Road Weather Management Capability Maturity Framework Webinar

Webinar #1
Non-Winter Weather

December 5, 2017 | 12:00 - 1:00 PM EST

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Welcome and Introductions

Roll Call *(please complete the poll question)*

- Name
- Agency
- Role in Road Weather Management
Purpose of Today’s Webinar

- Provide a brief overview of the RWM CMF Process and Tool
- Share experiences and outcomes of non-winter weather agencies that have conducted the evaluations
- Discuss common RWM themes across agencies
- Q&A discussion session
  - Conducting an assessment of your region/agency
National RWM CMF Deployment

Completed Workshops

1. Colorado (Nov 2014)
2. Wyoming (Sept 2016)
3. Idaho (Oct 2016)
4. Dallas, TX (April 2017)
5. Houston, TX (April 2017)
6. Alaska (May 2017)
8. Arizona (May 2017)
9. Illinois (June 2017)
10. Nevada (July 2017)
Webinar Focus States

**Webinar #1 (Dec 5\(^{\text{th}}\))**  
*Non-Winter Weather*  
- Texas (Dallas and Houston)  
- Arizona  
- Nevada

**Webinar #2 (Dec 7\(^{\text{th}}\))**  
*Winter Weather*  
- Alaska  
- New Hampshire  
- Illinois  
- New York State
Today’s Webinar Topics

- RWM CMF Overview
- Agency Experiences
- Common Themes
- Open Discussion
- Requesting a Workshop
RWM CMF Overview

What does RWM include?
• Maintenance and operations activities to prevent or mitigate the impacts of adverse weather

How does the RWM CMF Work?
• Assesses ability to manage operations before, during and after weather events
• Assists in making appropriate RWM improvement and investment decisions

Who uses the RWM CMF?
• Agencies or regions looking to evaluate current RWM capabilities and identify a list of actions to raise capabilities to the desired levels
### RWM CMF Overview (cont.)

Matrix that defines process improvement areas and capability levels

<table>
<thead>
<tr>
<th>Dimensions / Process Areas</th>
<th>Level 1 Ad-Hoc.</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4 Optimized.</th>
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<tbody>
<tr>
<td>Plans, Programs, Budgets</td>
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<td>Approach to building systems</td>
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<td>Use of performance measures</td>
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<td>Improving capability of workforce</td>
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<td>Changing culture and building champions</td>
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<td>Improving working relationships</td>
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<td>Business Process</td>
<td>Statement of capability</td>
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<td>Collaboration</td>
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**Levels of Capability**

- **LOW**
- **HIGH**

**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.
CMF Assessment Process

1. Prepare for CMF
   - Assemble the right group
   - Decide on the geographic/jurisdictional scope
   - Define operational objectives

2. Conduct CMF Review
   - Answer the self-assessment
   - Review capability levels by answers
   - Identify improvement areas
   - Review suggested actions
   - Modify and select actions for further consideration

3. Develop Implementation Plan
   - Prioritize selected actions
   - Develop timeline for implementing actions
   - Identify champions for actions

4. Review Progress
   - Review status of actions
   - Adjust based on new information
   - Revisit step 1
Road Weather CMF Electronic Tool

Welcome

Welcome to the Road Weather Management Capability Maturity Self-Evaluation Tool. This tool is intended to help agencies/regions assess their current traffic management capabilities and develop an implementation plan for moving to a higher level of capability. This plan development is guided by a menu of actions to consider based on current and desired levels of capability. Users of the tool can take a full, highly detailed assessment, or a quick (1-minute) assessment to arrive at the point of selecting actions.

Modeled after the AASHTO Systems Operations and Maintenance guidance, this tool assesses road weather management capability in the same six dimensions — Business Processes, Systems and Technology, Culture, Organization, Performance Measurement, and Collaboration. However, in this tool, road weather management is viewed as a subset of the larger Transportation Systems Management and Operations (TSMO) program. 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 road weather management at the regional level. Users that take this assessment are encouraged to share this tool with agencies that they collaborate and work with on road weather management of their respective transportation systems.

Before initiating the assessment, you may want to identify the individuals in your Road Weather Management Center or other traffic operations and planning personnel in the region who are best positioned and experienced to address the steps outlined above, and involve them throughout the self-evaluation and action planning process.

Name: Type your name here
Email: Type your email here
Agency: Type your agency here
Department: Type your department here


RW CMF State Agency Experiences - Webinar #1
Non-Winter Weather States

Four locations in three states conducted RWM CMF assessments through this effort:

**Dallas, TX** (April 2017)
**Houston, TX** (April 2017)

**Arizona** (May 2017)
- **Mark Trennepohl**
  - Arizona DOT

**Nevada** (July 2017)
- **Rod Schilling**
  - Nevada DOT
DALLAS, TX
CMF Evaluation Results

Strengths
- Proactive approach to RWM
- Training programs
- Relationship with media
- Link between RWM and TSMO

Opportunities/Challenges
- Vehicle fleet data
- Engagement with NWS
- Risk-based RWM strategies
- RWIS Sensor enhancement
- Use of social media
- Operational performance impacts
- Metrics across diverse weather events
Priority Actions

Plans and Procedures
- Develop RWM strategic plan
- Standardize operational procedures
- Develop approach to data sharing
- Create procedures to monitor and maintain field equipment
- Conduct post-event review

Field Information
- Create automatic vehicle reporting
- Create communications pathway to devices

Performance Management
- Define event-based RWM measures
- Integrate performance reporting with data archives
Progress-to-Date

- Regional TSMO Program Plan being developed
  - Use of RWM CMF results as input

- 511 Dallas-Forth Worth (511DFW) Traveler Info System enhancements
  - Information Exchange Network (EcoTrafiX)
  - Web app enhancements
  - Mobile app enhancements
  - Interactive Voice Response (IVR) enhancements
Benefits of RWM CMF

- Reached cross-section of agency personnel
  - Weather
  - First responders
  - Traffic operations
  - Public works
  - Field staff

- Understanding of how different groups should be working together

- Improved overall understanding of the CMF
CMF Evaluation Results

Strengths
• Preparedness capabilities
• Strategic planning for hurricanes
• Processes for events with lead times
• Relationship with media

Opportunities/Challenges
• Funding
• Spot-specific RW management
• Technology maintenance
• Measuring rare and infrequent events
• Consistent messaging
• Local collaboration
Priority Actions

Data and Performance Management
- Establish systems for data quality
- Implement Decision Support System (DSS)
- Define key metrics

Agency Capabilities
- Create response team for O&M issues during events
- Enhance capability for TMC to respond to conditions

Field Information
- Establish procedures to maintain equipment
- Create communications pathway to devices

Strategy and Procedures
- Develop a strategic roadmap
- Use post-event info to enhance procedures
Progress-to-Date

- Regional TSMO Program Plan being developed
  - Use of RWM CMF results as input

- Applied for TIGER Grant to enhance Flood Warning Flasher Systems (response to Hurricane Harvey)

- Considering adding topographical map overlay on traveler info website (Houston TranStar) to support flooding predictions

- RWM remains a challenge on local roads not usually monitored with CCTV

- Looking into coordinating regional and statewide traveler info sites (Houston TranStar and DriveTexas)
Benefits of RWM CMF

- Opportunity for regional problem-solving
  - Every city and county in the region was invited

- Provided a forum for the region to reprioritize issues and a set of criteria for improvement

- Reinforced overall CMF concept aligning with the methods used in the statewide TSMO planning initiative
CMF Evaluation Results

Strengths
• Flexibility for investments
• Use of RWIS data
• After action reports
• Snow Desks

Opportunities/Challenges
• Diversity of weather
• Constrained budgets
• Limited RWIS network
• Performance measures and fleet data
• Event definitions
Priority Actions
(3 - 12 months)

Standardized Event Response
- Define event start and end times
- Standardize DMS message library
- Document social media policy
- Provide response to PIO

Performance Management
- Research outcome-based measures
- Develop QA/QC approach for RWIS

Weather-Savvy Roads
- Implementation of EDC initiative (Pathfinder and IMO)
Progress-to-Date

A Note About Dimension Capability Levels
• Collaboration - Scored Highest
• Culture - Consistently Scored High

Developing an Implementation Plan
• ADOT PDCA - Plan-Do-Check-Act Process

Arizona 3 - 12 Month Priority Actions
• Standardized Event Response
• Performance Management
• Winter Preparedness
• Weather-Savvy Roads

Pathfinder
NEVADA
CMF Evaluation Results

Strengths
- TSMO plan with RW Role
- Coordination during major events
- NDOT IT capabilities
- Snow plans in each district

Opportunities/Challenges
- No dedicated RWM role
- Procurement process
- Training
- Use of Winter Severity Index
- Legacy IT systems
- Automation of procedures
- Ad-hoc coordination with cities/localities
Priority Actions (3 - 12 months)

Pathfinder-Focused
- Conduct a Peer Exchange on PikAlert
- Identify examples of consistent messaging
- Train staff on roles of NWS/Private Sector for forecasting
- Expand pre-event messaging for specific events
- Conduct statewide meeting
- Have regional NWS rep conduct training

IMO-Focused
- Identify needs for E-MDSS and MMS
- Determine how IMO data can address needs

Lessons Learned
- Conduct debriefing of last winter
- Identify lessons learned
Progress-to-Date

Pathfinder
- Coordination between NWS Reno and District II staff to issue weather forecasts using new chart for situational awareness
- Planning statewide meeting between districts and WFOs
- NWS rep conducting short training at winter preparedness meeting

IMO
- Conducted peer exchange on PikAlert Systems
- Contracting with Pikalert for use of EMDSS and selected features of the MAW

General
- Looking into State Transportation Innovation Councils (STIC) funding opportunities
Common Themes
Capabilities (Non-Winter Weather Locations)

- Collaboration scored highest across all locations
- Culture consistently scored high
- Performance Mgmt. consistently scored lower
  - Also observed in Winter Weather Locations
Common Themes
Actions (Non-Winter Weather Locations)

- Coordination
  - Improve coordination with the NWS
  - Standardize internal and external communication protocols

- Plans and Procedures
  - Develop TSMO program Plans with CMF input
  - Develop standard procedures around road weather O&M

- Operations
  - Enhance 511 information systems (e.g., flooding, hurricanes)
  - Utilize decision support systems
  - Identify/enhance VMS messaging

- Evaluating Effectiveness
  - Identify outcome-based performance metrics
  - Better utilize post-event debriefs
Open Discussion

- Usefulness of process?
- Recommendations for future use?
- Other questions?
For More Information or To Request CMF Workshop

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  - (224) 415-1449

For RWM CMF Resources and Online Tool
https://ops.fhwa.dot.gov/tsmoframeworktool/available_frameworks/road_weather.htm