U.S. Department of Transportation
Federal Highway Administration

Integrating Business Processes to Improve Transportation System Performance
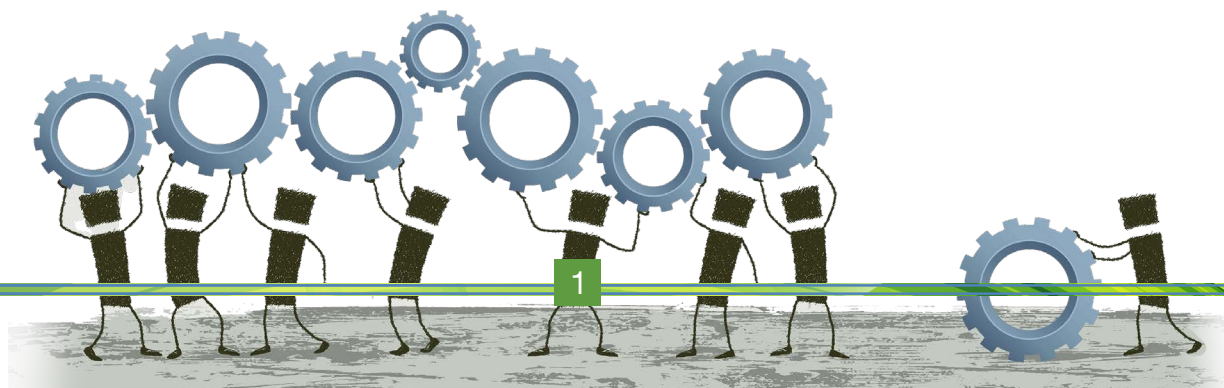
What is a Business Process?

Business processes, in the context of transportation systems management and operations (TSMO), refers to activities such as planning, programming, agency project development processes, and those organizational aspects that govern various technical or administrative functions such as training, human resource management, contracting and procurement, information technology, or agreements. In many cases, the business process elements go beyond the day-to-day operational activities and require broader institutional support and involvement to address. All of these processes are fundamental to the success of TSMO activities. Without the right procurement processes, partnering commitments, sustainable funding, internal awareness, and support, there could be a limited capacity to implement more complex operations programs and activities.

At a basic level, business processes can be defined as "a series of logically related activities or tasks (such as planning, production, or sales) performed together to produce a defined set of results"[1] or accomplish organizational goals. It may be helpful to think of business processes in terms of three types:

MANAGEMENT PROCESSES	OPERATIONAL PROCESSES	SUPPORTING PROCESSES
Govern the overall functioning of the agency's TSMO efforts and include needs identification, planning, programming, and project development.	Define how the organization performs TSMO and include operating procedures during events, internal/external operating agreements.	Put in place to support the operational processes and include training, human resource management, contracting, and procurement.

1   Business Dictionary, s.v. "business processes," accessed March 30, 2017, http://www.BusinessDictionary.com.

What are Example Business Processes for TSMO?

- Automated weather-responsive traffic control strategies for ramp metering, signal timings, speed control, and access control. All parties involved (operators, maintenance, enforcement) understand the activation procedures and thresholds.

- Procedures to use innovative contracting strategies to address work zone needs.

- A long-range strategic plan that is used to guide the traffic management program.

- A course of action either for maintaining (including "hardening") equipment so it can remain operational during a weather event or for replacing equipment essential to road weather management.

- A formal methodology for assessing special event management needs, event scheduling, contingencies, and planning. An after-action review always takes place after major events, and lessons learned are consistently applied to future event planning and operations. Planning is always proactive, and needs are addressed with strong participation from affected operational and emergency management entities.

## Why Focus on Business Processes for TSMO?

Business processes are fundamental to the success of operational and management activities. The lack of effective business processes for TSMO can also hinder an agency's ability or readiness to advance to more complex and proactive operational strategies (such as variable speed limits, advanced traffic management and information systems, and dynamic parking management). Business processes such as planning for TSMO help an organization focus on understanding and prioritizing its operational needs, setting operations objectives, and identifying projects, programs, and strategies to meet those objectives. The organization can then direct resources toward the highest priority projects or actions. Business processes enable agencies to collaborate more effectively in real-time on the roads and rails, and their documentation enables the efficient onboarding of new staff and organizational partners.

Get Started with Business Process Tools to Advance TSMO

### *E-tool for Business Processes to Improve Travel Time Reliability*

The Transportation Research Board's second Strategic Highway Research Program (SHRP2) developed a seven-step approach for identifying process improvements that will enhance travel time reliability. Using this approach results in a better understanding of business processes, gaps in communication or data flows, and missing stakeholders. In addition, documenting business processes helps ensure continuity of institutional knowledge. The tool is available at: http://www.trb.org/Main/Blurbs/170579.aspx.

Seven-Step Process
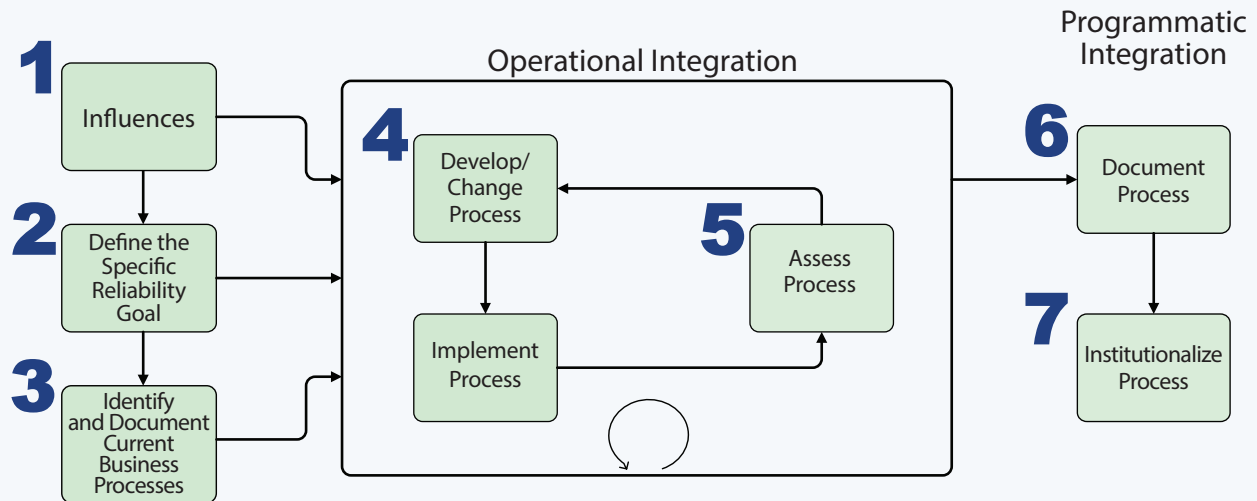
Improving Business Processes for More Effective TSMO

Another resource from SHRP2 is a primer entitled *Improving Business Processes for More Effective Transportation Systems Management and Operations.* This document presents business processes across several TSMO areas, including traffic incident management, planned special event traffic management, road weather management, work zones, and freeway traffic management. Case studies in each area illustrate where agencies have made concerted changes to their respective business processes and modified aspects such as contracting, training, resource allocation, and planning. The primer also highlights available tools and resources to help assess business processes, provides strategies for engaging the right stakeholders, and provides a guide to next steps. It is available at: https://ops.fhwa.dot.gov/publications/fhwahop16018/fhwahop16018.pdf.
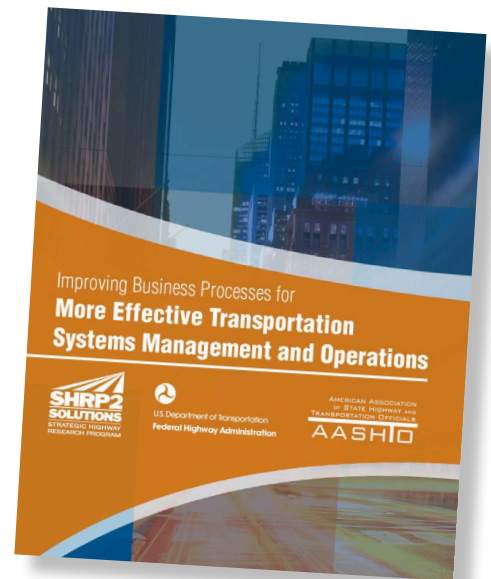
Capability Maturity Frameworks

The Federal Highway Administration (FHWA) developed six capability maturity frameworks that focus on improvement actions for specific TSMO program areas. These frameworks are designed for agencies and regions to assess the current strengths and weaknesses and to help develop a targeted action plan for the program area. Tools are available on the FHWA website to walk through each framework: https://www.ops.fhwa.dot.gov/tsmoframeworktool/index.htm.
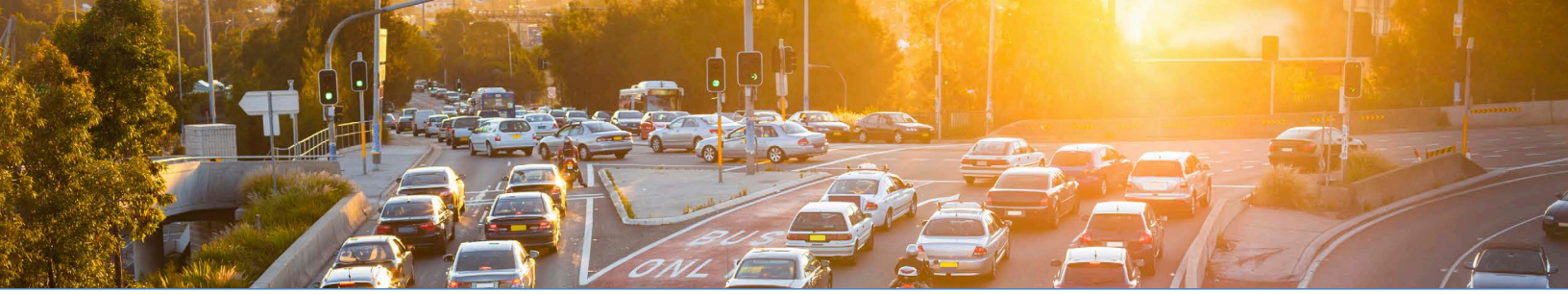
Frameworks are available for the following areas:

- Road weather management.
- Planned special events.
- Traffic incident management.
- Traffic management.
- Traffic signal management.
- Work zone management.

Agencies can use the capability maturity frameworks to:

- Develop consensus around needed agency improvements.
- Identify their immediate priorities for improvements.
- Identify concrete actions to continuously improve capabilities to plan, design, and implement TSMO.

For more information on improving business processes to advance TSMO, contact:

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