

FACTSHEET FEBRUARY 2016

Background

The concept of a capability maturity framework (CMF) emerged from the Strategic Highway Research Program 2 (SHRP2) L01 and L06 projects that promoted a process-driven approach to improve Transportation Systems Management and Operations (TSM&O).

Adapted from the software development world, the notion of CMFs rests on the following three tenets:

- Process matters: Projects fail or do not achieve desired functionality for a variety of reasons unrelated to the technology.
- Prioritizing the right action is important: Is an agency ready, how do they know, and what should they do next?
- Focus on the weakest link: What is holding the agency back in becoming a leader in a particular area?

Building on SHRP2 results, the American Association of State Highway and Transportation Officials (AASHTO) has continued development of this concept and a capability maturity concept was published as part of the TSM&O guidance. SHRP2 implementation

activities have successfully used the overall framework to work with State DOTs to develop action plans to improve their TSM&O capabilities.

To continue the emphasis on capability maturity and to provide program-level guidance, Federal Highway Administration (FHWA) developed additional frameworks that focus on improvement actions for specific TSM&O program areas including:

- Traffic Management
- Traffic Incident Management
- · Road Weather Management
- Planned Special Events
- Work Zone Management
- Traffic Signal Management

These frameworks are designed for agencies and regions to assess the current strengths and weaknesses and develop a targeted action plan for the program area.

More details can be found of the FHWA Operations web site: http://www.ops.fhwa.dot.gov/tsmoframeworktool/index.htm.

Table 1. Capability Maturity Framework Process Overview **Process Improvement Areas Capability Levels** Level 1 Level 2 Level 4 Level 3 **Dimensions or** What is it Managed, Medium Level of Capability Integrated, High Optimized, Highest **Process Areas** Low Level of Capability Level of Capability Level of Capability **Business** Plans, Programs, Statement of Capability **Process Budgets** Step 2 Approach to Building **Systems & Tech** Identify areas of Systems **Performance** Use of Performance the desired levels of capability to improve program effectiveness Measurement Measures capabilities in each area Improving Capability Workforce of Workforce **Changing Culture and** Culture **Building Champions** Identify actions that you need to take to move to the desired levels of capability **Improving Working** Collaboration Relationships

Work Zone Management Capability Maturity Framework

Managing traffic during construction is necessary to minimize traffic delays, maintain motorist and worker safety, complete roadwork in a timely manner, and maintain access for businesses and residents. This framework assesses the capability for effective work zone traffic management including assessing work zone impacts and implementing strategies for mitigating the impacts.

The use of the framework is recommended if an agency has significant upcoming reconstruction and maintenance activities, is considering implementing Work Zone ITS technology, or is in the middle of updating the State's process review for work zones.

In all these instances, the use of the framework will provide a structured approach to review the complex institutional architectures and business processes required to make work zone management a success. By reviewing the "non-technical" issues in detail and implementing the prioritized actions, agencies will increase the capability and sophistication of their work zone management program.

Structure

Consistent with the SHRP2 guidance, the frameworks are all described as a matrix that defines the process improvement areas and levels (from Level 1, low-level to Level 4, optimized high-level) of capability. Following a self-assessment process, specific actions are identified to increase capabilities across the desired process areas. Capabilities are described for the following six areas:

- 1. Business processes
- 2. Systems and technology
- 3. Performance measurement
- 4. Organization and workforce
- 5. Culture
- 6. Collaboration

Using the Framework

A Work Zone Management CMF and a supporting interactive tool have been developed. The current version of the framework is available at http://www.ops.fhwa.dot.gov/tsmoframeworktool/available-frameworks/work zone.htm.

A collaborative process is recommended for using the CMFs. Typically, a local agency champion will pull together the stakeholders for a day-long workshop to walk through the framework. Work Zone Management stakeholders may include work zone traffic managers, maintenance staff, traffic operations managers, and construction staff. The outcomes of the workshop are a consensus of the current capabilities across all the dimensions and an initial list of prioritized actions.

The champion might then convene future meetings or identify existing forums where the identified actions will be championed and implemented.

The framework is not intended as a benchmarking tool, but rather as a resource for agencies to identify appropriate actions for improving management and operations of work zone management systems. While periodic assessments are not required, revisiting the tool is recommended when significant organizational change occurs or prior to major investments in the area.

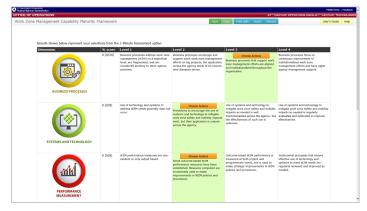


Figure 1. Screenshot of Tool

Get involved:

If interested in using the framework, or hosting a CMF workshop for your agency or region, please contact the FHWA leads for this activity:

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