

SHRP 2 Reliability Project L17

**Gap Filling Project 6:  
Business Case Primer  
Communicating the  
Value of Transportation  
Systems Management  
and Operations**

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**Gap Filling Project 6:  
Business Case Primer Communicating the  
Value of Transportation Systems  
Management and Operations**

**TRANSPORTATION RESEARCH BOARD**

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## Developing and Using a Business Case Message: A Primer

### Introduction

With limited financial resources and increasing demands for transportation improvements from the public and politicians, transportation systems management and operations (TSM&O) is gaining momentum as an essential function of state departments of transportation (DOTs) and focus of congestion management for metropolitan planning organizations (MPOs). The industry has long used specific TSM&O strategies to fix targeted trouble spots on the transportation system, but only recently has TSM&O emerged as a separate discipline within the industry and, in a few cases, a separate organizational unit within transportation agencies. Practitioners who work within TSM&O understand the significant benefits to mobility and safety of the transportation system and are committed—even passionately committed—to advancing TSM&O integration into the core mission of DOTs and MPOs. Unfortunately, it has been difficult to explain the rationale for integrating TSM&O, the TSM&O business case, to the right people at the right time to advance integration comprehensively.

The challenges to effective communication of TSM&O integration are significant:

- Defining or describing TSM&O. The definition of TSM&O has been evolving over the last 10 years. Because many TSM&O strategies are drawn from traditional DOT functions such as traffic engineering, safety, construction, and even maintenance it has been hard to communicate that TSM&O is something different that needs to be recognized as a separate function. Defining TSM&O and describing why and how it is unique and valuable within a DOT represents a significant communication challenge.
- Communicating why TSM&O is important. Today the mission of DOTs is shifting. It's not just about building and maintaining roads, but also about squeezing maximum benefit from the transportation system that exists today. Often the public, key stakeholders, and partners don't think about operating or managing the transportation system—it is simply an existing part of the infrastructure. How well the system functions day-to-day isn't noticed until some event causes a significant system breakdown. For practitioners, TSM&O communication often has to begin with messages to educate the audience that operating and managing the transportation system is just as important as improving or adding capacity.
- Capturing the attention, interest, and commitment of executives and leaders who must support TSM&O integration. Politicians, the public, and even some senior executives at DOTs put a high value on the more traditional responsibilities of the DOT—delivering projects. While individual TSM&O strategies can be implemented piecemeal through many offices and programs at a DOT, integrating TSM&O as a core function requires a commitment of financial and staff resources as well as high-level endorsement internally and externally to help promote the benefits and value of TSM&O. TSM&O practitioners

need to know how to take maximum advantage of limited opportunities to introduce TSM&O to executives and leaders.

- Diversity and complexity of the audience that needs to hear the TSM&O message. Unlike many DOT functions, TSM&O does not generally have a dedicated program or single funding source. Instead, individual TSM&O improvements are funded from a variety of programs. Therefore, TSM&O proponents have to be able to tailor information about the benefits of TSM&O to a wide variety of program areas in order to convince their peers that investing in TSM&O strategies can also help them achieve their own priorities.
- Institutional challenges. Across the country, the transportation industry has a few senior leaders who “get it”; however, the vast majority of the proponents of integrating TSM&O are at the mid-management levels within their agencies. Their positions within the DOT organizational structure give them limited access to the decision makers, both executive and political, who are in a position to champion TSM&O integration broadly. In addition, they are engineers or planners who have worked in the field and have seen results but have limited training in communication and even less in change management. Yet these are the people—the passionate and committed practitioners of TSM&O—who are in the best position to convince their peers, executives, politicians, and the public that operating and managing the transportation system delivers real and significant benefit to users of the system, and, therefore, should be part of the core mission for any transportation agency.

This guide has been developed to help you, a proponent of TSM&O, communicate effectively about why TSM&O is an important part of the DOT mission. The emphasis here is on effectively. Defining communication is straightforward: it is a message developed by one individual or group (the promoter) that is delivered to other individuals or groups (the audience). ***Effective communication goes beyond simple delivery of a message. It requires that the audience hears, understands, and acts on the message.*** For communication to be effective it must resonate with the specific interests of the audience. If it doesn't resonate, there is no effect: the audience does not act on the message.

This primer will help you effectively communicate your message about the value and benefits of TSM&O so that key decision makers and your peers will actively support TSM&O implementation and integration within your agency. It provides simple guidance that will assist you in identifying your target audiences and the reasons to implement TSM&O that will best resonate with each of them. It reviews the various types of opportunities for communication—informal and formal—that are common at DOTs and recommends some strategies for being ready to deliver your message whenever the opportunity is available. In addition, the appendices have effective sound bites and messages that can be used to jump-start the development of a business case for your agency and include links to resources that can help you prepare a variety of effective communication materials to support your communication effort. In summary, the



goal of this primer is to provide you with the who, what, when, and how to communicate successfully the business case for TSM&O.

## **The Brand Promise: Defining Tsm&O**

Before you can communicate a business case for TSM&O, you need a very clear and concise message about what it is you are promoting. TSM&O is a newcomer as a separate recognized function for DOTs. At the national level it has emerged as a distinct and separate discipline but the industry has yet to even agree on what it should be called. “Operations,” “system operations,” “transportation systems management and operations (TSM&O),” “systems operations and management (SO&M)” are all used by different parts of the industry. There is also no clear consensus in the industry on what DOTs are delivering to their customers when they implement TSM&O. From a communication perspective, this is a significant problem. It is difficult to convince people of the benefits of something if you cannot clearly describe it.

One way to address this problem is to create a brand promise: a concise, simple-to-understand statement of who is the customer, what product or service is provided to that customer, and what outcome will result. TSM&O practitioners and leaders from across the country worked together to craft a brand promise that is broad enough to describe TSM&O nationally:

We promise travelers and shippers that we will manage traffic and incidents as well as provide timely and accurate travel information so that they can make informed decisions to minimize their unexpected delay and improve the safety of their travel.

As a TSM&O communicator, it is important that you really focus on this brand promise; it defines what it is you want to promote to your peers and decision makers. These concepts are

**Customers:** *Travelers and shippers* are both important customers of TSM&O.

**Products and services:** *Managing traffic, managing incidents, and providing information* cover the broad range of potential TSM&O strategies.

**Outcomes:** *Minimizing unexpected delay and improved safety* are reasonable and achievable outcomes for TSM&O.

The TSM&O brand promise has a unique concept; it articulates *an explicit role for the customer*: making informed decisions. As an industry we need to leverage the ability of our customers to make choices that help us minimize unexpected delays, one of our outcomes. With the right information, customers can make choices about how and when they travel, as well as what route they use if their trip is on the road. When aggregated, their individual choices can have an impact on the unexpected delay for other travelers.

**But why is this brand promise so important?** Because you are not the only one communicating the business case for TSM&O. Your peers both inside and outside your agency, locally, regionally, and nationally, are also making the case, and the audiences overlap and merge at many levels. Individuals in the audience need to hear a consistent message. When they do, everyone is leveraging the time devoted to promoting TSM&O and increasing the likelihood that each audience will not just hear the message, but also will act on it.

Does this mean that everyone promoting TSM&O has to use the exact same words to communicate the brand promise? No, they do not, but everyone should be focusing on the same customer, product, services, and outcome concepts. The brand promise concepts were carefully crafted to have broad applicability to any agency that is part of implementing TSM&O. As long as the core concepts are included, any DOT or MPO can tailor the words to fit their agency's TSM&O focus.

## **Effectively Communicating the Case for Change**

With a clear understanding of the brand promise for TSM&O, developing an effective communication message or strategy can be broken down into three basic questions:

1. Who is the audience?
2. What matters to your audience?
3. What are your opportunities to engage the audience?

Selecting the right business case and refining it for the specific audience will evolve from answering these questions. The primer provides simple guidance on identifying your target audiences, linking your messages to what matters to them, and using a format that maximizes the impact of your message, given the time you have with the audience.

There is one thing to keep in mind as you use this primer. This is not a cookie-cutter approach. Each transportation agency and each locale is different, so it is important to tailor the message to your agency and the local context using familiar language and local examples. The examples and messages provided in this guide and its appendices are only the starting point for creating ready sound bites and one-liners, as well as presentations and supporting communication materials that will help your TSM&O implementation gain momentum over time.

## **Who is the Audience**

Your communication goal is to convince people of the benefits of TSM&O and move them to act to support its implementation. Your audience may be people internal to your agency, external decision makers or stakeholders within your state or region, or even your peers and decision makers on the national scene. Given the range of possible audiences, the messages and

communication tactics you use may be very different. So the foundation of effective communication is *know your audience*—who they are and what they can do to help advance the implementation of TSM&O.

This question may strike you as too basic—almost intuitive—but it is an important building block to talk to the right people, about the right things, at the right time to convince them to act in some way to support TSM&O. Some questions to help you identify the right people include

1. What individual or group can help me advance TSM&O (target audience)?
2. Do they make or recommend decisions about funding for TSM&O?
3. Are these target audiences part of my network?
4. If not, who do I know who can help influence them?

These last two questions are very important. You have access to a network of people—internally and externally—that you can influence to act in some way to advance TSM&O. These are your potential target audiences. While this network may include individuals at many levels of authority or position, it is unlikely that you will know or have access to all of your potential target audiences. Your best alternative may be to leverage people who are in your range of influence to help carry the TSM&O message forward to others. If you provide your audience with information that matters to them, they will internalize the message and pass it forward into their personal network. This is a very bottom-up approach to change, but word of mouth, particularly from peer-to-peer or trusted staff, is one of the most effective ways to create momentum for change.

STEP 1 – IDENTIFY YOUR AUDIENCE	
✓	Determine whom you have the ability to influence and whom they influence
✓	Segment your audience into investment decision makers and implementers
<b>Outcome = you know your key target audiences</b>	

The professional audiences that can help you advance the implementation of TSM&O can be divided into two broad categories:

- people who recommend or make decisions about spending money on TSM&O solutions (investment decision makers) and
- people who implement TSM&O strategies (implementers).

These distinctions are important because, as you will see in the next section, the issues that matter, and therefore the messages that will compel them to act, may be quite different.

Often practitioners assume that money decisions are made by individuals at the policy levels for their organization, for example, agency senior leadership, board members, or elected officials. In fact, individual TSM&O projects can be implemented by a wide range of funding sources, where the investment decision maker is a manager or a mid-level position within the

organization. Implementers, on the other hand, have limited ability to even influence the allocation of resources. Their job is to work within the resources provided by investment decision makers to plan, design, or implement TSM&O improvements. This group includes a broad range of transportation professionals. For example, implementers such as transportation planners and project development engineers identify and evaluate TSM&O strategies at the plan and project level with implementation at some distant future. In contrast, implementers such as traffic engineers and transportation management center staff deal with congestion in real or near real time—they focus on dealing with the congestion that travelers are facing today. These differences in responsibilities and time frames make a significant difference in the perception of TSM&O benefits, even though both are implementers. As you consider this distinction, start grouping people who are key to helping you advance TSM&O into one group or another, maybe both. The following example may help you get started in identifying which individuals are implementers and which are investment decision makers.

### Potential Target Audience Segmentation

Target Audience	Decide or recommend funding?	Has the ability to implement TSM&O strategies or policies?
Sarah Jones, Chief Engineer	Yes—decides budget allocation for all engineering programs; recommends lists of projects to include in a Transportation Improvement Program (TIP)	Not directly—establishes budgets for funding categories. Approves changes to project implementation as required.
John Smith, Assistant Chief Engineer	Yes—recommends allocation of state funds among state funded programs	Not directly—supervises those who implement
Mary Henderson, Safety Program Manager	Yes—recommends allocation of safety program funds to individual projects	No—provides direction to safety program leads for implementation of specific activities
Harrison County MPO Board	Yes—approves improvements to be put in long-range plan and projects to receive funding in MPO TIP	No—makes high level funding allocations that staff will implement
Carrie Peterson, DOT liaison to Harrison County MPO	No—provides information to decision makers for funding decisions	Yes—supports development of the MPO long-range plan

When you interact with others on a regular basis, it is easier to know their values and tailor the message to them specifically. The trap that many people fall into when identifying potential audiences is that they only think about the people they know well. Among your daily working relationships are those with roles, responsibilities, or interests very similar to yours. Most of these individuals do not need to be convinced of the value of TSM&O. Instead, as you identify potential audiences, think more broadly to include those who work in other areas of your agency or in other organizations that have responsibilities or a role that is important to implementing TSM&O.

It is also important to include key decision makers. Depending on your responsibilities and where you are in your organization, it may not feel comfortable to consider communicating with executive leaders or policy makers. However, these individuals and groups are very important to advancing TSM&O, and they need to understand its benefits and actively support its implementation. If these decision makers are not part of your network, be sure to identify individuals or groups that you already know who can help you communicate and build them into your target audience identification. The key at this point is to identify as many people or groups as possible who can help you advance TSM&O.

Below is an example of a simple table that can help you begin to collect information about your key target audiences. The purpose of this table is (1) to determine whether a potential individual or group falls into the investment decision maker or implementer category; and (2) whether this audience is part of your existing network, and, if not, who can help you reach this audience.

### Initial Target Audience Identification

1	2	3	4
Target Audience	Decide or recommend funding?	Part of my Network?	If no, then who can help me (“Influencer”)?
Sarah Jones, Chief Engineer	Yes—decides budget allocation for all engineering programs; recommends lists of projects to include in a TIP	No	John Smith, Assistant Chief Engineer
John Smith, Assistant Chief Engineer	Yes—recommends allocation of state funds among state funded programs	Yes	
Mary Henderson, Safety Program Manager	Yes—recommends allocation of safety program funds to individual projects	Yes	

Harrison County MPO Board	Yes—approves improvements to be put in a long-range plan and projects to receive funding in an MPO TIP	No	DOT Planning and Programming Division Director; Carrie Peterson, DOT Liaison to Harrison County MPO
Carrie Peterson, DOT liaison to Harrison County MPO	No	Yes	

Column 1 is the name of the person or group that is one of your target audiences. These are audiences that have a role in advancing TSM&O within your agency (internally) or your region, state, or nation (externally). The second column identifies whether or not they have a role in funding, so you can identify if they are an investment decision maker or an implementer. The third column indicates whether you have direct access to the target audience. If you do not have direct access to a target audience, column 4 helps you identify individuals or groups that can help you gain access. This should be someone whom your target knows and listens to, an influencer.

Since your final list will be much longer, you will need to set some priorities for your TSM&O communications strategy. Perhaps some audiences are more important because their support would help advance TSM&O more quickly. In other cases, you may need to talk to an influencer before you will have access and credibility with a key individual or group. This prioritization may be obvious to you, but here are a few questions that can help you screen your list into the people and groups you need to talk to first:

1. Which of these target audiences must support TSM&O for it to be implemented successfully (key target audience)?
2. Which of the key target audiences is part of your network, so you can gain access easily?
3. Which of the influencers (column 4) can be most helpful in gaining access to a key target audience?

### Outcome of Key Target Audience Identification

<b>Key Target Audience</b>
<b>Investment Decision Makers</b>
Sarah Jones, Chief Engineer
John Smith, Assistant Chief Engineer
Mary Henderson, Safety Program Manager
<b>Implementers</b>

In this example, notice that at this first round of communication, Sarah Jones is not considered a key target audience. This is not to imply that getting your message to the chief engineer is not important, but rather that your first step will be convincing her trusted assistant, John Smith, of the value and importance of TSM&O. Setting priorities for your communication is not just about who you already know. In fact, if you use this approach you will most likely be preaching to the choir, only talking to people who already know and understand the benefits of TSM&O. Your focus should be on which groups or individuals have the most impact on advancing TSM&O and then thinking through the most efficient and effective way to get your TSM&O business case message to them. These key target audiences may not always be in your first round of communication. The most effective way to reach them may be through an influencer, so your first job may be to convince the influencers, so they can help you.

At this point, you will have become skilled in segmenting your potential target audience into the two broad categories of investment decision maker and implementer. In addition, you will have identified the key individuals within your personal network who are essential to advancing TSM&O. As you consider the question of “who is my audience?” remember to also identify any external or sub-audiences that may be important. In some instances, you may wish to communicate the value of TSM&O to someone who has a unique role or very individual interests. For these sub-audiences, the message will require tailoring to both the style of communication and interests.

As you move into the next section of the primer, your effort will be focused on understanding the concerns and issues of your key target audience. Honing your initial long list into key target audiences is important to give you the most significant payback in terms of advancing TSM&O, given the time you have to spend on communicating the TSM&O business case.

### **What Matters to My Audience?**

Often transportation practitioners try to communicate the business case by demonstrating their technical expertise and talking about their personal passion for TSM&O. Effective TSM&O communication isn't about telling people how it has solved **your** problems, it is linking TSM&O solutions to **their** problems. Your goal is to know your target audience well enough that you can anticipate their answer to the “what's in it for me?” question before you initiate your communication. So once you have identified the key target audiences, the next step is figuring out what matters to each one.

To begin, list what you do know about the audience responsibilities and issues. Add to this by asking questions and gathering information from people within your network. Asking questions and listening are the most important skills in answering the question “what matters to my audience?” Congestion is not the same issue for every one of your key target audiences. The purpose of this questioning and listening is to try to identify the slice of congestion that is important to each key target audience. The issues and problems each audience deals with will be different depending on their overall responsibilities (investment decision maker vs. implementer); a long-term (planning for the future) or short-term (real-time traffic congestion) focus; financial resources available; or others that are specific to your agency or specific to the audience. Try to hone in on the two or three most pressing issues, challenges, or problems related to congestion that each audience is already aware of and concerned about. Getting to the most compelling reason to implement TSM&O is a matter of identifying the most compelling problem the audience faces that can be solved with a TSM&O strategy.

STEP 2 – LEARN WHAT YOUR AUDIENCE CARES ABOUT	
✓	Identify your audience’s responsibilities and hot-button issues
✓	Match TSM&O solutions to your audience issues
<b>Outcome = you have talking points for each key target audience</b>	

Once you have a basic understanding of the general responsibilities of your key target audience here are some potential questions to answer:

- Do their responsibilities primarily focus on the long term (10+ years), midterm (3 to 10 years), or near term (present to 2 years)?
- How do they actually spend their time? What areas of their responsibilities are most important to them?
- What congestion-related issues or concerns have they talked about in the last 12 months?
- What special groups or committees do they belong to where TSM&O might be advanced?

To help you tailor your questions, some common problems which TSM&O can effectively address are listed below. These example problems, which speak to a variety of target audiences, can be a starting point; but remember to consider how these work within your context. Reword or add new issues based on listening and asking questions to make it more meaningful to your agency and your target audiences.

*Non-recurring delay* due to crashes, construction, weather, and other events is a significant part of the problem with regard to congestion. Estimates identify this impact as high as 60% of congestion.



*Insufficient funding* is the new transportation reality. It is essential to make the most of the present system before adding new infrastructure.

*Capacity-adding projects often have huge environmental impacts*, which delay project development as well as construction.

*Businesses rely on predictable travel time for delivery of their supplies and their products*, and economic health within communities across the nation depends on the transportation system.

*Demands for results, accountability, and demonstrated performance are growing.* Measuring the performance of the transportation system requires data and analysis that are not broadly available at the planning and programming level.

This is a high-level list of real problems that could be the core of responding to the “what’s in it for me?” question for each of your key target audiences, but you need to validate which one or two of these will be most compelling for each of them. It is easy to see that some of these problems will resonate with investment decision makers while others speak more directly to those responsible for implementing decisions made.

Below is another table which can help organize what you already know or can learn by talking with others about their issues. These problems and their associated solutions will form the core of your communication to each key target audience.

### Key Target Audience Problems and Solutions

Key Target Audience	Problems	TSM&O Related Solution
<b>Investment Decision Makers</b>		
Senior Executives (Secretary/CEO and Executive Team)  <i>Your example:</i> John Smith, Assistant Chief Engineer	Lack of resources to do everything needed on system  Political/citizen pressure related to accidents and congestion in large urban areas across the state	Overall TSM&O strategies cost less and can be implemented faster than new construction
Branch or Division Managers and Project Planners  <i>Your example:</i> Mary Henderson, Safety Program Manager	Environmental process and/or permitting delaying even small projects	Overall TSM&O strategies have limited or no environmental impacts
<b>Implementers</b>		

<p>Long range planners</p> <p><i>Your example:</i> Carrie Peterson, DOT liaison to Harrison County MPO</p>	<p>Lack of revenue to address projected needs over next 25 years</p>	<p>TSM&amp;O solutions cost less and can be implemented faster than building new capacity to address growing demand</p> <p>More cost effective TSM&amp;O solutions stretch projected funding so more projects can be included in the plan or TIP</p>
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Notice that instead of specific individuals this table focuses on groups. Where did those groups come from? As you begin to research the problems of your key target audiences, you will begin to see similarities or trends. Where there are similar roles, problems and issues, the solutions and ultimately the messages for your communication will be the same. Grouping individuals will both streamline the development of your communication messages and strategies for your initial communication and allow you to use the material you develop now for *audiences as long as the roles and problems are similar*.

Appendix A has examples of problems and TSM&O-related solutions. Again, these should be tailored to your context. Validate that these are issues that resonate with your key target audiences and add to the list as needed.

As you identify problems and group individuals for communication efforts, remember to also identify any unique concerns that do not easily fit into the groups. For example, the primary concern of safety personnel within the agency is to reduce crashes through implementation of practices that enhance safety. TSM&O strategies can be highly supportive of these goals, especially in the reduction of secondary crashes. This unique and specific interest means that safety personnel are one of your sub-audiences. Broadly consider who needs to support TSM&O strategies and policies in your agency, state, or region. Information in the appendices will help you hone the message for each audience, and you will become more skilled at tailoring this to your individual needs with practice or assistance from others.

STEP 3 – PREPARE FOR OPPORTUNITIES	
✓	Develop sound bites and messages for your audiences
✓	Select the right message format for any opportunity
✓	Consider materials to support your messages
<b>Outcome = you are ready to make the most of all opportunities</b>	

### What are My Opportunities to Engage the Audience?

Once you have identified the priority target audiences and your core messages for each, you need to identify opportunities to deliver your message. As transportation practitioners, we often think of communication as individual events—a single presentation or brochure. Effective

communication is not just one contact or a single event. The more opportunity you have to explain how current problems can be addressed with TSM&O solutions, the more convincing the business case will become and the more likely your target audience will take action.

Communication opportunities are both formal and informal. Formal opportunities are communication that is scheduled in advance or communications that you plan proactively. Examples include a meeting, formal presentations or work group sessions, and newsletters. Informal opportunities are those that occur unexpectedly. These can be verbal, for example bumping into a key person at the coffee pot or on the elevator, or written, such as responding to an e-mail query. Formal opportunities are nearly always scheduled in advance, and therefore you will know who will be attending and how much time you will have to deliver your message. The advance notice will give you the opportunity to prepare a presentation or handout or even to simply review and further refine your messages for the specific individual or group. Informal opportunities can occur almost anywhere with a single individual or with a group. These opportunities are likely to be brief—perhaps as quick as 30 seconds—so they are opportunistic. This is where really understanding what is important to each of your key target audiences pays off. If you only have a moment, you want to lead with your most compelling message. Your goal in this situation will be to stimulate interest so the person wants to know more.

For both the formal and informal opportunities, there is an essential resource that every practitioner should have at hand: the sound bite. Sound bites are short phrases which capture the essence of the message in a way that is immediately understood and memorable. Good sound bites are excellent ways to talk about the benefits or solutions that TSM&O has to offer your target audiences. While the concept within a sound bite may be the same, the specific words may vary across your key target audiences. The ideal sound bite is easy for you to remember and memorable for your key target audiences. In formal communication, sound bites are often captured as tag lines or banner headlines. In short informal communication it may be the only message you have time to deliver, so these need to capture the essence of “what’s in it for me” for your key target audiences. Appendix B lists examples of sound bites that have been captured from transportation websites. In general, the shorter the sound bite, the better. Sound bites need to be tailored to use words or phrases which have meaning within individual agencies. Finally, expect your sound bites to evolve over time. As you use them, evaluate how effective they are, and tweak them as you get feedback.

Appendix C provides a sample communication template that gives you a starting point for communicating with each of the two primary target audiences. This template uses some likely effective sound bites for two opportunities: the 30-second informal opportunity and the 15- to 20-minute presentation. Building this type of template for each of your target audiences will help you ensure that you are consistent with identified audiences no matter what the opportunity or the format.

It is also important to have a range of communications methods or mechanisms in your communication toolkit. The types of opportunities you have to communicate will drive the type of delivery mechanism you use. These methods can be very standard, such as slide presentations, newsletters, or brochures, or they may be highly creative methods, such as using your Facebook and LinkedIn contacts or submitting an opinion article or feature story idea to the local newspaper or radio station. Understanding your audience is essential to picking the right mechanism. If it is a formal opportunity, it is a good idea to talk with the organizer to get information about what the audience expects or what has been effective in the past. Appendix D provides a list of web resources that can help you identify communication mechanisms and provide tips on good communication techniques.

Putting all the pieces of your business case together may look something like this:

<b>Key target audience</b>	<b>Problem</b>	<b>Solution Sound Bite</b>	<b>Opportunities</b>	<b>Methods</b>	<b>Potential Strategies</b>
Investment Decision Maker—Division Engineer	Identifying funding sources to solve common types of problems	Resources are constrained and improvement projects are costly long-term solutions. TSM&O solutions will improve the system in the near term at a lower cost.	Staff meeting, specific project that I lead	<ul style="list-style-type: none"> <li>• Sound bites for staff meetings</li> <li>• Brief message for recommendations</li> <li>• Slide presentation for project status</li> </ul>	<ul style="list-style-type: none"> <li>• One-page handouts for project status</li> <li>• Slides to add to presentations</li> <li>• Article for project newsletter</li> </ul>
Implementer—Project Development Engineer	Project schedule and milestones. Getting buy-in from required participants including resource agencies.	Environmental issues can stall or stop new construction, but TSM&O strategies avoid environmental impacts with a quickly implementable solution.	Meetings for project. In the hallway, at the gym, or other casual meeting. Intra-departmental teams.	<ul style="list-style-type: none"> <li>• Sound bites for project /casual meetings</li> <li>• Brief message for project recommendations</li> </ul>	<ul style="list-style-type: none"> <li>• Handout for project recommendations</li> <li>• Article for project newsletter</li> </ul>
Implementer—Planner	Identifying project solutions for the long-range plan. Local input into project decisions.	There are relatively low-cost TSM&O solutions that help minimize unexpected delay for travelers.	Committee or project meetings. Meet for lunch.	<ul style="list-style-type: none"> <li>• Sound bites for meetings</li> <li>• Brief message for recommendations</li> <li>• Presentation information when there is extra time (lunch, other)</li> </ul>	<ul style="list-style-type: none"> <li>• Handout of potential benefits for the long-range plan</li> <li>• Slide presentation for policy committee if opportunity arises</li> </ul>

You now have the foundation of your TSM&O business case communication strategy. You know

- Who can help you advance TSM&O
- What problems or issues are important to them
- How TSM&O can help them address these problems or issues
- What opportunities you have to engage them
- What communication methods would be most effective

## **Summary**

The best strategy for communicating the TSM&O business case is to act like a Boy Scout: “Be prepared.” The effort put into understanding your audiences and tailoring your messages so they compel these audiences to act can make a lasting impact within the agency. Communication in support of TSM&O is more than the words selected. It relays an idea or a vision for the future supported by the *why, how, when, and where* aspects that are needed to create change.

It is not hard to agree with a good idea. The difficulty is in understanding the range of actions that are required to implement the idea. The business case message provides an entrance for TSM&O into conversations that enable you to provide more depth of understanding. This information then becomes a resource to assist those with the power to implement. It is neither a hard sale nor a quick fix. The message which resonates will take time to ripple through the organization. However, as the number of proponents of TSM&O continues to grow, the change will likely occur more rapidly and have the power to become decisions that stick rather than a passing special interest.

## **APPENDICES**

**Appendix A. Business Case Messages for Target Audiences**

**Appendix B. Effective Communication Messages**

**Appendix C. Transportation Systems Management and Operations: Why it Matters**

## Appendix A. Business Case Messages for Target Audiences

**Table A.1. Investment Decision Makers**

*Individuals who make recommendations or decisions related to allocating funds for improvements*

<b>Problem or Issue</b>	<b>Solution</b>	<b>High-Level Messages</b>
Growing congestion and travel disruptions due to crashes, construction, weather, and other events makes it increasingly difficult for transportation agencies to provide safe and efficient travel on the highway system.	We have learned that we cannot build our way out of congestion. Incident management, managed lanes, synchronized signals, active traffic management, and other specific strategies are available to keep traffic moving.	TSM&O policies and strategies offer immediate benefits at lower cost than new construction to address congestion.
Major traffic disruptions and emergencies get attention, and transportation agencies are considered responsible.	You can lead your agency to capitalize fully on the potential of TSM&O—both to reduce delay and manage disruptions—by initiating a few actions. Disruptions related to weather, special events, and construction can be minimized at reasonable costs through the use of TSM&O.	TSM&O solutions can be quickly implemented to handle delay which results from unanticipated or non-routine traffic disruptions.
The way that our economy operates has become dependent on the transportation system. Traffic congestion is growing, and as the economy improves, it will get worse. Even minor incidents can cause major back-ups.	Innovative agencies across the country are demonstrating the increased potential of aggressive approaches. A small portion of your budget devoted to these strategies will result in an immediate improvement in congested areas.	Limited funding can be used efficiently through TSM&O strategies to support economic vitality by addressing congestion.
Resources to meet the transportation agency mission of providing mobility are constrained. Improvement projects that add infrastructure are costly, impacts can be substantial, and the lead times	TSM&O strategies have demonstrated success at reducing congestion and thereby increasing safety in the near term. These cost-effective solutions will improve the transportation system while	TSM&O offers immediate benefits through cost-effective solutions to congestion, while needed infrastructure is planned and programmed to provide the long-term solution to major transportation



are very long.	larger infrastructure investments are planned and programmed.	problems.
Reliability is increasingly important to key customers, such as freight providers and business travelers. Traditional infrastructure investments have a modest impact on reliability.	TSM&O targets reliability and delay, which represent a large percentage of the causes of congestion.	Unexpected delay is unacceptable to travelers and can be effectively addressed with TSM&O solutions.
Pressure on transportation agencies is mounting with demands for results, accountability, and demonstrated performance.	TSM&O systems and strategies are data driven and provide measurable results that can demonstrate accountability to a variety of audiences.	TSM&O investments provide measurable results to demonstrate a level of effectiveness and to illustrate agency accountability.

**Table A.2. Implementers**

*Individuals that implement improvements including both real-time operations and long-term related project development*

<b>Problem or Issue</b>	<b>Solution</b>	<b>High-Level Messages</b>
Traditional strategies that focus on adding capacity typically only address recurring congestion; however, non-recurring congestion has been demonstrated to be responsible for a large portion of the congestion problem.	Well-understood and quickly implementable TSM&O strategies are available to address both recurring and non-recurring congestion. Strategies include incident and active traffic management, managed lanes, synchronized signals, and others.	Congestion that results from non-recurring delay can be effectively addressed by strategies such as incident and traffic management, signal timing, and other TSM&O strategies.
Major traffic disruptions and emergencies get attention, and transportation agencies are considered responsible.	Many of the TSM&O strategies apply to disruptions and emergencies. New levels of collaboration, both internally and externally, are necessary to make the most of these opportunities.	Collaboration across agency disciplines and with external partners can support strategies to reduce traffic disruptions.
Practitioners must operate the system in a way that makes the most effective use of the	Research has added substantially to our knowledge of congestion, its causes, and	Advances in technology and a better understanding of congestion demonstrate the

existing infrastructure by minimizing disruptions, operating the network to its fullest capacity, and providing accurate traveler information	solutions that work. Some states are demonstrating the potential of new concepts and technology. There are many resources available to advance TSM&O.	potential for TSM&O solutions to make use of existing infrastructure in order to operate the transportation network to its fullest capacity.
Opportunities to address congestion, reliability, and safety through widening and adding roads are costly, impacts can be substantial, and the lead times are very long.	TSM&O can often postpone the need for major capacity additions or reduce the scope of the improvement to limit the overall cost and reduce congestion more quickly.	TSM&O solutions can support necessary capacity additions through immediate improvements that may reduce the cost and scope of long-term enhancements.
Reliability is increasingly important for freight providers. Freight travel represents a growing percentage of freeway travel where congestion has its highest impact.	TSM&O strategies such as incident management, intelligent transportation systems (ITS), and managed lanes are effective on freeways and arterials. These strategies can be targeted to the areas of greatest need.	TSM&O strategies can be targeted to areas of greatest need such as freeways and highly traveled arterials.
Pressure on transportation agencies is mounting with demands for results, accountability, and demonstrated performance. Achieving higher levels of effectiveness requires processes that are documented, performance-driven, and supported by organization and leadership.	TSM&O strategies such as synchronized signal systems, managed lanes, and traffic management represent real-time solutions to areas of congestion. These strategies are data driven and provide measurable results that can demonstrate accountability to a variety of audiences.	Performance measurement is supported by the data provided through implementation of TSM&O solutions.

**Table A.3. Travelers**

*Both the traveling public and freight providers*

<b>Problem or Issue</b>	<b>Solution</b>	<b>High-Level Messages</b>
Public Traveler: The public perceives that adding new lanes is the only solution to traffic congestion.	Transportation agencies have strategies that help address congestion in the short term and without requiring new	Congestion can be effectively addressed by strategies that are less expensive and easier to implement than adding new

	travel lanes.	pavement.
Public Travelers and Freight Providers: Major traffic disruptions and emergencies reduce the reliability of everyday travel.	Real-time traffic information along with simple and effective tools that improve travel reliability and safety are becoming more widely available.	Providing drivers with real-time traffic information allows them to become part of the solution by helping them make choices about how, when, and where they travel.
Freight Providers: Businesses rely on fast, efficient freight movements and consumers expect timely, guaranteed deliveries.	Operational strategies make the most efficient use of our existing infrastructure to help optimize scheduling and route selection.	Strategies to manage and operate the transportation system protect the supply chain and help meet just-in-time delivery schedules in a safe and timely manner

**Table A.4. Traffic Incident Management**

*Individuals that respond to crashes, special events, and other emergencies including both transportation agency personnel and emergency responders*

<b>Problem or Issue</b>	<b>Solution</b>	<b>High-Level Messages</b>
Incident management requires collaboration across a diverse group—state DOTs, emergency responders, local government staff, and others.	Responder and public safety; quick clearance; and effective communications are the goal.	Transportation agencies have procedures to improve crash-scene safety and clear crash scenes more efficiently that require support from all partners
Congestion, particularly when it is unexpected, increases the risk that crashes will occur. Long incident duration increases the likelihood of secondary crashes.	Providing traveler assistance, identifying and responding quickly to incidents, and clearing crash scenes quickly are ways to reduce congestion related to crashes.	Strategies and programs based on real-time information and new technologies will help reduce response time and increase safety in the near term and at reduced cost.

**Table A.5. Transportation Safety Personnel** (example of an internal sub-audience)

*Individuals that respond to crashes, special events, and other emergencies including both transportation agency personnel and emergency responders*

<b>Problem or Issue</b>	<b>Solution</b>	<b>High-Level Messages</b>
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<p>When travelers are faced with an unexpected or unfamiliar situation, crash risk increases.</p>	<p>TSM&amp;O strategies improve safety by addressing congestion that is unpredictable.</p>	<p>Strategies that reduce conflict points, provide information to travelers, and allow quicker incident response are becoming more widely available.</p>
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## Appendix B. Effective Communication Messages

Existing Sources	Target Audience	Communication Messages
<i>American Association of State Highway and Transportation Officials (AASHTO)</i>	Investment Decision Makers; Implementers	Conditions on the transportation system are constantly changing in terms of demand and disruptions. The system must be operated so that it can adapt to this unstable environment.
<i>Association of Metropolitan Planning Organizations (AMPO)</i>	Investment Decision Makers	The quality of metropolitan transportation infrastructure—highways, bridges, airports, transit systems, rail, and ports—is a primary factor in American economic competitiveness.
<i>Federal Highway Administration (FHWA), Office of Operations</i>	Implementers	A better approach to operations on the transportation network is a viable and effective strategy to help improve traffic flow and meet growing travel demands.
<i>FHWA, Office of Operations</i>	Investment Decision Makers	We can do more to operate the transportation system so that it performs better to meet customer expectations, regardless of the demands placed on it.
<i>FHWA, Office of Operations</i>	Investment Decision Makers	The Texas Transportation Institute estimates that in 2001, 75 of the largest metropolitan areas experienced 3.5 billion vehicle-hours of delay, resulting in 5.7 billion gallons in wasted fuel and \$69.5 billion in lost productivity.
<i>Galvin Project to End Congestion</i>	Investment Decision Makers	Any city that ignores the threat and refuses to take up the challenge of eliminating congestion will find itself at an economic standstill by mid-century.
<i>I-95 Corridor Coalition</i>	Investment Decision Makers	Both the traveling public and economy have benefited [from ITS], and the results are saved time, saved money, and saved lives.
<i>Institute of Transportation Engineers—Management</i>	Implementers	Today’s transportation professionals are responsible for building, maintaining, and

Existing Sources	Target Audience	Communication Messages
<i>and Operations/ITS Council</i>		operating a transportation system that is safe, reliable, and secure for our customers.
<i>National Traffic Incident Management Coalition</i>	Implementers	Good traffic-incident management is built on strong operational partnerships between transportation and public safety. When we work together side by side every day to manage the routine incidents, we build the strong relationships and cooperative policies we need to manage the transportation impacts of major incidents.
<i>National Transportation Operations Coalition</i>	Investment Decision Makers	Managing and operating the transportation system are integral parts of a funding and staffing continuum that also includes planning, design, construction, and maintenance.
<i>Operation Green Light</i>	Implementers	Retiming traffic signals for changing travel patterns is a cost-effective way to ensure the public continues to benefit from past investments in our regional streets and highways.
<i>Research and Innovative Technology Administration</i>	Investment Decision Makers; Implementers	If we fail to leverage our research, congestion will worsen, opportunities to improve road safety will not be maximized, our environment will suffer, and transportation’s impact on climate change will be exacerbated.

## Appendix C. Transportation Systems Management and Operations: Why it Matters

**Audience: Investment Decision Makers**

### EFFECTIVE SOUND BITES

- TSM&O strategies help address congestion in the near term at a lower cost than options which require additional pavement.
- Traffic signal timing is rated one of the most cost-effective urban transportation improvements.
- Strategies that improve traffic flow and reduce congestion also reduce emissions and improve air quality.

### IMPORTANT FACTS

- The cost of adding lanes to an existing highway can be more than 10 times the yearly cost of effective management.<sup>1 2</sup>
- Road weather information systems can reduce traveler delay and lower crash rates by 7% to 83%.<sup>3</sup>
- Traffic incident management can decrease incident duration by 30% to 40%.<sup>4</sup>
- Electronic toll collection can yield substantial savings in travel time. A 10% to 30% participation rate in electronic toll collection yielded benefit-to-cost ratios from 2:1 to 3:1.<sup>5</sup>
- Traffic signal optimization can decrease delay substantially (13% to 94%) while improving safety at a fraction of the cost of infrastructure capacity expansion.<sup>6</sup>
- Transit signal priority can yield a 2% to 18% saving in transit running time and reduce the number of buses needed in service.<sup>7</sup>

### BRIEF MESSAGE (30–60 SECONDS)

Our economy depends on transportation improvements. Businesses rely on predictable travel time for delivery of their supplies and their products. Many of the causes of delay and disruption can be effectively and quickly addressed through aggressive transportation systems management and operations (TSM&O). Proven TSM&O strategies reduce congestion and increase safety in the near term. These cost-effective solutions will improve the transportation system while larger infrastructure investments are planned and programmed.

### PRESENTATION MATERIAL (15–20 MINUTES)

Our current paradigm of more complex, interrelated, and scheduled activities require a reliable transportation system. Businesses rely on predictable travel time for delivery of their supplies and their products. Time is money, and congestion is costing billions of dollars in lost time as people and freight sit in traffic. Our economy depends on transportation improvements.

Transportation agencies are required to make decisions about investments to both maintain and enhance the transportation system every day. Opportunities to address congestion, reliability, and safety through widening and extending roads are limited by time and money. Such projects are costly, impacts can be substantial, and the lead times are very long. Many of the causes of delay and disruption can be effectively and quickly addressed at modest cost through aggressive transportation systems management and operations (TSM&O). By implementing TSM&O strategies to enhance the system while new construction projects are planned and developed, the transportation system can work more efficiently and effectively now. A small portion of your budget devoted to these strategies will result in an immediate improvement in congested areas.

Today only a handful of agencies spend more than 2% of their overall budgets on TSM&O and even fewer have organized TSM&O programs and budgets. However, a few innovative agencies across the country are demonstrating the increased potential of aggressive approaches. You can lead your agency to capitalize fully on the potential of TSM&O—both to reduce delay and manage disruptions—by initiating a few actions.

- **Create a real program for TSM&O activities.** Identify a champion and/or a plan of effective strategies backed by clear organization and a practical budget.
- **Capitalize on new technologies.** Maintain full roadway capacity despite crashes and weather with traffic management and information systems.
- **Measure and report performance results.** This lets you know which strategies are producing results in order to invest future dollars most effectively. Report your results to build public confidence in your agency's capabilities to make a difference.
- **Bring others to the table in a TSM&O implementation partnership.** Transportation agencies cannot implement effective TSM&O without involving local governments and public safety agencies. These partnerships will expand your available resources.
- **Consider TSM&O practices in other agencies.** The successes and challenges of other agencies will help you build on successful existing strategies and introduce new ones.

TSM&O strategies have demonstrated success at reducing congestion and thereby increasing safety in the near term. These cost-effective solutions will improve the transportation system, while larger infrastructure investments are planned and programmed. Over the long term, operational improvements that manage traffic signals, travel lanes, work zones, and incidents, as well as provide real-time information to travelers, continue to enhance the transportation system as well as provide data on system performance.



## Audience: Implementers

### EFFECTIVE SOUND BITES

- It is important to make the most effective use of the *existing* infrastructure before adding capacity.
- Providing real-time information to travelers allows them to make choices about when and how they travel.
- ITS investments are quick to implement, create jobs, and offer environmental benefits.

### IMPORTANT FACTS

- Models estimate that smart work zones can reduce total delay by 41% to 75%.<sup>8</sup>
- Combined traveler information and incident management systems can increase peak period freeway speeds by 8% to 13%, reduce crash rates, and improve trip time reliability by 1% to 22%.<sup>9</sup>
- Managed lanes provide an option for more reliable travel and can significantly improve transit service speeds. Express lanes on I-95 in Miami resulted in express bus–route travel times falling from 25 to 8 minutes on a 7.5-mile section, and a 30% increase in route ridership.<sup>10</sup>
- Roundabouts are a strategy that can be used at unsignalized intersections that are experiencing high rates of right-angle, rear-end, and turning crashes. They can decrease fatalities at an intersection by 90%, reduce injuries by 76%, and reduce all crashes by 35%. They also help to improve traffic flow.<sup>11</sup>

### BRIEF MESSAGE (30–60 SECONDS)

Practitioners must operate the system in a way that maximizes the available roadway capacity and minimizes the impacts of unexpected events. Both recurring and non-recurring congestion can be successfully addressed in the short term with transportation systems management and operations (TSM&O) strategies. TSM&O strategies, such as synchronized signal systems, management lanes, and traffic management, can address growing congestion in ways that can be more quickly implemented for immediate impact.

### PRESENTATION MATERIAL (15–20 MINUTES)

Transportation agencies no longer have the luxury of building their way out of congestion. Practitioners must operate the system in a way that maximizes the available roadway capacity and minimizes the impacts of unexpected events. Successfully reducing the effects of congestion and unexpected delays requires three coordinated approaches: construction, preservation, and operation.

Strategies associated with transportation systems management and operations (TSM&O) increase the options for practitioners faced with the problem of growing congestion in ways that

are more quickly implemented for immediate impact. In a time of limited funding and shrinking resources, capacity additions must be targeted to those areas of highest priority where additional capacity represents an immediate need. TSM&O strategies such as synchronized signal systems, management lanes, and traffic management represent real-time solutions to areas of congestion. For example, bottlenecks represent as much as 40% of congestion. This type of congestion happens virtually in the same location and at the same time every day. TSM&O strategies can help alleviate bottleneck congestion while other needed improvements are planned and programmed.

In addition to areas with inadequate capacity, the problem of non-recurring congestion is also a significant strain on the transportation system. The main causes of non-recurring congestion are traffic incidents ranging from flat tires to overturned trucks with hazardous materials, work zones, and adverse weather. These causes of congestion can also be effectively dealt with through ITS and other traffic management strategies.

## Sub-Audience: Public Travelers

### DID YOU KNOW?

- For every minute a freeway lane is blocked, there is at least a 10-minute backup after the incident is cleared.<sup>12</sup>
- Congestion costs the average traveler an extra 38 hours of travel time and 26 gallons of fuel each year.<sup>13</sup>
- The cost of adding lanes to an existing highway can be more than 10 times the yearly cost of effective management.<sup>14 15</sup>

### WHAT'S NEW?

Simple and effective tools that improve travel reliability and safety are becoming more widely available. Changing speed limits based on road conditions, signals for safer freeway access, and electronic signs telling drivers what to expect are examples of these strategies. Here are some things you should know:

- Transportation agencies have new approaches that help keep traffic moving.
- New operational strategies will save you travel time and fuel expense.
- Technology and real-time information can be used to make travel more safe and reliable.
- Managing traffic flow costs less than the construction cost of adding lanes.

### ADDITIONAL INFORMATION

More and more drivers are facing longer trips at all times of the day. Constructing more roads has been the primary way to relieve congestion, but this option carries a heavy price tag and takes a long time to improve the situation. Fortunately, technological advances are providing more options to address congestion and at a lower cost. Using traffic signals, message signs, traveler information, and dedicated lanes, transportation agencies can make the most of existing pavement. These are examples of efforts that have been proven to lessen traffic jams by bringing traffic back to expected speeds, decreasing crashes, and improving response time to traffic incidents.

Providing drivers with real-time traffic information allows them to become part of the solution by making choices about how, when, and where they travel. Public awareness campaigns to educate drivers on various transportation options are becoming more popular. Initiatives to increase transit ridership are more commonplace. Changing business employers' perspectives with the advent of flexible work hours and telecommuting is another way to help reduce congestion.

The best way to combat this growing problem of congestion is to take a balanced and diversified approach. By getting as much service as possible from existing highways and avoiding unnecessary construction, dollars can be saved. This requires innovation, attention, and constant adjustment by transportation providers but will pay off in faster, safer, and more reliable travel. These operational options are real and successful solutions to major congestion problems. Drivers will notice the positive changes as these effective tools are implemented.

## Sub-Audience: Freight

### IMPORTANT FACTS

- Each day in 2008, across all modes, the national transportation system moved an average of 59 million tons of goods, worth \$46 billion. Logistics represent 9% of the nation's gross domestic product (GDP). Congestion is responsible for a 3% GDP loss.<sup>16</sup>
- Truck congestion in U.S. urban areas cost an estimated \$23 billion, nearly a quarter of the \$101 billion total cost attributed to urban congestion.<sup>17</sup>
- Existing operational strategies in use are estimated to save \$6.9 billion and reduce hours of delay by 6%. If a basic set of operational strategies were applied to all major urban freeways and streets, it is estimated they would save over \$15 billion and reduce hours of delay by 14% of the national total.<sup>18</sup>

### SHORT MESSAGE

Transportation and goods movement are the backbone of our economy and are heavily dependent on the efficiency and reliability of the transportation system. Businesses rely on fast, efficient freight movements, and consumers expect timely, guaranteed deliveries. Innovative strategies aimed at managing the transportation system are helping to meet these needs. These strategies support reliable, efficient, and safe goods movement by helping to reduce congestion. Providing more accurate information about travel conditions, enabling real-time decisions about routes and loads, and reducing the amount of time stopped while en route are outcomes of using these strategies. Shipping companies, businesses, and consumers all benefit from these investments.

### EFFECTIVE SOUND BITES

- Strategies to manage and operate the transportation system protect the supply chain and help meet just-in-time delivery schedules in a safe and timely manner.
- New transportation strategies make goods movements more predictable and efficient, translating into lower costs for goods and enhanced economic competitiveness.
- Real-time information about travel conditions, weather, and road work helps truck drivers to make informed, safe decisions about travel routes and schedules.

### ADDITIONAL INFORMATION

An efficient, reliable supply chain is essential in today's economy. Businesses rely on guaranteed deliveries to meet consumer demand. With the economy in recovery, freight traffic will also increase, continuing a trend from over the last several decades. The transportation system plays a vital role in the economy, providing the infrastructure for the trucks that move goods. Making that system work efficiently, smoothly, safely, and with the maximum reliability is essential for businesses and shipping companies to meet their customers' needs. Transportation professionals rely on operational strategies that manage the highway system in real time to achieve those

objectives. These strategies also provide information to drivers that allow them deal with congested conditions through their choice of route and time to travel.

Operational strategies make the most efficient use of our existing infrastructure and are essential to a vibrant economy. Freight strategies include advanced technologies that optimize freight movement scheduling and dynamic route guidance that uses information on traffic conditions to pick the fastest route in real time. With these strategies, trucking companies can reduce empty back-haul trips and spend less time on the roads. Fuel and time are additional savings, reducing costs for the shipping companies and providing environmental benefits to surrounding communities.

Better knowledge of travel conditions and fewer stops en route help truckers to move their goods more quickly and safely. Transportation technologies can provide information on crashes, weather, work zones, and other travel conditions, so that freight haulers can plan the best route and respond to changes in conditions once en route to their destination. This information also makes the trip safer for drivers by alerting them to conditions on the roadway ahead. Freeway service patrols and better coordination with emergency responders keep traffic flowing despite crashes and disabled vehicles. Along major freight corridors, special freeway service patrols are equipped to clear disabled trucks more quickly. Technologies like weigh-in-motion and open-road tolling reduce the stops that trucks have to make while traveling longer distances. In urban areas, new signal technologies help to reduce time spent waiting at traffic signals. For urban deliveries, shifting delivery times to off-peak hours can lead to significant savings in travel time, reduce traffic violations, and help drivers meet delivery schedules.

To realize the benefits of these strategies, freight companies and their customers are needed to help generate support for these transportation strategies as a valuable investment in our transportation system. Today only a handful of transportation agencies spend more than 2% of their overall budget on these operational improvements. You can encourage your partner transportation agencies to capitalize fully on these improvements by making transportation decision makers aware of your support for these strategies.

## Sub-Audience: Incident Management & Emergency Responders

### DID YOU KNOW?

- Traffic incident management can typically decrease incident duration by 30% to 40%.<sup>19</sup>
- The likelihood of a secondary crash increases by 2.8% for each minute the primary incident continues.<sup>20</sup>
- Signal priority for emergency vehicles can provide a savings of 30 to 45 seconds per intersection and reduce vehicle crashes at intersections by up to 60%.<sup>21</sup>

### YOU CAN HELP

Responder safety; safe, quick clearance; and effective communications are the goal. Transportation systems management and operations strategies can detect incidents faster and improve response time and safety for responders. These strategies can be quickly and cost-effectively implemented to help reduce incidents. Your support can influence transportation agency and government decision makers to adopt these strategies. Here are a few suggestions:

- Promote traffic incident management programs
- Insist on prompt, reliable notification of incidents
- Encourage implementation of new technologies and systems that provide information to drivers
- Communicate and coordinate with partners to develop common practices and procedures
- Set performance goals and measure effectiveness

### ADDITIONAL INFORMATION

Everyone involved in response to traffic incidents as well as planned events can understand the value of strategies that support quick and effective action. Promoting the use of strategies and programs that are based on real-time information and new technologies will help reduce response time and increase safety. The incident management community is diverse, bringing together partners from state DOTs, emergency responders, local government staff, and others. Building relationships and trust before incidents occur is essential to strengthening this partnership.

Transportation systems management and operations strategies have demonstrated benefits. Here are a few to consider:

- *Traffic incident management* includes procedures to improve crash scene safety and clear crash scenes more efficiently
- *Active traffic management* combines staff and technology to respond quickly to incidents and dispatch resources
- *Freeway service patrols* provide immediate assistance to travelers to reduce delay and congestion
- *Emergency vehicle preemption* on traffic signals identifies emergency vehicles approaching to clear the intersection
- *Specialized route guidance* helps responders get to and from emergencies faster

Congestion, particularly when it is unexpected, increases the risk that crashes will occur. Many strategies include providing information to travelers so that they can become part of the

solution. By making informed decisions about where and when to travel, motorists can avoid incidents whenever possible. Technologies like *message signs on roadways* and *real-time traffic maps* can be used to warn travelers of upcoming congestion to help reduce crashes. Data generated can also be used to detect crashes, so responders can be dispatched faster and more accurately. These same technologies can help manage traffic around planned special events.

Transportation systems management and operations strategies offer a lower cost and more quickly implementable approach to congestion than adding pavement. Sophisticated technologies are becoming increasingly affordable. When decision makers are deciding how to allocate funding, these strategies need to be considered. Today only a handful of transportation agencies spend more than a small amount of their budget on these operational improvements.

While funding is important, big money is not needed to make a big change. Systems and data already in place can be used to support these strategies. Traffic signals already in place may simply need re-programming. Service patrols may be expanded by one or two a year. You can encourage partner agencies—transportation, law enforcement, emergency responders, towing and recovery, traffic information media, and others—to capitalize fully on these strategies. Collaboration on practices and procedures as well as making decision makers aware of your support can make a difference.

## Sub-Audience: Safety Personnel

### IMPORTANT FACTS

- Traffic incident management can decrease incident duration by 30% to 40%. The risk of secondary crashes increases by 2.8% for each minute the primary crash continues to be a hazard.<sup>22</sup>
- Traffic signal optimization can decrease delay by 13% to 94%<sup>23</sup> while reducing speeding and red-light running at a fraction of the cost of infrastructure capacity expansion.
- Road weather information systems can reduce traveler delay and lower crash rates by 7% to 83%.<sup>24</sup>

### BRIEF MESSAGE

Traffic safety suffers in situations that demand more attention from drivers. Transportation systems management and operations (TSM&O) strategies can play an important role in making travel more predictable. Real-time information alerts travelers to congestion, allowing them to drive more safely and make better choices. Freeway and arterial management improves traffic flow, reduces conflict points, and helps clear incidents more quickly, along with the resulting congestion. Better functioning roadways are safer roadways for all users.

### EFFECTIVE SOUND BITES

- Operational improvements that help reduce congestion improve safety.
- Secondary crashes are reduced when responders are able to clear traffic incidents more quickly.
- Strategies such as access management and traffic calming improve safety by reducing conflict points and encouraging safe driving behaviors.
- Technologies that vary speed limits or alert drivers reduce crash risk.

### ADDITIONAL INFORMATION

When travelers are faced with an unexpected or unfamiliar situation, crash risk increases. Transportation systems management and operations (TSM&O) strategies improve safety by addressing congestion that is unpredictable. Vehicle crashes, bad weather, and special events can add significantly to congestion and reduced safety on the roadway. Traffic incident management includes strategies and procedures to detect, respond to, and clear traffic incidents faster so roadways return to normal operations sooner, and the risk of secondary crashes is reduced. Work zone management and traffic incident management also improve the safety of those workers and responders who are often in harm's way. Arterial and freeway management strategies improve traffic flow in congested areas to make travel more consistent, using strategies such as signal timing and ramp metering. Strategies often include the use of access management that reduces the number of conflict points.



The general public plays a central role in the safety and performance of the system by the choices they make. Providing travelers with an awareness of conditions allows them to make changes that increase safety for themselves and other drivers. Dynamic message signs and other traveler information strategies are used to advise motorists on existing and predicted roadway conditions, allowing them to make better choices before and during their trip.

TSM&O strategies can also reinforce safe travel behavior by reducing speed limits and modifying signal timing. Signal timing can be adjusted so that vehicles traveling the speed limit get all green lights along a corridor. This reinforces safer travel speeds and reduces red-light running. Technologies like bicycle detector loops and pedestrian countdown signals help bicyclists and pedestrian safely travel through intersections.

There are many ways to improve safety by reducing crash risk. The safety benefits of TSM&O strategies must be recognized and supported by the safety community in order to increase their use. Currently, only a handful of transportation agencies spend more than 2% of their overall budget on TSM&O and even fewer have organized TSM&O programs and budgets. You can encourage your agency to capitalize fully on the potential of TSM&O by including these strategies in safety planning and programs, and by making transportation decision makers aware of your support for these strategies.

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