREIGHT: DATA & ANALYSIS

### G1. What data do you use in the freight performance measurement and performance-based planning processes?

- Probe data
- NPMRDS
- FAF
- AADT/HPMS
- Other (please specify): \_\_\_\_\_

## H.SPECIFIC TO CONGESTION/MOBILITY/SYSTEM PERFORMANCE: DATA & ANALYSIS

**H1. Do you have any programs in place to count the number of pedestrians and cyclists that use your transportation system?**

- Yes
- No
- Not Sure

**H2. What data do you use in the Congestion/Mobility/System Performance measurement and performance-based planning processes?**

- Probe data
- NPMRDS
- FAF
- AADT/HPMS
- Other (please specify): \_\_\_\_\_

## J. SPECIFIC TO TRANSIT STATE OF GOOD REPAIR SUPPLEMENT: DATA AND ANALYSIS

**J1. Do you have ready access to data to understand TRANSIT STATE OF GOOD REPAIR in your area? If yes, describe and explain.**

- Yes
- No

**J2. Does your agency collect data on TRANSIT STATE OF GOOD REPAIR outside the National Transit Database?**

- Yes, Annually
- Yes, Biennially
- Yes, \_\_\_\_\_
- No

## PERFORMANCE MEASURES

**CommonQ8. Are the *PERFORMANCE AREA X* measures used by your agency incorporated into the following activities?**



Activity	Yes	No
Included in LRTP	( )	( )
Prioritizing Projects	( )	( )
Monitoring and Analysis	( )	( )
Reporting	( )	( )

**CommonQ9. The AGENCY tracks leading **PERFORMANCE AREA X** indicators (leading indicators are metrics that often correlate to a change in performance before a trend can be dedicated using a performance measure) on a regular basis to assess progress in the achievement of longer term outcomes**

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
( )	( )	( )	( )	( )

**CommonQ10. When establishing your chosen **PERFORMANCE AREA X** performance measures, did current data availability factors influence what measures were established? If yes, please describe briefly if your agency is planning new, more meaningful, measures in the future when data becomes more readily available.**

- Yes
- No
- Not Sure

**G.SPECIFIC TO FREIGHT: PERFORMANCE MEASURES**

**G2. Does your freight performance measurement include truck parking?**

- Yes
- No
- Not Sure

**G3. Have you developed freight performance measure in the following modes?\***

	Yes	No	Not sure
Highway	( )	( )	( )
Rail	( )	( )	( )
Marine	( )	( )	( )
Air	( )	( )	( )

## H.SPECIFIC TO Congestion/Mobility/System Performance: PERFORMANCE MEASURES

**H3. Which Congestion/Mobility/System Performance related performance measures does your agency produce?**

- Congestion
- Reliability
- Delay
- Incident management
- Signal system
- Other (please specify): \_\_\_\_\_

## TARGET SETTING

**CommonQ11. When establishing targets for PERFORMANCE AREA X, what is the level of coordination with other entities in selecting targets.**

Rating	Scale
( )	<b>Nonexistent</b> – State DOT and other organizations/agencies impacted by PERFORMANCE AREA X do not communicate effectively
( )	<b>Moderate</b> - State DOT and organizations/agencies impacted by PERFORMANCE AREA X communicate but are not aware of each other's view of performance expectations for the region
( )	<b>Somewhat Effective</b> – State DOT and other organizations/agencies impacted by PERFORMANCE AREA X share their respective performance expectations but do not collaborate on a shared vision for the region
( )	<b>Generally Effective</b> – State DOT and other organizations/agencies impacted by PERFORMANCE AREA X collaboratively work together to program investments that support generally shared performance expectations. Absent agreements, each implements programs based on shared expectations.
( )	<b>Very Effective</b> – State DOT and other organizations/agencies impacted by PERFORMANCE AREA X work together in a collaborative manner to decide on performance expectations for a region. All agree to program investments in support of this shared expectation of performance

**CommonQ12. Your agency has developed short term quantifiable *PERFORMANCE AREA X* performance targets that can be used to guide program investment decision making**

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
( )	( )	( )	( )	( )

## PLANNING AND PROGRAMMING

**CommonQ13. Indicate the degree to which *PERFORMANCE AREA X* performance targets impacts actual investment decisions**

*Please select the current the level of linkage between program investments and the performance target using a 1 to 5 scale.*

1. No link	2. Minor Linkage	3. Some Linkage	4. Moderate Linkage	5. Strong Linkage
( )	( )	( )	( )	( )

**CommonQ14. Select your current capability to predict the outcome of *PERFORMANCE AREA X* programming decisions on the following scale:**

1 – accurate data driven models	2 – empirical based models	3 – predictions based on historical trends	4 – unable to predict outcomes
( )	( )	( )	( )

**CommonQ15. Does your agency conduct evaluate the before and after performance outcomes on completed *PERFORMANCE AREA X* projects?**

Never	Rarely	Sometimes	Often	Always
( )	( )	( )	( )	( )

**CommonQ16. Select your current capability: To what extent do you coordinate with other investment decision making entities on the development of investment plans and the programming of *PERFORMANCE AREA X* projects?**

No Coordination	Limited Coordination	Moderately Coordinated	Completely Coordinated	N/A
( )	( )	( )	( )	( )

**CommonQ17. Have you been able to successfully use a performance based justification to acquire additional funds to support *PERFORMANCE AREA X* transportation needs? Please Explain**

- ( )No
- ( )Yes
- ( )Partially

**D.SPECIFIC TO SAFETY: PLANNING AND PROGRAMMING:**

**D7. What criteria are used to prioritize safety projects for programming and implementation? (Check all that apply)**

- Effectiveness assessment of similar program/strategy (e.g., HSIP evaluation affects future project selection)
- Cost
- Project readiness
- SHSP
- All crashes with no indication of safety

- Only fatal crashes
- Only fatal and serious injury crashes
- All crashes with weighting to reflect severity
- None
- Other (please specify): \_\_\_\_\_

**D8. To what extent does your agency effectively coordinate with the SHSO on HSIP efforts?**

- 1: Nonexistent – State DOT and SHSO do not communicate effectively
- 2: Ineffective - State DOT and SHSO communicate but are not aware of each other's view of Safety performance expectations for the region
- 3: Somewhat Effective – State DOT and SHSO share their respective safety performance expectations but do not collaborate on a shared vision for the region
- 4: Highly Effective – State DOT and SHSO collaboratively work together to program investments that support generally shared Safety performance expectations. Absent agreements, each implements programs based on shared expectations.
- 5: Very Highly Effective – State DOT and SHSO work together in a collaborative manner to decide on Safety performance expectations for a region. All agree to program investments in support of this shared expectation of performance

**E.SPECIFIC TO BRIDGE: PLANNING AND PROGRAMMING**

**E3. Describe impact of expansion of National Highway System on the State agency Bridge programs.**

- Massive –Major changes to funding and project prioritization efforts?
- Significant – Changes to planning and management but little impact on funding.
- Moderate –Minor adjustments to State programs and funding program essentially unchanged

**F.SPECIFIC TO PAVEMENT: PLANNING & PROGRAMMING**

**F4. What criteria are used to prioritize pavement projects for programming and implementation? Check all that apply**

- Greatest need of attention
- Scheduled treatment interval
- Single year prioritization
- Multi-year prioritization
- Incremental cost benefit
- other

**F5. Describe impact of expansion of National Highway System on the State agency pavement programs.**

- Massive –Major changes to funding and project prioritization efforts?

Significant – Changes to planning and management but little impact on funding.

Moderate –Minor adjustments to State programs and funding program essentially unchanged

## G.SPECIFIC TO FREIGHT: PLANNING AND PROGRAMMING

### G2. Does your agency have a MAP- 21 compliant Statewide Freight Plan?

Yes

No

Not Sure

## I.SPECIFIC TO ON-ROAD MOBILE SOURCE: PLANNING AND PROGRAMMING

### I1. Do you currently or regularly develop quantitative emissions estimates for your CMAQ projects?

Yes

Sometimes

No

Not Sure

### I2. How do you plan to transition to quantitative emissions estimates?

I am waiting for FHWA to develop a toolkit for estimating emissions

I have a contractor on board to help develop emissions estimates

My staff has the technical capabilities to develop quantitative estimates

I have no plan to transition from the current qualitative analyses

Other (please specify): \_\_\_\_\_

### I3. Some project types have historically never had a quantitative emissions estimate, such as public education, marketing, and operating assistance. How do you plan to quantify these benefits?

I am waiting for FHWA to tell me how to estimate emissions for these types of projects

I have a contractor on board to help develop emissions estimates for these types of projects

My staff has the technical capabilities to determine the best way to quantify emissions for these types of projects

I have no plan to start developing quantitative emissions estimates for these types of projects

I have no plan to transition from the current qualitative analyses

Other (please specify): \_\_\_\_\_

### I4. How do you capture benefits and report emissions benefits for a group of projects or bundle of projects? (select the most applicable response)

I didn't know we could group projects

- Only report qualitative benefits
- Based on some assumptions about co-benefits from the group of projects
- Other (please specify): \_\_\_\_\_

**J. SPECIFIC TO: TRANSIT SAFETY AND TRANSIT STATE OF GOOD REPAIR SUPPLEMENT:**

**J3. Does your agency have a plan that addresses TRANSIT SAFETY?**

- Yes
- No
- Underway
- Not Sure

**J4. Does your agency have a transit asset management plan that addresses TRANSIT STATE OF GOOD REPAIR?**

- Yes
- No
- Underway
- Not Sure

**MONITORING, ANALYSIS, AND REPORTING**

**CommonQ18. With what frequency does your AGENCY routinely report INTERNALLY on performance outcomes and progress made toward the achievement of specific targets of performance?**

No Internal Reporting	Monthly	Quarterly	Annually	Other
( )	( )	( )	( )	Specify

**CommonQ19. With what frequency does your AGENCY routinely report EXTERNALLY on **PERFORMANCE AREA X** performance outcomes and progress made toward the achievement of specific targets of **PERFORMANCE AREA X** performance?**

No External Reporting	Monthly	Quarterly	Annually	Other

No External Reporting	Monthly	Quarterly	Annually	Other
( )	( )	( )	( )	Specify

**CommonQ20. How are the *PERFORMANCE AREA X* performance results (outcomes, progress meeting targets, etc.) communicated?**

Method	Internal	External
Management Meetings	( )	( )
Quarterly reports	( )	( )
Dashboards	( )	( )
Annual Reports	( )	( )
Fact Sheets	( )	( )
Action Plans	( )	( )
Newsletters	( )	( )
Other	( )	( )

## CAPACITY BUILDING

**CommonQ21. Please indicate the areas that your agency will likely need assistance for TPM practices related to *PERFORMANCE AREA X*.(check all that apply)**

- Data usability & analysis
- Data management
- Performance measure development
- Target setting
- Connecting system performance information to various transportation plans
- Linking performance information to programming decisions
- Performance monitoring
- Performance reporting & communication
- External collaboration
- Organizational and cultural resistance to TPM practices

**CommonQ22. To address the need for TPM technical training related to *PERFORMANCE AREA X* identified in the previous question, what capacity building format would benefit you and other agency staff members the most?**

- Specific training/workshops
- Courses (NHI or similar),
- Guidance
- Guidebooks



- Webinars,
- Performance Plans and Documents Templates
- Tools
- Other: \_\_\_\_\_

# Outline of the National TPM Implementation Review Data Collection and Analysis Design

The primary goal of the National Transportation Performance Management (TPM) Implementation Review is to gather information about the application of performance management, performance based-planning and programming principles, and other MAP-21 performance provisions at State Departments of Transportation (State DOTs) and Metropolitan Planning Organizations (MPOs). The data collection effort will help identify training and capacity-building resources to support the implementation of TPM practices across the transportation industry. The data collection effort will be administered twice; first in 2016 and again in either 2017 or 2018 so that progress in the development and application of TPM capabilities may be measured, and so that additional capacity building tools can be created. As stated in the 60 day Federal Register Notice published 6/23/2016, the intention of the National TPM Implementation Review is to establish a baseline to assess:

1. Implementing MAP-21 performance provisions and related TPM best practices; and
2. The effectiveness of performance-based planning and programming processes and transportation performance management.

The second National TPM Implementation Review will be conducted several years later and will be used to assess FHWA and its partners' progress addressing any gaps or issues identified during the first review. The findings from the first review will be used in a pair of statutory reports to Congress due in 2017 on the effectiveness of performance-based planning and programming processes and transportation performance management (23 U.S.C. 119, 134(l)(2)- 135(h)(2)). The findings from the second review will be used in a subsequent follow-up report. It is important to note that this is not a compliance review. The overall focus of the National TPM Implementation Review is on the TPM and performance-based planning processes used by STAs and Metropolitan Planning Organizations (MPOs), not the outcomes of those processes.<sup>1</sup>

TPM implementation will require State Dots and MPOs to collaborate with FHWA on the development of transportation performance measures related to national goals. The State DOTs and MPOs will then need to work with FHWA to operationalize these performance measures by developing performance targets and determine what constitutes significant progress. Transportation agencies will also be required to report on and explain performance results. Across all aspects of TPM, the State DOTs and MPOs will need to work collaboratively with each other and with FHWA, and they will need to collect, maintain, and manage the performance data.

The National TPM Implementation Review will seek to provide quantitative and coded qualitative data from open ended questions that can be summarized to spur further discussion of the resource and guidance needs of transportation agencies. It is believed that State DOTs and MPOs have a general understanding of TPM practices and have begun implementation, but it will be beneficial to

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1 <http://www.regulations.gov/#!documentDetail;D=FHWA-2015-0013-0001>

have a better understanding of specific capabilities, progress, challenges and needs. The assessment will collect data from State DOT and MPO staff regarding:

- Self-assessments of their capabilities to implement performance management and status of their current practice;
- Perceived priorities of different aspects of performance management;
- Understood benefits and drawbacks of TPM practices;
- Identification of key challenges of TPM implementation from the perspective of the Partner Organizations;
- Assessment of needs and interest in receiving training, guidance resources, and technical assistance;
- Preferences among alternative means for providing capacity building and training; and
- Evaluation of TPM components by specific performance areas (e.g., safety, bridge, pavement).

The analysis of the assessment results will provide quantitative assessments and comparative analyses of the:

- Partner Organizations' readiness to implement TPM;
- Partner Organizations perceived usage and their perception of the effectiveness of the performance-based planning and programming process
- Gap analysis identifying disconnects between TPM principles and agency capabilities; and
- Partner Organizations' prioritization of potential capacity building and training efforts.

The following is an outline of the assessment data collection plan.

## National TPM Implementation Participants

**Survey Sampling:** The assessment will be based on:

- A census (100 percent sample) of 52 State Departments of Transportation (DOTs),
- A stratified random sample<sup>2</sup> of urbanized areas from which metropolitan planning organizations (MPOs) will be drawn, and
- Follow-up data collection with the same respondent organizations in 2017 or 2018.

**State DOT Data Collection:** As the assessment will seek to include all State DOTs, no formal sampling strategy will be required for this respondent group. A recent preliminary assessment of the state transportation agencies by FHWA had full participation, so we expect that we will have a high response rate of 80 percent or more. With a response rate of 80 percent (42 agencies), the 90 percent confidence level margin-of-error for population proportion estimates would be at most plus or minus 6 percent. With a response rate of 90 percent (47 agencies), the 90 percent confidence level margin-of-error for population proportion estimates would be less than plus or minus 4 percent. We believe this minimum response would adequately enable FHWA to identify

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<sup>2</sup> With a stratified random sample strategy, we divide sampling units into separate groups (strata) that are likely to have less variability within them than the overall sampling population has. Then, each group is randomly sampled separately. Weighting of results is required to account for the sizes of the strata and differential sampling rates, but the stratified sampling increases the efficiency of the sample, so results can be more precise than for a simple random sample.

and quantify state transportation agency levels of readiness, areas of concern, and training and resource needs.

**MPO Data Collection:** The MPO survey participants will be drawn from urbanized area strata based on the represented metropolitan areas' population, air quality characteristics, and planning organization representation. Since many regulatory requirement thresholds are related to area population and Environmental Protection Agency (EPA) air quality conformity assessments, these thresholds are likely to reflect differences in the surveyed agencies' level of sophistication and exposure to performance management based planning concepts.

The urbanized area strata will include:

- Stratum 1: Areas of more than one million population;
- Stratum 2: Areas of less than one million population that have air quality non-attainment issues;
- Stratum 3: Areas of between 200,000 and one million population that do not have air quality non-attainment issues;
- Stratum 4: Areas represented by MPOs with less-than-200,000 population that do not have air quality non-attainment issues;

The sampling frame for this assessment will be finalized through the combination of several available federal databases:

- Census Bureau Urbanized Area List;
- the MPO database maintained by FHWA; and
- EPA Greenbook, which records air quality conformity issues by region.

Based on our preliminary processing of these sources, the populations of urbanized areas by strata are about the following:

- Stratum 1 – 50 regions;
- Stratum 2 – 63 regions;
- Stratum 3 – 112 regions; and
- Stratum 4 – 183 regions.

These population estimates will be reviewed and corrected prior to final sample selection to ensure that the assignment of regions by type is accurate, but by using these estimates for planning for the sampling, we would propose to sample:

- Stratum 1 – include all 50 regions in sample;
- Stratum 2 – include all 63 regions in sample;
- Stratum 3 – include 100 regions in sample;
- Stratum 4 – include 120 regions in sample;

The lower sampling rates for the third and fourth strata are proposed for the practical purpose of ensuring that valid contacts can be identified for all assessment participants. In previous MPO surveying efforts, delivering email invitations to the most relevant personnel at smaller agencies was more difficult because of higher staff turnover and greater complexity in organizational structures and agency hosting arrangements.

The MPOs from the selected regions in strata 1 to 4 will be contacted to complete the survey. A recent web-based survey of Census data specialists at MPOs conducted for AASHTO yielded a response rate of 27 percent. Another recent survey of MPOs conducted for FHWA regarding the organizational structure of the agencies had a response rate of 36 percent. The National TPM Implementation Assessment is expected to have a comparatively strong response rate, because of the importance of the data collection topic to the mission of the MPOs and because of the full range of survey design measures that will be employed to minimize non-response bias that are described in later sections below, most notably:

- The survey topic will be of greater importance to the target respondents, the agencies' Executive Directors, as the topic will affect many of the agencies' business practices;
- The survey invitation will come from a more prominent sender from FHWA;
- We will seek to have pre-notification, and hopefully endorsement, of the data collection effort be provided by national planning organizations, such as NARC and AMPO, and by State DOTs;
- The survey pre-notification and follow-up protocols will be robust and will include both email and telephone contact.

Because of these survey data collection features, we are expecting that the MPO survey response rate will be in the 35 to 45 percent range. For planning, we assume a response rate of 35 percent, though we will seek to achieve the highest possible rate. The 35 percent rate would yield about 117 valid responses.

At this level of return, the 90 percent confidence level margin-of-error for population proportion estimates would be at most plus or minus 6 percent. We believe this minimum response would adequately enable FHWA to identify and quantify MPO levels of readiness, areas of concern, and training and resource needs.

**Follow-Up Data Collection:** A follow-up survey of the same partner organizations will be conducted in 2017 or in 2018. Respondents from the initial State DOT and MPO assessments will be re-contacted for the follow-up assessment. When organizations that complete the initial assessment do not respond to the follow-up assessment, we will seek to identify and recruit similar organizations that did not participate in the initial data collection (either because they were not sampled or because they refused to be included in the initial effort) to participate in the follow-up. The resulting follow-up assessment sample will allow for longitudinal analyses (with attrition replacement).

**Respondent Selection within Partner Organizations:** One of the important challenges of the National TPM Implementation Assessment will be to identify the best people within the sampled agencies from whom to collect information. The initial State DOT contacts will be the individuals previously identified by FHWA for the previous initial assessments.

The default MPO principal points-of-contact will be the Executive Directors. However, as part of the State DOT assessment, we will ask the State DOT contact for the names and contact information of MPO staff from sampled urbanized areas within the state that she or he believes will be best able to respond to the MPO assessment. We will also ask for input from AMPO.

Each of the partner organization assessments will be seeking information that may reside with multiple staff members at the State DOTs and MPOs. Consequently, a survey strategy that involves

multiple points of contact will be required. The approach envisioned is to send the main survey invitation to the key points-of-contact, described above, and allow them to complete the subsections of the survey themselves or to identify others in the Agency or Department that should complete the program topic area specific subsections of the survey.

### **Advantages of this approach:**

- More likely to capture data from the staff members that are knowledgeable of specific Agency or Department capabilities
- Multiple perspectives from each Agency or Department can better identify specific issues and concerns
- Increased interest in the TPM implementation and in the Assessment effort throughout the Agencies and Departments

### **Disadvantages of this approach:**

- Potential biases may be introduced by letting the primary respondents select the subsection respondents
- Multiple perspectives from each Agency or Department could be contradictory
- Potential difficulty in gaining perspectives on prioritization between different roles and responsibilities to implement TPM requirements within program areas

In our view, the benefit of reaching the most knowledgeable staff outweighs any potential biases introduced by having the main respondents select the subsection respondents. The multiple perspective approach also reflects the fact that TPM touches on many disciplines within an Agency or State DOT. To address prioritization across the many roles and responsibilities associated with TPM requirements within the system performance areas, the survey will include general prioritization questions for the main respondent to answer, and more specific subsection questions for other sub-respondents.

## **National TPM Implementation Assessment Process**

The data collection effort will consist of the following steps:

### **State DOT Assessment:**

- FHWA Office of TPM and Division Office staff will alert State DOT contacts that a web-based survey is being developed that will help with determining needs and priorities for TPM training, guidance resources, and technical assistance
- The project team will develop an invitation email with a link to the State DOT survey. The FHWA OPM Director will send the email invitation with a link to the main survey to the State DOT contacts
- If no response is received after seven days, an automated reminder email invitation with a link to the survey will be sent to the State DOT contacts
- After seven more days, a second automated reminder email invitation with a link to the survey will be sent to non-respondents
- If still no response is received, the project team will place a telephone call reminder asking the State DOT contact to either complete the web-based survey or to set up an appointment to complete it by phone

- As part of the main survey, the State DOT contacts will be given the option to identify the best person within their agencies to complete each of the subsections of the survey, which will be based on the anticipated State DOT's TPM roles
- The survey software will then automatically email the referenced people invitations to complete surveys with the identified survey subsections
- The same follow-up protocols will be followed for the subsection survey respondents as for the main surveys

### **MPO Assessment:**

- FHWA Office of TPM and Division Office staff will alert the MPO contacts of an upcoming web-based assessment. If the State DOT contacts do not provide a contact for an MPO, the MPO Executive Director will be the point-of-contact
- The project team will develop invitation emails with links to the MPO survey. The FHWA OPM Director will send the email invitation with a link to the surveys to the MPO contacts
- If no response is received after seven days, an automated reminder email invitation with a link to the survey will be sent to the MPO contacts
- After seven more days, a second automated reminder email invitation with a link to the survey will be sent to non-respondents
- As part of the main surveys, the MPO contacts will be given the option to identify the best person within their agencies to complete each of the subsections of the survey, which will be based on their agencies' anticipated TPM roles
- The survey software will then automatically email the referenced people invitations to complete surveys with the identified survey subsections
- The same follow-up protocols will be followed for the subsection survey respondents as for the main surveys

### **State DOT and MPO Assessment Results Analyses & Report:**

- Responses will be monitored throughout the data collection process to identify any issues as promptly as possible and to track data collection progress
- Upon completion of the web survey data collection, we will code open-ended question responses and identify any responses that require telephone follow-up clarification
- The first output of the readiness assessment effort will be topline tabulations and cross-tabulations of the web survey questions
- A report of the assessment results will then be prepared for review and approval by FHWA. The report shall include detailed quantitative and qualitative analysis of the survey results
- The raw assessment data will also be submitted to FHWA in a simple excel workbook.

### **Follow-up State DOT and MPO Assessments:**

- FHWA Office of TPM and Division Office staff will alert the State DOT and MPO respondents from the initial assessments of the upcoming web-based follow-up assessments.
- The project team will develop invitation emails with links to the State DOT and MPO follow-up assessments. The FHWA OPM Director will send the email invitation with a link to the follow-up assessments to the State DOT and MPO
- If no response is received after seven days, an automated reminder email invitation with a link to the survey will be sent to the MPO contacts
- After seven more days, a second automated reminder email invitation with a link to the survey will be sent to non-respondents
- If still no response is received, the project team will place a telephone call reminder asking the contact to either complete the web-based survey or to set up an appointment to complete it by phone

- As for the initial assessments, the State DOT and MPO contacts will be given the option to identify the best person within their agencies to complete each of the subsections of the survey, which will be based on their agencies' anticipated TPM roles
- The survey software will then automatically email the referenced people invitations to complete surveys with the identified survey subsections
- The same follow-up protocols will be followed for the subsection survey respondents as for the main surveys

### **Follow-up State DOT and MPO Assessment Analysis & Report:**

- Responses will be monitored throughout the data collection process to identify any issues as promptly as possible and to track data collection progress
- Upon completion of the web survey data collection, we will code open-ended question responses and identify any responses that require telephone follow-up clarification
- The first output of the readiness assessment effort will be topline tabulations and cross-tabulations of the follow-up assessment web survey questions
- In addition, a comparative analysis of the initial assessment and follow-up assessment results will be developed
- A report of the follow-up assessment results will then be prepared for review and approval by FHWA. The report shall include detailed quantitative and qualitative analysis of the survey results.
- The raw follow-up assessment data will also be submitted to FHWA in a simple excel workbook.

## **Selection of data collection mode**

The National TPM Implementation Assessment efforts lend themselves to a web-based survey approach with in-person follow-up because:

- the survey audiences are well-connected to the Internet and reachable via email,
- the objective of the assessments is to collect largely quantitative data which leads to the use of primarily web-survey friendly closed-ended question types
- data consistency checks can be performed as the data are collected, rather than in a separate post-survey cleaning task
- although the assessment will not have a large sample size, the multiple point-of-contact survey data collection protocol will require extra care that can be better managed through an online approach

## **Selection of survey data collection software**

The proposed survey software platform is Survey Gizmo.

<http://www.surveygizmo.com/>

Specific advantages of this platform compared to other online survey data collection options<sup>3</sup>:

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<sup>3</sup> A full list of Survey Gizmo features is available at <https://www.surveygizmo.com/survey-software-features/#complete-features>.



- Wider range of question types than most online survey options, including group questions, matrix questions, and experimental design choice exercises
- Custom scripting capabilities
- Flexible page and question logic and skipping
- Style themes by device type
- Email campaign tools
- Response tracking, reporting, and multiple data export formats (CSV, Excel, SPSS, etc.)
- Greater range of respondent access controls than other online products
  - Allowance of save-and-continue
  - Duplicate protection
  - Anonymous responses
  - Quota setting
  - Restrictions on going backward
  - Section navigation
- Greater range of administrator roles and collaboration features than other products

The Section Navigator is particularly critical for the Partner Organization assessment because it will enable the primary points-of-contact to separate the assessment into sections to make it easy for different respondents to complete different parts without interrupting or overwriting one another. Simply stated, the Section Navigator enables one Partner Organization to be completed by multiple people. For example:

**Navigation**

Section	Status	Actions	Invite Colleague to Complete
HealthCare	Not Started	<a href="#">Answer</a>	<input type="text" value="Email Address"/> <input type="button" value="Send"/>
Finance	Not Started	<a href="#">Answer</a>	<input type="text" value="Email Address"/> <input type="button" value="Send"/>
Contact Information *	Not Started	<a href="#">Answer</a>	<input type="text" value="Email Address"/> <input type="button" value="Send"/>

Source: Survey Gizmo documentation, 2014.

An example of a recent survey conducted in Survey Gizmo:

<http://www.surveygizmo.com/s3/1775738/AASHTO-CTPP-Survey-a>

## National TPM Implementation Assessment and Follow-up Assessment Content

The initial and follow-up assessments will include questions about TPM in general, performance-based planning and programming (PBPP), and Asset Management. In addition, a set of questions related to data, measures, targets, programming, and reporting will be asked for six performance areas (safety, bridge, pavement, freight, congestion/mobility/system performance, and on-road mobile source emissions). As warranted by each performance area, additional questions will be included. Questions about capacity building needs will be included in the general TPM section, PBPP section and system performance area sections.

Assessment questions will be based on:

For additional information contact [michael.nesbitt@dot.gov](mailto:michael.nesbitt@dot.gov), 202-366-1179 p49

- Draft survey questions developed by FHWA staff
- Comments from FHWA staff on PBPP
- Comments from FHWA staff on Asset Management
- Comments from FHWA staff on Safety
- Comments from FHWA staff on Bridge
- Comments from FHWA staff on Congestion/Mobility/System Performance
- TPM Capacity Maturity Model (Task 2) developed under FHWA's TPM Technical Assistance Program
- TPM Implementation Guidebook (Task 3) developed under FHWA's TPM Technical Assistance Program
- FHWA Division Survey (Task 4) developed under FHWA's TPM Technical Assistance Program

The Assessment and follow-up Assessment will include:

- Scale questions regarding State DOT and MPO levels of preparedness, relative importance, and challenges with following TPM components:

<b>Component</b>	<b>Definition</b>
Strategic direction	The establishment of an agency's direction through well-defined goals and objectives and a set of aligned performance measures.
Target Setting	The use of baseline data, information on possible strategies, funding constraints, and forecasting tools to collaboratively set targets.
Performance-based planning	The use of agency goals, objectives, and performance trends to drive the development of strategies and priorities in mid and long range plans.
Performance-based programming	The use of strategies and priorities to guide the allocation of resources to projects selected to achieve goals, objectives, and targets.
Reporting & communication	The products, techniques, and processes used to communicate performance information to different audiences for maximum impact
Monitoring & adjustment	Processes to track and evaluate actions taken and outcomes achieved that establish a feedback loop to adjust planning, programming, and target setting decisions.
External collaboration	Established processes to engage and collaborate with agency partners and stakeholders on planning/visioning, target setting, programming, data sharing, and reporting.
Data Usability & Analysis	The existence of useful and valuable data sets and analysis capabilities, provided in usable, convenient forms to support TPM.
Data Management	The means by which an organization efficiently plans, collects, creates, organizes, uses, controls, stores, disseminates and disposes of data to ensure that the value of the data is understood and fully exploited.

Component	Definition
Organization & Culture	Institutionalization of a performance management culture within the organization, as evidenced by leadership support, employee buy-in, and embedded organizational structures and processes that support performance management.

- Scale question regarding agency’s general assessment of TPM as a business practice
- Scale questions regarding State DOT and MPO levels of preparedness, relative importance, and challenges with the implementation of PBPP
- Scale questions regarding staffing, levels of preparedness, relative importance, and challenges with implementing TPM practices for specific performance areas.
- Open-ended questions regarding the need for training, guidance resources, and technical assistance. “What specific training, guidance resources, and technical assistance activities would benefit your agency the most?”
- Prioritization of general technical assistance activities. “Speaking generally, which of the following technical assistance activities should FHWA be prioritizing the most in order to best support your agency?”

Given the estimated length of the assessment, the number of open-ended questions will be kept to as low a number as possible.

The web survey instruments for the assessments are envisioned to consist of:

- A main survey directed at the principal contacts at the State DOTs, and MPOs regarding TPM in general
- A survey section dedicated to PBPP
- A survey section dedicated to Asset Management
- Sub-sections based on six performance areas:
  - Safety,
  - Bridge,
  - Pavement,
  - Freight,
  - Congestion/Mobility/System Performance and
  - On-road mobile source emissions.

## Survey Question Construction

The development of the survey instrument will be an interactive process, beginning with FHWA review and editing of the data elements listed above. As data elements are settled, specific question wording will be developed. Each question and associated response categories will be evaluated along the following dimensions:

- Lack of focus
- Bias
- Fatigue
- Miscommunication

## Bias limitation and detection

It will be important to limit the amount of time needed for respondents to completely respond to the National TPM Implementation Assessment. Fatigue and loss of interest affect survey completion rates, data quality, and open-ended response completeness and thoughtfulness. We will seek to limit the main survey completion time to 20 minutes and subsection survey completion times to no more than 15 minutes each.

Where possible, response category orders will be randomized to limit bias.

Survey page timers (not visible to respondents) will be used to identify potential understanding problems (unusually long page dwell times) and potential loss-of-interest problems (unusually short page dwell times)

## Testing the Draft Survey

**Survey instrument diagnostics:** Survey software includes built-in capabilities to evaluate the web-based survey instrument:

- Fatigue / survey timing scores
- Language and graphics accessibility scores

**Generation of survey test data:** Once the survey is drafted, we will generate hypothetical synthetic output datasets. This will enable us to correct response category problems and to ensure that the output data will support the tabulations and analyses we expect to perform on the actual data set.

**Office pretest:** Prior to engaging the Partner Organizations, we will generate an email invitation link to a test survey and distribute it to Spy Pond Partners and FHWA staff that are knowledgeable of the survey topics but that were not involved in the survey development. We will seek their input on the survey questions and identify potential improvements to the survey.

**Field pretest:** Because the National TPM Implementation Assessment will be distributed to all State DOTs and most MPOs, a full dry-run survey field pretest cannot be used.

Instead, we will schedule about five of the FHWA Partner agencies (State DOT and/or MPOs) assessments to be delivered earlier than the rest of the assessments. We will review results of the early assessments as they are completed to evaluate comprehension and cooperation levels. We will contact early respondents by phone to ask if they had any specific issues that could be fixed. We will make necessary changes for the full assessment release, and if necessary re-contact early respondents to collect any data elements that were not in the early survey.

## Analysis of Results

### Data review

As the data are collected, we will review responses for validity

- Survey response patterns (such as straightlining, etc.)
- Page completion times
- Completion of closed-ended and open-ended survey responses

- Internal consistency checks
- Data outlier review

## **Tabulations**

- Topline results
- Cross-tabulations
- Cluster analysis to group partner organizations by similarities, if feasible

## **Analyses**

- MaxDiff priority measurement
- Gap analysis (training needs versus capabilities)
- Open response coding
- (Follow-up assessment only) Longitudinal (before-after) comparisons of initial assessments and follow-up assessments

The MaxDiff priority measurement approach is a discrete choice data collection and analysis method where respondents will be asked to select the most important and least important priorities among several experimentally designed lists. The respondent selections will be used to model the relative prioritization of roles and responsibilities, as well as potential capacity building strategies. More direct rating scale questions have the appeal to respondents of being easily understood, but the ratings are commonly affected by response effects, such as respondents scoring many potential responses as the highest priority. In addition, responses to scales can vary from person to person. Consequently, relying only on scale questions can be problematic. Choice exercises, such as MaxDiff, help to alleviate many of the problems of scale questions.

## **Survey Data Files and Tabulation**

- Access to the assessment results will be given to FHWA staff to support additional data analysis and summary efforts. Through this access FHWA staff will be able to provide individual respondents upon request.
- The raw assessment data will also be submitted to FHWA in a simple excel workbook.

## **FHWA's National TPM Implementation Assessment Report**

- An analysis report will summarize the results of the assessment including key findings that can be used to inform the TPM Implementation effort
- Given that the report audience is internal and external stakeholders, only aggregated information will be included in the assessment report. Reports for individual respondents will not be developed. However, access to the assessment data will enable FHWA staff to produce respondent level reports upon request.