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# Road Weather Management Capability Maturity Framework

Stakeholder Meeting

08/13/2014

# Framework Development Team

- Project Team

- Deepak Gopalakrishna
- Mike Waisley
- Steve Cyra
- Katie Belmore
- Kevin Balke
- Jerry Ullman
- Beverly Kuhn
- Bob Brydia

- Panel

- Roemer Alfelor (FHWA)
- Paul Pisano (FHWA)
- Joe Gregory (FHWA)
- Jim Hunt (FHWA)
- Jack Stickel (Alaska)
- Ben Dow (City of Fargo)
- Denise Inda (Nevada DOT)
- Denise Markow (New Hampshire DOT)
- Phil Anderle (Colorado DOT)
- Larry Dunn (NWS)
- Ralph Patterson (Narwhal)

# Acknowledgments

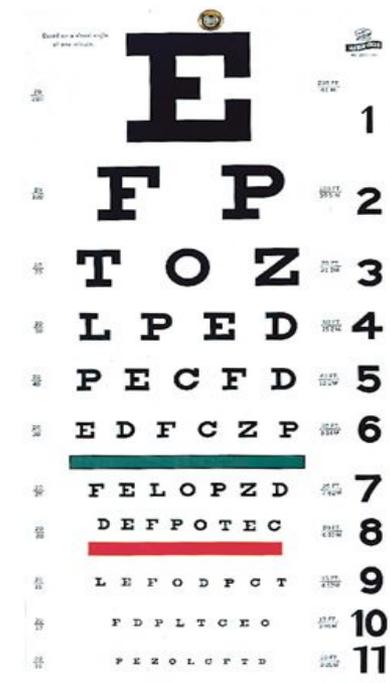
- Wayne Berman
- Tracy Scriba
- Ralph Volpe
- Steve Clinger
- SHRP2 L06 Teams
- SHRP2 L01 Teams
- AASHTO

# Objectives of Session

1. Provide an overview of capability maturity frameworks
2. Review the road weather management framework
3. Gather feedback on validity and utility of framework
4. Spur engagement and involvement in further development and application of the framework

# Supporting Material

- Handout I – Fact Sheet
- Handout II – Capability Maturity Matrix
- Handout III – Draft List of Actions



# Capability Maturity Framework Context

# Audience Poll

- Awareness of capability maturity frameworks for Transportation Systems Management and Operations
- High** – Have participated in SHRP2 efforts in my agency/region
- Medium** – Aware of it and some understanding but have not participated in any workshops on this topic
- Low** - New concept

# Capability Maturity Frameworks

## Process Matters

Projects fail or do not achieve desired functionality for a variety of reasons unrelated to the technology

## Prioritizing the right actions

Is your agency ready?  
How would you know?  
What should you do next?

## Focus on the weakest link

What is holding the agency back in becoming a leader in this area?

## Capability Maturity Frameworks for Transportation Operations

### Process

- Adapted from software development world
- A consensus-driven consistent structured evaluation or assessment of a process.
- Guides an agency towards a higher level of implementation, standardization, and return on investment.

### Outcomes

- Clear identification of weak links in the process
- Prioritization of areas of improvement
- List of process-oriented actions that an agency can implement

# SHRP2 and AASHTO SOM Guidance

- SHRP2 L06
  - Undertook a comprehensive and systematic examination of the way agencies should be organized to successfully execute operations programs that improve travel time reliability
  - Developed a version of Capability Maturity Model for highway operations and in turn travel time reliability
- AASHTO
  - Support the conversion of the SHRP 2 Reliability Project L06 research into a web-based tool that would be user friendly, easy to access, and updatable. (NCHRP Project 03-94, Transportation Systems Operations and Management Guide)

# AASHTO SOM Guidance

- AASHTO SOM Guidance. [www.aashtosomguidance.org](http://www.aashtosomguidance.org)
- CMM is being used widely as part of SHRP2 implementation efforts
- Focuses on capability for all operations

The screenshot shows the homepage of the AASHTO SOM Guidance website. The header is dark blue with the AASHTO logo and the text 'WEB-BASED PUBLICATION' and 'TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS'. Navigation links include 'Home', 'Guidance Origin & Sponsorship', 'Login', and 'Register'. A green button for 'One-Minute Guidance Evaluation' is highlighted with a checkmark. Below the header, there are three buttons: 'Learn About the Guidance', 'Customized Guidance Evaluation', and 'Browse Guidance'. The main content area features a section titled 'What Is Transportation Systems Management and Operations (TSM&O)?' with a paragraph of text and a 'Learn More >' link. To the right, there is a promotional box for 'One-Minute Guidance Evaluation' with a clock icon and the text 'GUIDANCE TO IMPROVE THE EFFECTIVENESS OF YOUR TSM&O PROGRAM' and 'based on a snapshot of your current program.' The footer of the page is partially visible, showing the text 'This website and its guidance is designed for transportation agency managers whose span of control'.

# Program Area Frameworks

- FHWA continues the development of these capability frameworks to support improvements at program-level
  - Traffic Incident Management
  - Planned Special Events
  - Work Zone Management
  - **Road Weather Management**
  - Traffic Signal Management
  - Traffic Management

# Road Weather Management CMF

- Assesses the institutional capacity of an agency or a region to respond to adverse weather conditions from both a maintenance and operations perspective.
- Involves stakeholders from maintenance, operations, meteorology, and emergency management
- Will result in a set of prioritized actions for improvement that address institutional barriers for effective road weather management.

# Handout #1

- Factsheet on CMF development efforts

# Capability Maturity Framework Structure

# Capability Maturity Framework

Process Improvement Areas

Capability Levels

Dimensions or Process Area	What is it	Level 1 Ad-Hoc. Low Level of Capability	Level 2	Level 3	Level 4 Optimized. High level of capability
<b>Business Process</b>	Plans, Programs, Budgets	Statement of capability	..		
<b>Systems &amp; Tech</b>	Approach to building systems	..	..		
<b>Perf. Measurement</b>	Use of performance measures	..	..		
<b>Workforce</b>	Improving capability of workforce	..	..	..	..
<b>Culture</b>	Changing culture and building champions	..	..	..	..
<b>Collaboration</b>	Improving working relationships	..	..	..	..

Step 1. Self-Assessment  
Work with your stakeholders to assess where you are in terms of the capabilities in each area

Step 2. Identify areas of improvement and the desired levels of capability to improve program effectiveness

Identify actions that you need to take to move to the desired levels of capability

# Six Dimensions of Capability

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

# Actions

- Framework defines levels
- Actions define steps that an agency can take to advance levels
  - Level 1 to Level 2
  - Level 2 to Level 3
  - Level 3 to Level 4
- Advancing a level implies potentially taking actions across all dimensions
- Provides an idea or nugget for a region to consider
- Agencies can customize and prioritize actions as part of their planning efforts

# Moving From Level 1 to Level 2

## Level 1 Capability Features

- Agency specific
- Ad hoc
- Address immediate concerns
- Driven by problems (firefighting)

## Level 2 Capability Features

- Nominal systematic approaches starting to emerge
- Addressing immediate concerns but geographic influence broadening
- Applications of advancements / technologies in spot locations
- Approaches are operator driven; static and time-of-day

# Moving From Level 2 to Level 3

## Level 2 Capability Features

- Nominal systematic approaches starting to emerge
- Addressing immediate concerns but geographic influence broadening
- Applications of advancements / technologies in spot locations
- Approaches are operator driven; static and time-of-day

## Level 3 Capability Features

- Advanced application of technology.
- Limited level of automation.
- More of a system-wide approach.
- Replicate and integrate systems within operations.
- Collaboration is high via engagement of regional stakeholders

# Moving From Level 3 to Level 4

## Level 3 Capability Features

- Advanced application of technology.
- Limited level of automation.
- More of a system-wide approach.
- Replicate and integrate systems within operations.
- Collaboration is high via engagement of regional stakeholders

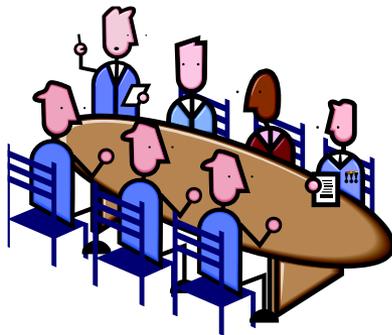
## Level 4 Capability Features

- Regional approaches.
- Levels of automation based on historical, current, and predicted data.
- Full extent of regional collaboration.
- Multi-modal decision making across the entire region.

# Capability Maturity Framework Products and Outcomes

# Products

- Agency or regional findings related to capability
- Capability assessment by dimension
- Suggested actions for improvement



Consensus-based assessment

Dimensions or Process Area	What is it	Level 1 Ad-Hoc, Low Level of Capability	Level 2	Level 3	Level 4 Optimized, High level of capability
Business Process	Plans, Programs, Budgets	Statement of capability	--	--	--
Systems & Tech	Approach to building systems	--	--	--	--
Perf. Measurement	Use of performance measures	--	--	--	--
Workforce	Improving capability of workforce	--	--	--	--
Culture	Changing culture and building champions	--	--	--	--
Collaboration	Improving working relationships	--	--	--	--

Current capability



Prioritized actions for improvement

# Outcomes

- Jumpstart improvement process
  - Focus on immediate weaknesses
  - Prioritize key organizational changes that can have major impact
- Provide justification for actions
  - Actions are based on sound rationale and a consistent assessment of capability
- Improve consistency and collaboration between jurisdictions
  - Leverage mutual capability

# Agency or Region or Corridor?

- Capabilities exist in agencies
- Together, they provide the capabilities for the region or corridor
  - Differences in capabilities are normal but can be a challenge when looking regionally or along a corridor
  - Differences in agencies can constrain regional responses
- Actions can be
  - Agency-level
  - Multi-Agency
  - Regional

# Audience Poll

- For those in the audience that have gone through the SHRP2 CMM activities and are now in the implementation phase, how would you describe your experience to the group:
  - Value
  - Challenges
  - Benefits

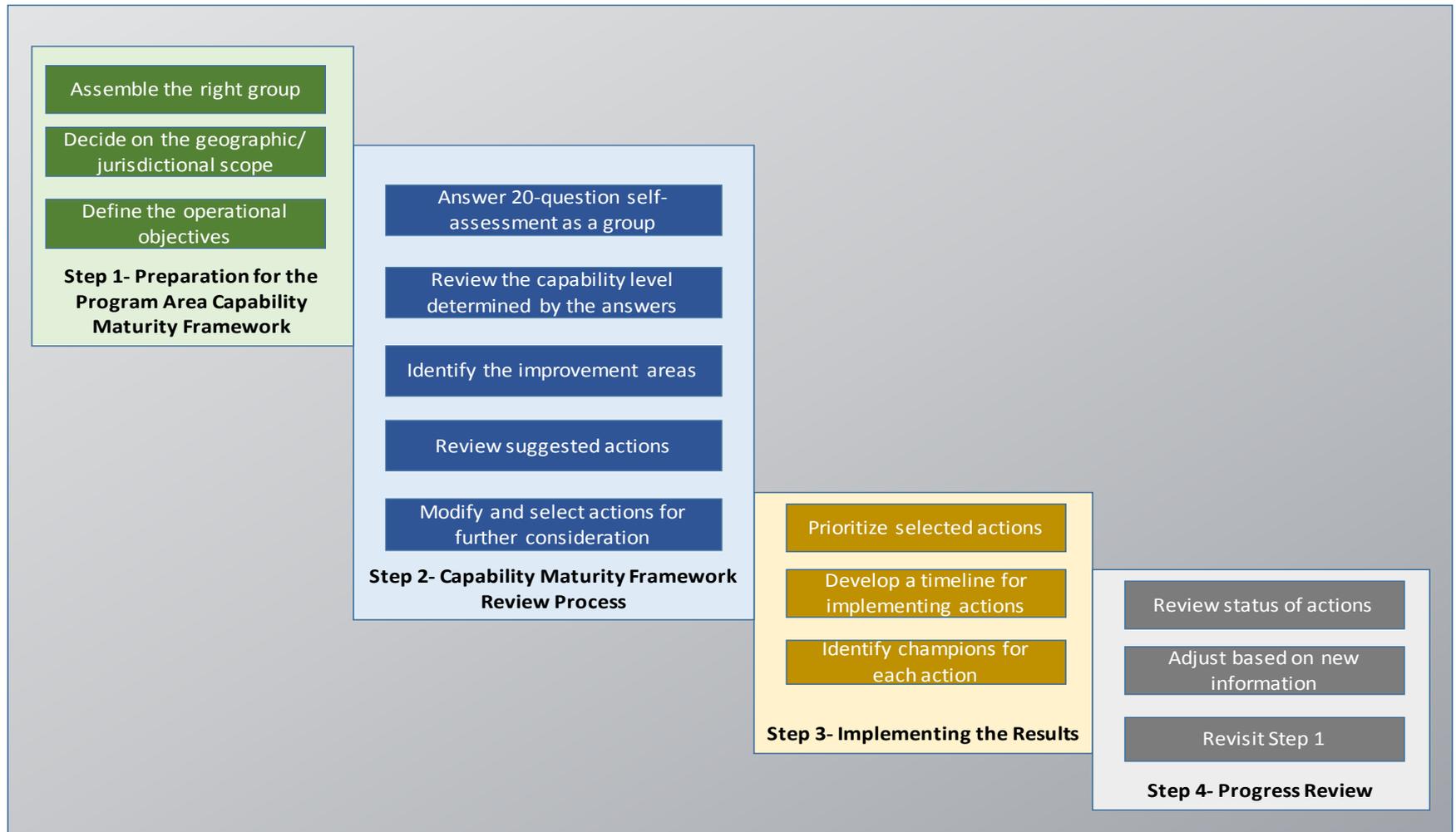
# Road Weather Management Capability Maturity Framework

Overview and Using the framework

# Recommended Uses

- Implementing new weather-responsive traffic management practices
- Updating maintenance practices or implementing new approaches to winter maintenance such as deploying an Maintenance Decision Support System
- Updating or creating new program plans for road weather management
- Undergoing organizational realignments for TSMO

# Using the Framework



# Conduct Self-Assessment

- Consists of 20-25 multiple-choice questions across all dimensions
- Each question has 4 choices/statements
- Agencies pick the statement that best describes their current situation
- Questions and choices are still being refined

# Current List of Questions

- BP.1. How are the agency road weather management activities funded and used?
- BP.2. How tightly integrated are processes within the area when the scale and the complexity of the response increases?
- BP.3. What is the current level capability to influence and control traffic and travel behavior on facilities in the area?
- BP.4. What support is available to implement the right response to a particular condition or event?
- ST.1. What is the ability to assess and procure new technology for road weather management?
- ST.2. What is the capability to provide consistency of design and operations to insure scalability and Interoperability of road weather systems?
- ST.3. What is the capability to ensure health and reliability of road weather systems?
- ST.4. What is the level of availability of road weather information through the existing systems and technology?

# Current List of Questions

- PM.1. Does the agency have a process to assess operational (traffic) impacts during weather events?
- PM.2. Is the agency able to report and compare the RWM performance across regions, events and seasons?
- PM.3. How does the agency report road weather performance to the public?
- C.1. What is the perception of road weather management in the agency?
- C.2. How willing is the agency and its partner agencies to make decisions based on proactive measures?
- C.3. What level of strategic planning occurs for weather events?

# Current List of Questions

- OW.1. What are the capabilities with respect to staffing are available to support road weather management?
- OW.2. How are staffing resources allocated for road weather?
- OW.3. How does the agency deal with professional capacity building for road weather?
- CO.1. How do the Maintenance, TMC Operations and other TSM&O teams coordinate?
- CO.2. What level of collaboration exists with the weather community/ meteorologists?
- CO.3. What level of collaboration exists with the media and the public?

# Example Question #1 and Audience Poll

**BP.2. How tightly integrated are processes within the area when the scale and the complexity of the response increases?**

- Limited ability to scale the response with available assets. Agencies/garages/districts operate within their confines with significant challenges in scaling up for events
- Able to leverage other maintenance garages or other operating agencies within agency to scale up responses as necessary. Can pull together for the major events. However, still face challenges due to significant variability between how different parts of the agency work.
- Significant ability to collaboratively use capabilities and resources throughout the region due to agreed upon procedures and processes. Agency-level process coordination is high but some hurdles to varying processes and capabilities between external partners.
- Strong process integration and flexibility in contracting and external collaboration with other partners including construction allow for rapid deployment and response.

Pick the statement that best resembles your current capability. Err towards grading yourself on the lower-end. Document the discussion that arises from this question

# Example Question #2 and Audience Poll

## ST.3. What is the capability to ensure health and reliability of road weather systems?

- Do not have the technologies and systems in place to provide structured response conditions that affect systems; Frequent outages occur and have no good way of knowing when and where.
- Health of systems can be remotely monitored but limited in functionality and use. Might be able to alert complete failures but not able to detect more subtle errors in data quality. Maintenance of systems is still sporadic and down-time is significant.
- Health of systems is remotely monitored with alerts to operators. Limited quality checking of data allows for identification of sensor issues. Ability to deploy maintenance personnel quickly to restore system health.
- In addition to Level 3, can reestablish continuity of service remotely; automated dispatching and prioritization of maintenance actions

Pick the statement that best resembles your current capability. Err towards grading yourself on the lower-end. Document the discussion that arises from this question

# Example Question #3 and Audience Poll

## CO.2. What level of collaboration exists with the weather community/meteorologists?

- Limited to no coordination. Rely only on publically available information via media and monitor NWS information
- Starting to work with NWS field offices and other weather stakeholders. Identifying information requirements for in-house or private weather sources. Reach out to weather community only in rare circumstances
- Routine coordination with NWS. Have access to meteorological expertise to assist decision making for most events. Starting to include them in planning as well as operational decisions.
- Have in-house or procured capabilities to access, process and analyze weather and road weather forecasts. Meteorological expertise acts as liaison between weather community and road weather management. Weather enterprise is fully involved in planning, response and after action reviews.

Pick the statement that best resembles your current capability. Err towards grading yourself on the lower-end. Document the discussion that arises from this question

# Result of Self-Assessment - Current Capability Matrix

- Snapshot of capability levels is generated based on responses to assessment questions
- Discussion items are captured
- Currently all questions are equally weighted within and across dimensions
- Likely that agencies will fall between levels

# Capability Matrix

Dimension	General Definition (consistent with AASHTO CMM)	Level 1 (Lowest)	Level 2	Level 3	Level 4 (Highest)
		Agencies at this level for road weather management are likely to be/have:	Agencies at this level for road weather management are likely to be/have:	Agencies at this level for road weather management are likely to be/have:	Agencies at this level for road weather management are likely to be/have:
Business Process	Capabilities for formal scoping, planning, programming and budgeting of the program	<ul style="list-style-type: none"> <li>#Constrained by annual funding limitations and inability to make long-term capital or operational improvements</li> <li>#Have difficulty in scaling up responses to conditions due to significant differences and inconsistencies between processes based on jurisdiction</li> <li>#No formal procedures/requirements in place for weather management. Policy and programmatic capabilities to implement response strategies are not aligned limiting the options of the agency.</li> </ul>	<ul style="list-style-type: none"> <li>#Some dedicated funding available for multi-year programs and improvements</li> <li>#Starting to see allocation of funds to invest in road weather technology, systems and tools</li> <li>#Funding is variable and subject to reallocation to other priorities</li> <li>#Documented policies allow agency to ramp up adequately for major events</li> <li>#Formal procedures/requirements (like warning system activation thresholds, maintenance plan/strategy, route maps, operator guides, policy guidelines) are starting to emerge and becoming available throughout the agency</li> </ul>	<ul style="list-style-type: none"> <li>#Funding for road weather management is part of regional planning process</li> <li>#Dedicated funds with flexibility are available as part of a multi-year program</li> <li>#Resource sharing processes and procedures in place to maximize response capabilities in accordance to the scale of the event between jurisdictions of an agency. Inter-agency collaboration is improving but challenges continue to exist</li> <li>#Policies allow for a full range of appropriate advisory, control and treatment strategies. Primarily driven by and reliant on operator and field personnel feedback</li> </ul>	<ul style="list-style-type: none"> <li>#Funding is tied to a multi-year strategic roadmap for road weather.</li> <li>#Strategic plan includes consideration on future needs incorporating medium-term and long-term changes to climate, technology and reinvestment in systems</li> <li>#plan that includes recovery and resiliency of systems to extreme weather</li> <li>#common process and procedures allow greater integration into other aspects of the agency like construction, transit operations</li> <li>#Established and well-understood guidelines, overrides and thresholds for automated activation of advisory, control and treatment actions when possible.</li> </ul>
Systems and Tech	Capabilities to use systems engineering, systems architecture standards, level of interoperability, and standardization	<ul style="list-style-type: none"> <li>#Limited in their successful use of technology for road weather with a few examples primarily on the maintenance side</li> <li>#Existing road weather systems are considered to be unreliable</li> <li>#Low level of integration to the broader agency or external systems (like NWS)</li> <li>#Lack of awareness of available systems and tools internal and external to the agency</li> <li>#Significant temporal and spatial data gaps which limit the ability of the agency to respond</li> </ul>	<ul style="list-style-type: none"> <li>#Starting to focus on advanced technology for road weather management. Pilot tests, limited deployments are likely underway. Have identified critical areas/facilities of interest</li> <li>#Patchy network of RWIS available but information from these locations are not fully utilized</li> <li>#have a regional approach to road weather technology with awareness of existing regional systems and architecture. Federal projects follow a systems engineering process with varying levels of rigor.</li> <li>#System health is monitored occasionally and agency tries to minimize down-time</li> <li>#While a greater degree of weather and road weather data is collected, data quality and interpretation challenges restrict use</li> <li>#Starting to interact with external sources of weather information like NWS</li> <li>#limited road segment information gathered through field personnel. Challenges in reporting accuracy and timeliness are experienced</li> </ul>	<ul style="list-style-type: none"> <li>#Systems and technologies integrated fully into the regional ITS infrastructure</li> <li>#all deployments follow a robust systems engineering process driven by clear user needs</li> <li>#generally reliable systems with remote health monitoring and limited quality control algorithms</li> <li>#design specifications, siting criteria allow for consistency in deployment of systems</li> <li>#high-level of integration with internal and external weather sources.</li> <li>#Some use of decision-support tools but improvements in interpretation and analysis are needed.</li> <li>#geographically complete coverage through fully built out RWIS network</li> <li>#Road segment information gathered through field personnel input but latency issues continue to persist</li> </ul>	<ul style="list-style-type: none"> <li><b>In addition to items in level 3</b></li> <li>#Agency invests in test beds and other research to continuously develop new technology capabilities</li> <li>#Systems engineering process is used for all projects with high internal capability to review deliverables like requirements and design documents</li> <li>#Device reliability and data quality issues are automatically tracked, reported and responded to by field personnel</li> <li>#Multiple sources of weather, road weather data including road-segment data.</li> <li>#Agency has strong capability to assess, integrate weather and road weather data into decision-making through the use of appropriate decision-support tools</li> </ul>

# Handout #2 - Matrix

- Apologize for the small font size
- Please take a couple of minutes to review the description of the levels
- Note that not all agencies will be described exactly
- Feedback/Thoughts
  - Descriptions reflective of state of the practice?
  - Too easy to reach level 4?

# Identify Actions

- Primary value of the framework are in the action statements
- Represent the thinking of various peers, studies and guidelines
- Concrete steps that an agency can take
- Actions are not prescriptive. They are suggestions and can be modified, improved, changed, or **CREATED**

# Handout #3- Review of Actions

- 11x17 Handout lists all the actions that are available in the framework
- Focus should be on the lowest rated dimension since that is your primary constraint
- Skipping levels is not advised in general

# Prioritize Actions

- Can be overwhelming to be presented with all the actions
- Not all actions need to be implemented right now
- Start with the weakest dimensions first
- **Critical few in each dimension**
- Identify a champion
- **Think in 6-month increments and early successes**
- **Develop a plan to implement and revisit these actions**

# Road Weather Management Capability Maturity Framework

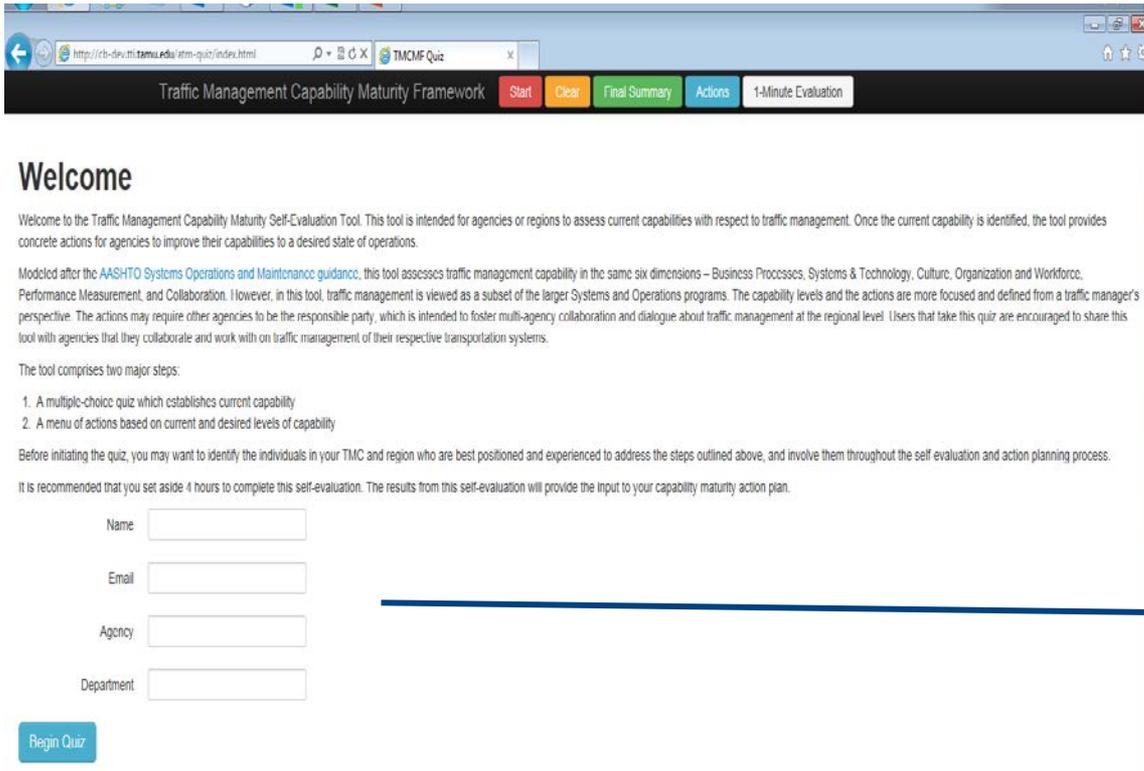
On-line tool

# Online Tool

- Framework will be available as a web-based tool on the FHWA Office of Operations website
- The tool will enable users to
  - Conduct the self-assessment
  - Record the discussion and consensus building around each question
  - Identify and prioritize actions
- Look and feel still being finalized and will change in the next six months

# Screenshots of the tool

## Introduction Page



The screenshot shows a web browser window with the URL <http://cb-dev.tamu.edu/tmcm-quiz/index.html>. The page title is "Traffic Management Capability Maturity Framework". At the top, there are navigation buttons: "Start" (red), "Clear" (orange), "Final Summary" (green), "Actions" (blue), and "1-Minute Evaluation" (white). The main content area is titled "Welcome" and contains the following text:

Welcome to the Traffic Management Capability Maturity Self-Evaluation Tool. This tool is intended for agencies or regions to assess current capabilities with respect to traffic management. Once the current capability is identified, the tool provides concrete actions for agencies to improve their capabilities to a desired state of operations.

Modeled after the [AASHTO Systems Operations and Maintenance guidance](#), this tool assesses traffic management capability in the same six dimensions – Business Processes, Systems & Technology, Culture, Organization and Workforce, Performance Measurement, and Collaboration. However, in this tool, traffic management is viewed as a subset of the larger Systems and Operations programs. The capability levels and the actions are more focused and defined from a traffic manager's perspective. The actions may require other agencies to be the responsible party, which is intended to foster multi-agency collaboration and dialogue about traffic management at the regional level. Users that take this quiz are encouraged to share this tool with agencies that they collaborate and work with on traffic management of their respective transportation systems.

The tool comprises two major steps:

1. A multiple-choice quiz which establishes current capability
2. A menu of actions based on current and desired levels of capability

Before initiating the quiz, you may want to identify the individuals in your TMC and region who are best positioned and experienced to address the steps outlined above, and involve them throughout the self evaluation and action planning process. It is recommended that you set aside 4 hours to complete this self-evaluation. The results from this self-evaluation will provide the input to your capability maturity action plan.

Below the text are four input fields for user identification:

Name:

Email:

Agency:

Department:

At the bottom left, there is a blue button labeled "Begin Quiz".

Agency Identification –  
Included in the reports.  
Useful if you have  
multiple regions/agencies  
undertake the  
assessment  
independently

# Screenshots of the tool

## Self-Assessment

The screenshot shows a web browser window with the URL <http://cb-dev.ttu.edu/atm-quiz/index.html>. The page title is "Traffic Management Capability Maturity Framework". At the top, there are navigation buttons: "Start", "Clear", "Final Summary", "Actions", and "1-Minute Evaluation". Below this, there are six dimension tabs: "Business Processes" (highlighted in blue), "Systems and Technology", "Performance Measurement", "Organization and Workforce", "Culture", and "Collaboration". The main question is "How is traffic management planning performed in your agency?". Below the question is a list of five radio button options: "Project oriented to solve immediate problems on individual facilities or at particular ?spot? location of interest.", "Traffic management planning approached from a corridor perspective.", "Traffic management planning and programming are coordinated at a mostly metropolitan level and tied to regionally agreed-upon operational objectives. Limited statewide or local coordination.", "Traffic management planning processes have links at all planning levels (state, metropolitan, and local) via performance-based operational objectives.", and "N/A". Below the options is a "Notes" section with a text input field containing the placeholder text "Enter discussion during the question here". At the bottom left, there is a "1/21" indicator and a "Next" button.

Question relates to highlighted dimension

Self-Assessment question and choices

Enter discussion points here

# Screenshots of the tool

## Identification of Actions

Dimension and desired progression

Dimension - Customize your Actions for the selected dimension

Business Processes

Level - Define actions to help you progress from:

Level 2 to Level 3

Pull desired actions from the left box to the right box

**Available Actions**

- Develop an organizational approach for assessing changes in system performance for routes of regional significance.
- Conduct regional traffic management joint training exercises (e.g., operational scenarios, tabletop exercises, and after action reviews).
- Establish baseline criteria for minimum level of equipment performance (i.e., state of good maintenance) agreeable to all regional agencies.
- Establish a process to expedite emerging technologies so that an agency can assess, identify, test, and facilitate the implementation of new technologies.
- Develop a multi-year maintenance plan that includes procurement cycles, warranty, replacement cycles, and preventative maintenance.
- Provide in-depth training to agency staff/departments to utilize appropriate macro-, meso-, and microscopic modeling.
- Create a process whereby new traffic management approaches are modeled internally to determine B/C, environmental impacts, and anticipated operational performance measures.
- Implement facility and corridor management approaches that promote route choice, detours among facilities.
- Ensure that the adequate staff mix (operators, enforcement) for 24/7 deployment of selected traffic management response strategies.
- Create an incident management tracking database at the regional level.

**My Selected Actions**

- Develop traffic management objectives at a regional level
- Incorporate regional ITS architecture considerations (e.g., ITS service packages and integration opportunities) into traffic management plans.

Show Report in New Tab

To view a complete list of actions for Business Processes Level 2 to Level 3, click here

List of all actions at the level

Recommended Actions. Drag selected actions into Green box

# Feedback from Audience

# High-Level Questions

- Will such a tool/framework be useful to the transportation agencies?
- How should an agency use this?
- What is missing?
- Other questions/comments

# Specific questions

- Does the current list of actions improve agency capabilities for RWM?
- How can we keep this list current?
- Would you be willing to provide feedback/additional actions based on your agency perspective?

Get involved

# Get involved

- Test drive the framework in your location
- Provide feedback and improvements
- Let others know within your agency
- Request workshop in your region
  - Contact Roemer Alfelor or Paul Pisano

# Thank you!

- Deepak Gopalakrishna ([Deepak.Gopalakrishna@icfi.com](mailto:Deepak.Gopalakrishna@icfi.com))
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- Jim Hunt ([jim.hunt@dot.gov](mailto:jim.hunt@dot.gov))