

# Improving Transportation Systems Management & Operations: A Capability Improvement Workshop

This memo provides a summary of the day-long Transportation Systems Management and Operations (TSM&O) Capability Improvement Workshop conducted on September 20, 2012 at the Portland Metro Regional Center.

The purpose of the Workshop was to develop a consensus evaluation of the state of play and promising next steps in advancing the effectiveness of the region's TSM&O efforts. The Workshop participants identified the current levels of capability regarding key processes, organization, staff and collaboration issues that may assist the region in defining the priorities among an array of possible actions to improve regional TSM&O efforts.

A special Overview Session entitled "Street Smart Communities: Managing Great Places to Live, Work and Travel" was held prior to the workshop, providing background on TSM&O and its potential benefits to improving the environment and facilitating livability and sustainability.

The tables below provide a summary of the consensus issues and views of the participants in the Workshop regarding current level of capability and key improvement actions to get to the next level. The articulation of these views and comments are documented as brief bulleted points as they were made by participants, without interpretation by the facilitation team.

These summary tables identify the key actions needed to improve TSM&O in the Portland region. It can be used as the basis for a regional action plan and identification of key leads for each action.

In addition to the summary tables, several related items are attached:

- The pre-workshop background memo provided for the workshop attendees, describing the concept, intent and structure of the Workshop (Attachment 2)
- Attendees of the Workshop (Attachment 3)
- A partial list of attendees at the Overview Session (Attachment 4)

The workshop was facilitated by Steve Lockwood and Gary Euler of Parsons Brinckerhoff, with assistance from Reno Giordano of Parsons Brinckerhoff and Erin Flanigan of Cambridge Systematics. It is part of a series of workshops sponsored by FHWA. Further information on the concepts and guidance used in the workshop is available at [aashtosomguidance.org](http://aashtosomguidance.org).

## Improving Transportation Systems Management & Operations: A Capability Improvement Workshop

### DIMENSION: Business Processes (Planning and Programming)

Strengths Cited	Weaknesses Cited
<ul style="list-style-type: none"> <li>Oregon Transportation Plan addresses TSM&amp;O at high policy level, integrating regional and local plans</li> <li>In metro area, long-range plan contains goal for TSM&amp;O and TIP contains a set-aside for implementation</li> <li>ODOT STIP categories includes TSM&amp;O with a slightly broader focus</li> <li>Transport (operations group) in place for 20 years with broad participation, monthly meetings</li> <li>OTC makes decision on budgetary allocations to TSM&amp;O based on public input and local regions' lobbying</li> <li>Some recent cross-jurisdictional collaboration in planning for operations where capabilities can be leveraged</li> </ul>	<ul style="list-style-type: none"> <li>Public safety community only marginally involved in development of plans and procedures, including for incident management</li> <li>Planners' capability in operations/ITS varies by jurisdiction</li> <li>Portland metro region losing CMAQ funding, part of regional set-aside available to TSM&amp;O (after 2015, backfill from STIP ends)</li> <li>This funding loss impacts funding for Metro's operations planning position, which is experiencing shortages generally from other competing sources</li> <li>Funding streams identified in local plans in out years may or may not be ultimately allocated</li> <li>Voter funding initiatives have sometimes placed limits on how local funding can be spent</li> <li>TriMet does not have a single operations staff person, instead planners with limited operation backgrounds handle these activities - operational integration occurs on a jurisdiction-by-jurisdiction basis at the project level</li> <li>Challenges integrating ITS operations projects into capital projects - occasionally, they are the first components to be cut when reducing capital costs</li> </ul>

	LEVEL 1 PERFORMED	LEVEL 2 MANAGED	LEVEL 3 INTEGRATED	LEVEL 4 OPTIMIZING
Level Consensus	Each jurisdiction doing its own thing according to individual priorities and capabilities	Consensus regional approach developed regarding TSM&O goals, deficiencies, B/C, networks, strategies and common priorities	Regional program integrated into jurisdictions' overall multimodal transportation plans with related staged program	TSM&O integrated into jurisdictions' multi-sectoral plans and programs, based on a formal, continuing planning processes
Consensus			3	

**DIMENSION: Business Processes (Planning and Programming) - continued**

	Action
Actions to Advance to the Next Level	<ul style="list-style-type: none"><li>• Resolve funding a regionally-supported staff person for operations, including planning</li><li>• Improve regional coordination of project implementation - including "embedded" in other capital projects</li></ul>

## Improving Transportation Systems Management & Operations: A Capability Improvement Workshop

**DIMENSION: Systems and Technology**

Strengths Cited	Weaknesses Cited
<ul style="list-style-type: none"> <li>Concepts of Operations exist at the system level (e.g. corridors)</li> <li>Regional ITS architecture exists (dates to 2005-06)</li> <li>Transport group coordinates much of decision-making on architecture, with reference to regional architecture</li> <li>Statewide and regionally, same signal controller standard in place</li> <li>Other collaborative groups include signals, dispatchers</li> <li>Sharing of signal system control authority between ODOT and localities</li> <li>Regional priorities agreed on within Transport for signal system upgrades</li> <li>Central system communication software plan in place (since 1996)</li> <li>Building and sharing fiber done collaboratively through cooperative system development</li> <li>Common approach in place to updating central system software</li> <li>Regional TSM&amp;O allocation includes budget for communication equipment replacement</li> <li>Separately funded data sharing equipment</li> <li>New data sharing (CAD, 911) system being rolled out</li> <li>Overall, strong resource sharing culture</li> </ul>	<ul style="list-style-type: none"> <li>Need to update central software</li> <li>Public safety authorities not collocated in TMOC (Portland)</li> <li>Despite, culture of resourcing sharing, there is a lack of formality and dependence on champions</li> <li>Procurement process timescale out of synch with speed of technology development</li> <li>TriMet staffing issues for management and operations</li> <li>Maintaining staff technological capabilities a challenge (need for training)</li> <li>Local understanding of systems engineering process is uneven</li> </ul>

	LEVEL 1 PERFORMED	LEVEL 2 MANAGED	LEVEL 3 INTEGRATED	LEVEL 4 OPTIMIZING
Level Consensus	Ad hoc approaches to system implementation without consideration of systems engineering and appropriate procurement processes	Regional conops and architectures developed and documented with costs included; appropriate procurement process employed	Systems & technology standardized and integrated on a regional basis (including arterial focus) with other related processes	Architectures and technology routinely upgraded to improve performance; systems integration/interoperability maintained on continuing basis
Consensus			3	

**DIMENSION: Systems and Technology - continued**

	Action
Actions to Advance to the Next Level	<ul style="list-style-type: none"><li>• Update regional ITS architecture</li><li>• Update signal system central software</li><li>• Identify mechanism for staff training in key TSM&amp;O capabilities</li></ul>

**DIMENSION: Performance Measurement**

Strengths Cited	Weaknesses Cited
<ul style="list-style-type: none"> <li>• Performance management system in place: Portal (2004) - database of freeway sensor data (with algorithms for identifying which need maintenance), signal systems, transit, and some Bluetooth (8-10 stations) for travel times</li> <li>• Portal data available through web (plots, counts) - used for regional planning, consultant projects, researchers, working toward integrating into planning process and congestion management process</li> <li>• Top agency managers and media use/ask about Portal data outcomes</li> <li>• Consideration was given to broad variety of performance data users</li> <li>• Focus on moving from freeway to arterial performance measurement</li> <li>• Some probe data collected with additional use in planning</li> <li>• Performance data has helped local planning decisions on operations vs. capacity and land use, helping to choose the more cost effective option</li> <li>• Incident management response measured (follows federal guidelines)</li> </ul>	<ul style="list-style-type: none"> <li>• Performance measures only reported internally</li> <li>• Few travel time and reliability measures selected and collected (but working on it)</li> <li>• Incident management data not yet being used for improvements in incident management procedures</li> <li>• Still addressing flaws with collected data</li> <li>• Still dependent on forecast data for operations improvement strategies</li> <li>• No multimodal performance data integration</li> <li>• Concern over sufficient policy support for maintenance of significant investment in data collection equipment</li> </ul>

	LEVEL 1 PERFORMED	LEVEL 2 MANAGED	LEVEL 3 INTEGRATED	LEVEL 4 OPTIMIZING
Level Consensus	Some outputs measured and reported by some jurisdictions	Output data used directly for after-action debriefings and improvements; data easily available and dashboarded	Outcome measures identified (networks, modes, impacts) and routinely utilized for objective-based program improvements	Performance measures reported internally for utilization and externally for accountability and program justification
Consensus	1			

**DIMENSION: Performance Measurement - continued**

	Action
<p><b>Actions to Advance to the Next Level</b></p>	<ul style="list-style-type: none"> <li>• Identify outcome measures that carry meaning for the public, business, and elected officials</li> <li>• Build on momentum from discussion over MAP-21 PM requirements (preparations, data use, measures) - what operations data should be incorporated?</li> <li>• Produce a “State of the Region Report” supported by data collected and use it as an outreach tool (akin to the Grey Notebook in Washington State, but splashier and more consumable)</li> <li>• Build on group exercises on improving access and use of archive data for planning purposes and realtime operations</li> <li>• Develop a “concept of operations” for the PM dashboard</li> <li>• Identify measures that would be helpful internally to operations staff (e.g. signal operators)</li> <li>• Integrate use of output (and, in future) outcome measures into post-incident debriefings</li> </ul>

## Improving Transportation Systems Management & Operations: A Capability Improvement Workshop

**DIMENSION: Culture**

Strengths Cited	Weaknesses Cited
<ul style="list-style-type: none"> <li>• Regional ODOT directors highly supportive of TSM&amp;O</li> <li>• Positive payoffs from planning studies increasing elected officials' knowledge</li> <li>• Private sector participation/partnering in promoting operational improvements (e.g. City of Hillsboro and Intel)</li> <li>• Recent payoffs for educating freight community on lower cost of operations improvements, increasing understanding of not necessarily focusing on large capital improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge among elected council members uneven as to benefits and impacts of TSM&amp;O (as with the public which they represent) - exacerbated by turnover of public officials</li> <li>• Challenge with terminology, marketing, and branding of TSM&amp;O for public consumption</li> <li>• Hindrance from perception of Metro by elected officials as too green and anti-car</li> <li>• Need to do a better job explaining how transportation solutions should be balanced (capacity and operational improvements are both needed)</li> <li>• Need better integration of land use, transit, capacity, ITS/operations - and for formal regional planning: finding the right balance that resonates with elected officials and works in the context of current funding levels</li> <li>• Lack of focus by top level managers and elected officials on deteriorating transit performance (buses) due to performance of roadways - focus has primarily been on service cuts</li> </ul>

	LEVEL 1 PERFORMED	LEVEL 2 MANAGED	LEVEL 3 INTEGRATED	LEVEL 4 OPTIMIZING
Level Consensus	Individual staff champions promote TSM&O - varying among jurisdictions	Jurisdictions' senior management understands TSM&O business case and educates decision makers/public	Jurisdictions' mission identifies TSM&O and benefits with formal program and achieves wide public visibility/understanding	Customer mobility service commitment accountability accepted as formal, top-level core program of all jurisdictions
Consensus		2-3		

**DIMENSION: Culture - continued**

	Action
Actions to Advance to the Next Level	<ul style="list-style-type: none"><li>• Incorporate transportation/operations component into outreach and handbook for new elected officials - emphasize that TSM&amp;O has important mobility, safety, freight and transit improvement impacts</li><li>• Capitalize on peer-to-peer potential of elected officials who already “get it” to develop support among their peers</li><li>• Finalize Open House opportunities at TMOC as education tool for public and media</li><li>• Revisit criteria for allocating flexible funds (e.g. cost-benefit) to potentially benefit TSM&amp;O</li><li>• Conduct technical analysis of benefit of transit service quality vs. quantity to address unbalanced focus on service cuts vs. system performance</li></ul>

## Improving Transportation Systems Management & Operations: A Capability Improvement Workshop

**DIMENSION: Organization/Staffing**

Strengths Cited	Weaknesses Cited
<ul style="list-style-type: none"> <li>Within ODOT organization, formal and personal working relationships work well, size and resources strike a good balance</li> <li>Good integration across disciplines within operations program by virtue of both org chart and personal relationships</li> <li>Number of operations positions actually increased during period of right-sizing</li> </ul>	<ul style="list-style-type: none"> <li>Substantial dependency on staff champions and personal relationships - concern about succession and sustainability (recent examples)</li> <li>Operations staff often have many other responsibilities</li> <li>Job specifications/classifications don't necessarily specify the right technical skills - creates challenge to attracting staff</li> <li>Uncompetitive salary vs. required key technical skills</li> <li>Statewide IT regulations create bureaucracy, would benefit from dedicated IT staff</li> </ul>

	LEVEL 1 PERFORMED	LEVEL 2 MANAGED	LEVEL 3 INTEGRATED	LEVEL 4 OPTIMIZING
Level Consensus	TSM&O added on to units within existing structure and staffing, dependent on technical champions	TSM&O-specific organizational concept developed within/among jurisdictions with core capacity needs identified; collaboration takes place	TSM&O managers have direct report to top management; job specs, certification and training for core positions	TSM&O senior managers at equivalent level with other jurisdiction services and staff professionalized
Consensus	1.5			

**DIMENSION: Organization/Staffing - continued**

	Action
<p><b>Actions to Advance to the Next Level</b></p>	<ul style="list-style-type: none"> <li>• Raise regional succession planning and impacts for TSM&amp;O to the level of policy discussion to build group awareness and consensus</li> <li>• Develop ODOT position descriptions and succession plans, supported in part by local jurisdictions' and making the case for benefits/necessity</li> <li>• Define a regional coordination forum with full range of key players</li> <li>• Consider regionally-supported staff person for operations, including planning</li> <li>• Identify and convene jointly-sponsored technical training across agencies</li> <li>• Develop apprenticeship program for required technical capacities (TriMet as potential a model or collaborator)</li> </ul>

## Improving Transportation Systems Management & Operations: A Capability Improvement Workshop

**DIMENSION: Collaboration**

Strengths Cited	Weaknesses Cited
<ul style="list-style-type: none"> <li>Quick clearance and Move It laws in place</li> <li>Incident management improvement program developed by ODOT</li> <li>ODOT has good working relationship with Portland Police, but has to deal with frequent personnel changes</li> <li>Ongoing collaboration among local jurisdictions working at implementation level</li> <li>Good outcomes from statewide special event collaboration</li> <li>Dry-run fee tow program a success with documented performance benefit</li> </ul>	<ul style="list-style-type: none"> <li>Informal relationship between ODOT and Portland Police lost with significant turnover</li> <li>Need to improve education on benefits of better collaboration</li> <li>No cotraining</li> <li>Lack of dissemination of targets in statewide agreement for clearance times, procedures - does not extend to sheriff's departments and local jurisdictions</li> <li>Generally would benefit from greater staff availability for collaboration</li> </ul>

	LEVEL 1 PERFORMED	LEVEL 2 MANAGED	LEVEL 3 INTEGRATED	LEVEL 4 OPTIMIZING
Level Consensus	Relationships ad hoc and on personal basis (public-public, public-private)	Objectives, strategies and performance measures aligned among organized key players (transportation and public service agencies) with after-action debriefing	Rationalization/sharing/formalization of responsibilities among key players through co-training, formal agreements and incentives	High level of TSM&O coordination among owner/operators (state, local, private)
Consensus	1: Incident Management		3+: Traffic Operations	

**DIMENSION: Collaboration - continued**

	Action
<b>Actions to Advance to the Next Level</b>	<ul style="list-style-type: none"><li>• Develop business case for IM procedures and priorities and get issue on OTC agenda to bring it in front of necessary decision makers</li><li>• In longer-term, introduce procedures into Police Academy training</li><li>• Use ODOT region (Bend) that is examining changing its IM procedures and measuring benefits as a demonstration of benefit for potential statewide adoption</li><li>• Enter into discussions with Portland Police as preparatory actions to an MOU</li></ul>

## **Attachment #2: Pre-Workshop Background Memo**

# **Improving Transportation Systems Management & Operations A Capability Improvement Workshop**

**September 20, 2012**

**8:30 AM – 4:30 PM**

**Location – Portland Metro Regional Center**

600 NE Grand Ave.

Portland, OR 97232

Room 370AB

### *Purpose of the Workshop*

The purpose of this Workshop is to raise awareness of the opportunities for improving the effectiveness of state and local Transportation System Management and Operations (TSM&O) activities. The Workshop is sponsored by Portland Metro with support from FHWA.

The Workshop recognizes that the Portland region has already made significant progress in developing and deploying key ITS assets and TSM&O activities. This workshop builds on this progress with a focus on how to mainstream the TSM&O program at the state and regional level. Its focus is on the broader program, process, and organizational capabilities that are essential to “mainstreaming” effective TSM&O strategies. It is aimed at program and activity level managers responsible for TSM&O-related activities in state, regional, and local agencies.

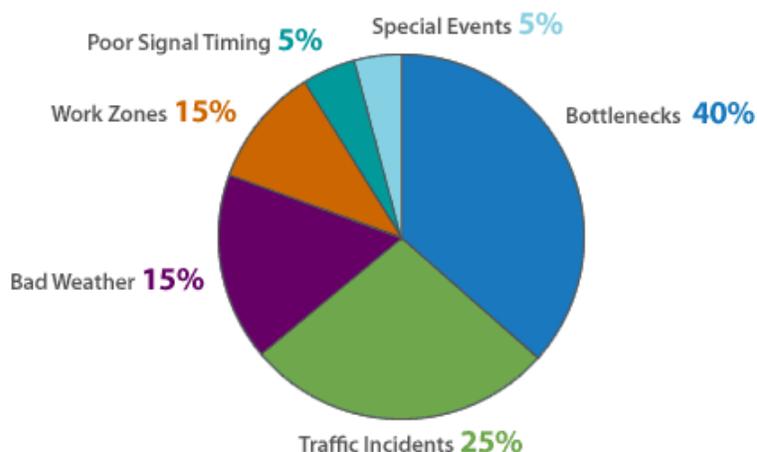
Research shows that *moving beyond a collection of strategy applications to an effective TSM&O program* requires a set of deliberate change management actions to improve agency capabilities in six specific dimensions. A “capability maturity” approach utilized in the Workshop (discussed below) focuses on the key dimensions that impact program effectiveness: business processes, systems and technology, performance measurement, culture, organization and workforce, and collaboration. Improving these capabilities are essential to continuous improvement of TSM&O and its performance impacts.

*The Workshop is not a consultant presentation—it is a structured dialogue among key transportation agency staff in the region.*

### *Background*

**Basic Transportation Systems Management and Operations Strategies** – As congestion spreads and intensifies and the level of incidents, delays and disruptions increase, the level of service and reliability of the roadway systems in many areas continues to deteriorate. In large metropolitan areas over half of the total delay—and most of system unreliability results from disruptions and incidents—many of which are not substantially dealt with by adding new capacity. The contribution of these problems to congestion is shown in Exhibit 1.

**Exhibit 1. The six causes of congestion and delay**



**Transportation Systems Management and Operations** – Given the constraints on the provision of significant new capacity, it is increasingly important to operate the existing network to its fullest service potential, especially “taking back” the capacity lost to congestion, incidents, construction, weather, poor signalization, etc. TSM&O is an integrated program to optimize the performance of existing multimodal infrastructure through implementation of systems, services, and projects to preserve capacity and improve the security, safety and reliability of the transportation system.

TSM&O capitalizes on the full service potential and cost-effectiveness of the complete range of the well-known strategies such as:

- Traffic incident management
- Work zone management
- Traveler information services and demand management
- Road weather information
- Freeway management and managed lanes
- Traffic signal operation
- Electronic payment/toll collection
- Emergency response
- Freight management

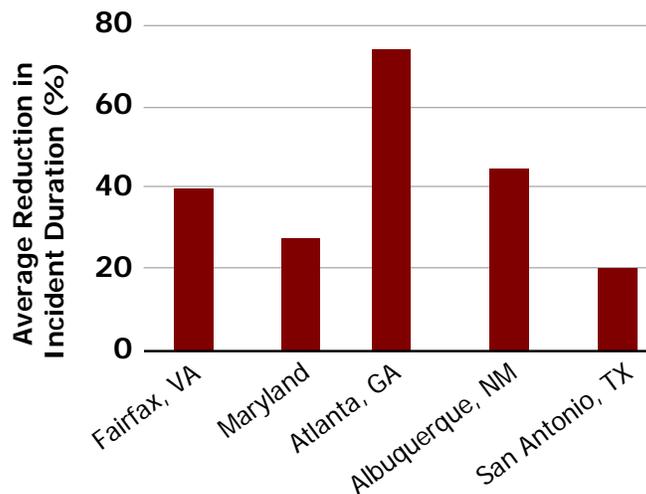
The logic for aggressive pursuit of TSM&O is compelling. TSM&O strategies are extremely cost effective (and low cost) with relatively short lead times. Exhibit 2 illustrates this range of potential.

**Exhibit 2. TSM&O strategy impacts**

TSM&O Applications	Benefits and Benefit-Cost Ratios	Safety Impact	Mobility Impact	Energy/Environment Impact
<b>Traffic incident management</b> <ul style="list-style-type: none"> <li>Safety service patrols</li> <li>Surveillance &amp; detection</li> </ul>	Incident duration reduced 30–50%	High	High	High
	2:1 to 42:1	High	High	High
	8:1	High	High	High
<b>Road weather information systems</b>	2:1 to 10:1; crash rates reduced from 7–80%	High	High	High
<b>Traveler information dynamic message signs</b>	3% decrease in crashes; 5–15% improvement in on-time performance	Low	High	Low
<b>Work zone management</b>	2.1 to 40.1; system delays reduced up to 50%	High	Medium	Medium
<b>Active Traffic Management</b>	Throughput increased by 3–7%; decrease in incidents of 3–30%	High	High	Medium

**Improving TSM&O program effectiveness --** However, there is a wide gap among regions between state-of-the-practice applications and average practiced. Exhibit 3 illustrates examples of the wide variation among regions regarding the effectiveness of their TSM&O activities, reflecting differences in the degree of commitment in terms of organization, resources, program innovation.

**Exhibit 3. Best practice incident management delay reductions**

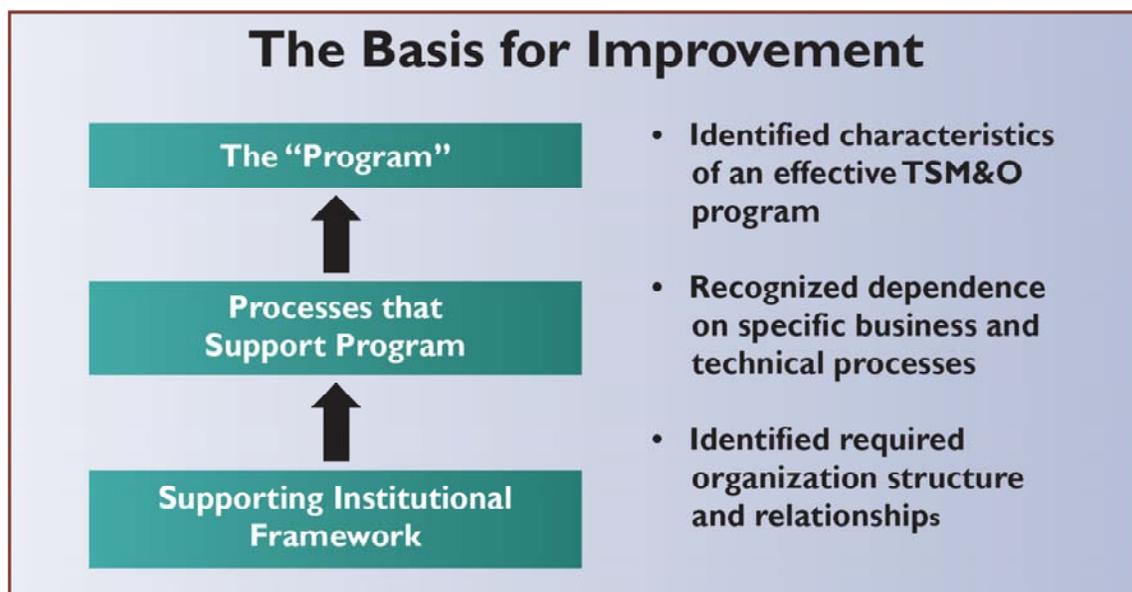


Recent research by SHRP2 and AASHTO suggests that the key challenges to improved effectiveness are no longer primarily related to technology or understanding of best practice. The effectiveness of DOTs appears to be closely related to development of equivalent specific processes and institutional arrangements for TSM&O in seven key dimensions:

- Business Processes (Planning, programming, resource allocation)
- Systems & Technology
- Performance measurement
- Culture
- Organization/Staffing
- Collaboration

Exhibit 4 illustrates these interdependencies between the “program” (specific applications) and the business and technical process dimensions and supporting institutional arrangements needed for achieving full effectiveness and continuing to improve.

**Exhibit 4. Relationships among program, processes and institutional framework**



Especially for agencies and regions with basic TSM&O strategies already in place, reaching full potential requires that these supportive processes and institutional arrangements be put in place and managed at the program level—just as has typically already been done for the other formal core programs of DOTs, such as construction and maintenance.

## *The Capability Maturity Model (CMM)*

**The Capability Maturity workshop** – The purpose of the TSM&O Capability Improvement Workshop is to provide a mechanism by which management personnel of the various transportation agencies in the state or region can assess the current state of play regarding these key dimensions. It will help identify the key next steps to beginning a path of continuous improvement. This evaluation will use a methodology focused on the key issues as described below.

**The Structure of the Capability Maturity Model** – Research in TSM&O effectiveness has resulted in the development of a “Capability Maturity Model” (CMM). The CMM is a concept to support self-evaluation and identification of critical priority “next steps to” placing TSM&O activities on a path to improved outcomes on a continuing basis. The CMM concept was originally developed for the information technology industry and is widely applied in the U.S. and internationally as a means of improving products and services. Its key features are:

- It focuses just on *six key dimensions* needed for improving efficiency and outcome effectiveness;
- It recognizes that improvements must be implemented in *incremental and “doable” levels* that can be managed—with clearly identified criteria that build on previous activities to reduce the risk of failure; and
- It identifies *priorities for management*—in terms of the most highly leveraging actions that improve efficiency and effectiveness up to the next level.

**Key Dimensions: Processes** – Predictable and repeatable processes—both business and technical—within an organization are the key to effective, “surprise free” TSM&O. Achieving predictability and repeatability requires planning for standardization and documentation of systems and technology, training and performance measurement. These features are also the tools required for continuous improvement – putting the program on a stepwise path to improved effectiveness. Many of these considerations have long been embodied in how regional transportation agencies do their other core business such as capital project development and maintenance. But the requirements of a high tech, real-time customer service activity like TSM&O are different and need to be specifically accommodated with appropriate processes. Organizations that want their TSM&O processes to be predictable and repeatable and tailored to the incremental high-tech, low-cost nature of the improvements, must evolve through a series of *stages of maturity* from informal (at the lower end of the scale) to highly routinized and with continuous improvement embedded at the higher end. As each process develops in this way, its capability will improve.

*The Process* dimensions to be considered in the workshops are:

- *Planning, programming, and resource allocation* for TSM&O – Programs are planned and executed based on mobility needs. Capital, operating and maintenance costs are properly allocated to ensure that systems operations and management has its appropriate place in the agencies’ overall improvement programs.

- *Systems and Technology* – Documentation of systems and procedures, including applications selection, conops, architecture and field procedures, are standardized to ensure consistency and reliability.
- *Performance measurement* – Includes measurement, reporting, and use in continuous improvement to achieve customer service outcomes.

**Key Dimensions: Institutional Arrangements** – The “architecture” of the organization must be appropriate to promoting the alignment of understanding and objectives, authority and accountability, technical capacity and resources and roles and relationships, as needed for TSM&O. The existing culture and organizational structure of most transportation agencies has been established to support the traditional core programs. It is not surprising that a new program focus—with its service and performance focus and its dependence on external partners—requires certain organizational adjustments.

The *Institutional* dimensions to be considered are:

- *Culture* that reflects an understanding of TSM&O potential and its role in the transportation agencies customer service mission and investment context.
- *Organizational structure* and staff capabilities to promote technical focus, efficiency and accountability.
- *Collaboration* among partners who must be involved in TSM&O service delivery, aligned to ensure effective application of TSM&O strategies.

**Capability Levels** – Discrete levels (stages) of maturity for the various dimensions have been observed and defined from research and an analysis of various existing state and regional TSM&O programs—and have been interpreted in terms of the capability maturity concept—ranging from ad hoc/start-up activities to an ideal level. The CMM levels are:

Level 1: Performed – Activities and relationships largely ad hoc, informal and champion-driven—substantially outside the mainstream of other transportation activities.

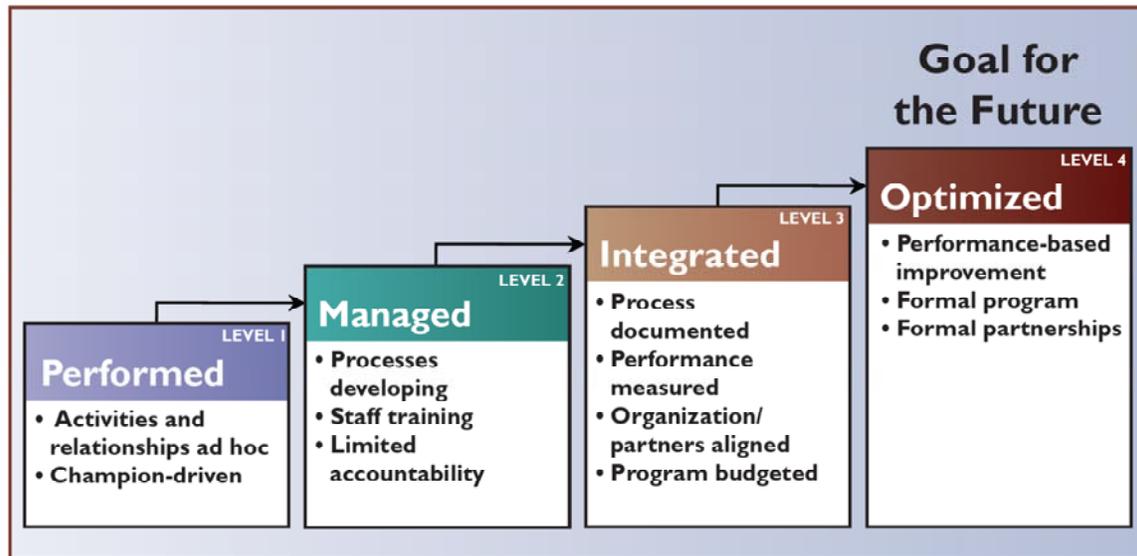
Level 2: Managed – Basic strategy applications understood but limited accountability and external alignment; processes and support requirements identified, key technology and core capacities under development.

Level 3: Integrated – Standardized strategy applications implemented in priority contexts and managed for performance; technical and processes developed, documented, integrated and funded into the regional transportation agencies, partnerships aligned.

Level 4: Optimizing – TSM&O as full, formal, sustainable region-wide program, established on the basis of continuous improvement with all partners.

The relationships among the levels are illustrated in the Exhibit 5 graphic.

Exhibit 5. Levels of agency capability maturity



### *Agency Self-evaluation: The Answers are Already in the Room*

The workshop is a self-evaluation exercise based on the CMM to be conducted by the transportation agency staffs based on their knowledge of the state of play. The consultant is simply the facilitator. The focus of the Workshop is to review the strengths and weaknesses of the current level of the region’s capabilities in each of the six dimensions of capability using the level criteria in the CMM. Based on those levels, the workshop participants achieve consensus on the current state of play in the state or region. These levels then serve as the basis for the identification of the logical (and doable) “next steps” to improve the regions TSM&O capability.

**The Prioritizing “Rules” of CMM** – One of the key features of CMM is its rules of application regarding the next steps for each of the dimensions. They include the following considerations:

- Some of the dimensions are “harder” to deal with than others. However, the dimensions included are all essential and must be addressed. Omitting improvement in any one will inhibit continuous improvement of program effectiveness.
- The dimension at the lowest level is usually the principal constraint to improvement of program effectiveness and therefore the highest priority (and often most difficult!).
- For any dimension, levels cannot be skipped. Steps taken for a given dimension need to be in place for a period (one year) to become embedded as the basis of the next level of improvement.
- Each level builds on organizational readiness of previous level.

Based on the review of the current state of play in the Portland region, an appropriate CMM framework has been established for the Workshop. This framework is attached as Attachment A.

The workshop agenda is attached as Attachment B.

*As an internal agency activity, there are no external judgments. This is not a test!! All comments are confidential. It is essential to be candid about the current state of play.*

*Attachment A: Workshop CMM Template*

<b>CAPABILITY LEVEL DEFINITIONS FOR SELF-EVALUATION OF CURRENT STATE OF PLAY IN THE REGION</b>				
<b>DIMENSIONS</b>	<b>LEVEL 1 PERFORMED</b>	<b>LEVEL 2 MANAGED</b>	<b>LEVEL 3 INTEGRATED</b>	<b>LEVEL 4 OPTIMIZING</b>
<b>Planning and Programming</b>	Each jurisdiction doing its own thing according to individual priorities and capabilities	Consensus regional approach developed regarding TSM&O goals, deficiencies, B/C, networks, strategies and common priorities	Regional program integrated into jurisdictions' overall multimodal transportation plans with related staged program	TSM&O integrated into jurisdictions' multi-sectoral plans and programs, based on formal continuing planning processes
<b>Systems and Technology</b>	Ad hoc approaches to system implementation without consideration of systems engineering and appropriate procurement processes	Regional conops and architectures developed and documented with costs included; appropriate procurement process employed	Systems & technology standardized and integrated on a regional basis (including arterial focus) with other related processes and training as appropriate	Architectures and technology routinely upgraded to improve performance; systems integration/interoperability maintained on continuing basis
<b>Performance Measurement</b>	Some outputs measured and reported by some jurisdictions	Output data used directly for after-action debriefings and improvements; data easily available and dashboarded	Outcome measures identified (networks, modes, impacts) and routinely utilized for objective-based program improvements	Performance measures reported internally for utilization and externally for accountability and program justification
<b>Culture</b>	Individual Staff champions promote TSM&O – varying among jurisdictions	Jurisdictions' senior management understands TSM&O business case and educates decision makers/public	Jurisdictions' mission identifies TSM&O and benefits with formal program and achieves wide public visibility/understanding	Customer mobility service commitment accountability accepted as formal, top level core program of all jurisdictions
<b>Organization/ Staffing</b>	TSM&O added on to units within existing structure and staffing -- dependent on technical champions	TSM&O-specific organizational concept developed within/among jurisdictions with core capacity needs identified, collaboration takes place	TSM&O Managers have direct report to top management; Job specs, certification and training for core positions	TSM&O senior managers at equivalent level with other jurisdiction services and staff professionalized
<b>Collaboration</b>	Relationships ad hoc, and on personal basis (public-public, public-private)	Objectives, strategies and performance measures aligned among organized key players (transportation and PSAs) with after-action debriefing	Rationalization/ sharing/ formalization of responsibilities among key players thru co-training, formal agreements and incentives	High level of TSM&O coordination among owner/operators (state, local, private)

*Attachment B: Improving Transportation Systems Management & Operations  
A Capability Improvement Workshop*

*Agenda*

**September 20, 2012**

**8:30 AM – 4:30 PM**

*Portland Metro Regional Center*

*600 NE Grand Ave., Portland, OR 97232-2736*

*Room 370AB*

<b>Session</b>	<b>Time</b>	<b>Topic</b>	<b>Who</b>
O	8:30 - 9:30	Overview Session – <i>Street Smart Communities: Managing Great Places to Live, Work and Travel</i> Background on Transportation Systems Management & Operations (TSM&O) Room: **** Metro Council Chambers ***	Steve Lockwood – Parsons Brinckerhoff
	9:30 - 9:45	Move to Room 370 AB	
1	9:45 - 10:00	Welcome and Introductions	Robin McArthur – Metro Director of Planning & Development Joseph Gregory - FHWA HQ Phillip Ditzler - FHWA Division Administrator
2	10:00 - 12:00	“The Answer Is In This Room” – Participants’ self-evaluation of current strengths and weaknesses	Participants facilitated by Euler and Lockwood
	12:00 - 12:30	Lunch (provided by Metro)	
3	12:30 - 2:00	Capability improvement: participants’ identification of current Operations Capability level and strategies to get to next level (for dimensions 1-3)	Participants facilitated by Euler and Lockwood
	2:00 - 2:15	Break	
4	2:15 - 4:00	Continued (for dimensions 4-6)	Participants facilitated by Euler and Lockwood
5	4:00 - 4:30	Summary and next steps (action items)	Lockwood and participants

## Attachment #2: Workshop Participants

Name	Agency	Email
John Dorst	City of Gresham	<a href="mailto:John.dorst@greshamoregon.gov">John.dorst@greshamoregon.gov</a>
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### Attachment #3: Overview Session Participants (Partial List)

Name	Affiliation
Nathaniel Price	FHWA
Constance Beaumont	DLCD
Darin Weaver	ODOT
Tyler Ryerson	City of Beaverton
Dennis Mitchell	ODOT
Bob Hart	RTZ
Stephan Lashbrook	SMART – City of Wilsonville
Tom Shook	C-TRAN
Harry Ham	C-TRAN
Eric Hesse	TriMet
Andrew Pumbeck	Governor’s Office
Galen McGill	ODOT
John Dorst	City of Gresham
Young Park	TriMet
Steve Callas	TriMet
Justin Wood	HBA
Deena Platman	Metro
Kathryn Harrington	Metro Council
Baispeny Doy	Metro
Lake McTighe	Metro
Craig Ward	City of Troutdale
Doug Neeley	Oregon City
Anjanette Snar	City of Beaverton
Rachel Ferdaszewski	DLCD
Kristin Tufte	Portland State University
Bill Turlay	Vancouver City Council
Renee Hartado	DKS Associates
Dylan Rivera	Metro
Mike Ward	City of Wilsonville
Karen Buehrig	Clackamas County
Brent Atkinson	ODOT