17-1-1 DMS Policies & Procedures **November 2015**

INTRODUCTION

This document outlines the policies and procedures for the operation of WisDOT's Traffic Management Center's (TMC) Dynamic Message Signs (DMS), and was created for personnel in state, regional, and local transportation agencies that have responsibility for the operation of and/or message design for permanent DMS.

DYNAMIC MESSAGE SIGN OVERVIEW

Dynamic Message Signs (DMS) are the most visible manifestation of traveler information systems. They are electronic message boards placed in close proximity to roadways that allow traffic system operators to inform drivers on changing traffic conditions. DMS are commonly used for congestion warnings, lane and ramp closure information, alternate route information, and traffic flow diversion. The ability to quickly alert motorists of a problem ahead and provide an alternate route through a DMS is a successful strategy for minimizing the impact of an incident on traffic flow. DMS have demonstrated to provide the following benefits:

- Reduction of speeds as vehicles approach congested areas, resulting in fewer accidents;
- Increased diversion to alternate routes during incidents, resulting in better traffic network performance;
- Increased lane changes away from lanes that are closed downstream, resulting in safer merging operations; and
- Improved traffic operations during special events.

As soon as TMC Control Room Operators verify incidents, they can create and display messages on the appropriate DMS in order to provide drivers with real-time information on traffic conditions, either as advisories or as proactive route guidance. DMS messages aid drivers to make more informed decisions on congestion avoidance and en route diversion.

> *"Paramount to the message design and display, [DMS] must provide timely, reliable, accurate and relevant information and they must be operated properly to be effective. Credibility is an extremely important consideration in properly operating a [DMS] system. Regardless of how well a message is designed, motorists will eventually come to distrust the signing system if the messages are not changed at the correct times and updated to reflect correct traffic conditions."*[1]

The policies and guidelines presented in this chapter have been developed to support these goals. Discrepancies between the acquired information and the travel experience *may* lead drivers to rely less on information over time.

NATIONAL DYNAMIC MESSAGE SIGN OPERATIONAL POLICIES

There are no written DMS operations policies at the national level. However, policies, standards, and guidance are embodied in the MUTCD and in FHWA guidance documents and policy memorandums.

The primary chapters and sections addressing DMS in the MUTCD are:

- *Chapter 2L. Changeable Message Signs*
- *Section 6F.60. Portable Changeable Message Signs*

The MUTCD states that,

> *"…CMS **shall** display only traffic operational, regulatory, warning, and guidance information. Advertising messages **shall not** be displayed…"*

Additionally, FHWA published a document that includes specific guidance for DMS messaging (Guidelines for Disseminating Road Weather Advisory & Control Information) in June 2012. This document includes, but is not limited to road weather information; it includes guidance on DMS content structure, length, phrasing, phase timing, and effective ways to communicate travel times, delay, event locations, degrees of urgency, and degrees of certainty.

(http://ntl.bts.gov/lib/45000/45600/45623/FinalPackage_JPO-12-046_V1.pdf)

[1] FHWA's Guidelines for Changeable Message Sign Messages, Page 2-7

WISDOT DYNAMIC MESSAGE SIGN OPERATIONAL POLICIES

1) WisDOT's DMS *may* be used for the following situations as they apply to freeways, ramps, and approved surface streets:
   - Traffic incident management
   - Emergency situations requiring diversion
   - AMBER Alerts and Silver Alerts
   - Recurrent traffic congestion
   - Current roadwork – including lane, ramp and roadway control
   - Future roadwork (up to 10 days in advance)
   - Special event (See TEOpS 17-2-1 for attendance thresholds)

   In addition, DMS *may* be used to display:
   - Current travel times
   - Static travel times
   - Adverse weather conditions
   - Warning of adverse road weather conditions
   - Transportation safety messages
   - Fire prevention purposes in high fire risk areas
   - Other approved transportation-related messages.

2) DMS *should not* be used to display the following information:
   - Advertising products or slogans, whether WisDOT related or not
   - General rules of the road messages that drivers *should* already adhere to (i.e. "Be prepared to stop")
   - Non-threatening weather reports or temperature
   - Time of day or date
   - Directions for specific user groups

   Note: As an alternative to displaying such of any non-approved messages listed above, the traffic media can be contacted by the TMC to broadcast a "Media Alert" at their discretion.

3) DMS messages for the approved applications *should* be posted in accordance with the prioritized hierarchy listed in Section 3, "Hierarchy for Displaying Messages", in the Operational Guidelines of this chapter.

4) DMS signing *should* only be done after the operator confirms the conditions/incidents with a reliable source.

5) References to PARK AND RIDE lots *should* only be made when in relation to another approved signing application such as special events.

6) Alternate routes *should* only be signed for, or in the event of, a freeway closure or major incident.

7) Only alternate routes approved by Department staff or the Control Room Shift Supervisor *should* be referenced when using DMS to sign for alternate routes (off the freeway).

8) Arterial DMS (ADMS) *should* primarily be used to inform motorists of conditions on freeways or approved alternate routes.

9) Signs *should* display current Travel Time messages as default messages. Blank signs are allowed at locations where there is little or no reoccurring congestion or commuter traffic (i.e. rural areas). Hybrid DMS *may* be blank when travel time data is unavailable.

10) Message format and content *should* follow guidelines set forth in the Operational Guidelines of this Procedure.

11) Use of DMS for fire prevention purposes is further defined in the Memorandum of Understanding between the Wisconsin DNR and WisDOT in the Fire Prevention Memorandum of this Procedure. Message activation *should* adhere to the guidance provided in the Control Room Operations Manual Red Flag Warning section 8.N.

DYNAMIC MESSAGE SIGN OPERATIONAL GUIDELINES

1) Situations that warrant the use of DMS

a) Current and Future Situations:

i) Current Situations

(1) Planned Situations

- Roadwork (construction and maintenance)
- Special events (See TEOpS 17-2-1 for attendance thresholds)

(2) Unplanned Situations
- Recurrent traffic congestion
- Incidents affecting traffic
- Emergency situations requiring diversion
- AMBER Alerts and Silver Alerts
- Warning of adverse road weather conditions during adverse weather events

(3) In addition, DMS *may* be used to display
- Current travel times
- Static travel times
- Confirmed or imminent adverse or severe weather conditions
- Transportation safety messages
- Other transportation-related messages

ii) Future Situations (up to 10 days in advance)

(1) Future special events

(2) Future roadwork (construction and maintenance)

b) Transit and Park-and-Ride Lots

Messages referencing transit or park-and-ride lots *should* only be displayed during special events such as Summerfest or State Fair to help mitigate congestion resulting from attendees. For example:

SUMMERFEST TRAFFIC USE BARKER RD PARK/RIDE LOT	STATE FAIR TRAFFIC USE WATERTOWN PLANK PARK/RIDE LOT

c) Signing for Alternate Routes

i) Freeways as alternate routes – The freeway system is the preferred alternate route, if practical. An alternate freeway route *should* only be signed for when incidents or roadwork on the primary route cause delays above 30 minutes. For example:

I-43 NB CLOSED AT MARQUETTE INT FOLLOW DETOUR	GREEN BAY TRAFFIC USE I-894 BYPASS TO US 45 NB

ii) Arterial streets as alternate routes – Only pre-approved surface streets *should* be referenced when traffic diversion or detouring is necessary. If diverting or detouring traffic off the freeway is necessary and no pre-approved routes are available, the phrase USE ALTERNATE ROUTE *should* be used.

2) Verifying Conditions and Events that will Utilize DMS

No message *should* be put on a sign until the message information has been verified by a reliable source. CCTV camera images will provide the most common source for verification. Other sources include, but are not limited to, WisDOT staff, or law enforcement.

3) Hierarchy for Displaying Messages

Messages for DMS *should* be displayed in accordance with the guidelines listed below. This section lists the message priority during all times.

a) Incident/Weather/Emergency - Incidents that cause freeway lane closures for at least 15 minutes or conditions lasting at least 15 minutes that are hazardous to motorists and requiring active diversion. Events that block all traffic lanes or cause hazardous conditions *should* be given priority over all other messages. Hazardous conditions include stopped or slowed traffic where sight distance is limited or

weather-related hazard conditions exist. Refer to part 6) g) vi) of this section of the policy for information regarding the placement of adverse conditions messages on DMS requested by law enforcement.

b) Amber Alert or Silver Alert – The TMC will utilize the Dynamic Message Signs (DMS) to notify the traveling public of the Amber Alert or Silver Alert.

AMBER ALERT INFO TUNE TO 1610 OR CALL 511	SILVER ALERT MISSING PERSON CALL 511 FOR INFO

In the event that a major incident and an Amber or Silver Alert occur simultaneously, WisDOT will make every effort to display information for the incident and the Amber Alert through a two-phase DMS message

c) Roadwork (construction and maintenance) – Priority *should* be given to events that have the greatest negative impact on traffic and that are expected to last the longest.

d) General traffic flow conditions – General traffic flow information such as levels of congestion or delays.

e) Current travel times.

f) Current special events – During special events, route guidance, exit information, and park-and-ride information *may* be provided to motorists.

g) Future occurrences (according to chronological date) – Priority *should* be given to whichever event is expected to occur first, has the greater impact on traffic, or is expected to last the longest.

h) Transportation-related messages – Other transportation-related messages, including safety messages, *may* be scheduled and provided to motorists.

4) DMS Status

Monitoring messages on DMS – Messages on DMS *should* be continually monitored to ensure that the information presented on each sign is current.

5) DMS Use for Arterial Streets

a) Arterial DMS (ADMS) – All policies and guidelines contained in this chapter apply to Arterial DMS. Arterial DMS *should* only be used for the same applications as freeway DMS. Arterial DMS *should not* be used to provide information for any other routes, incidents, conditions, or events that freeway DMS does not support, with the exception of freeway on-ramp closure information.

b) Signing for arterial conditions – DMS messages on freeway or arterial signs *should not* present information pertaining exclusively to surface street routes. Surface street information *should* only be presented as supplementary information for freeway conditions to allow motorists to make decisions regarding route selection, with the exception of freeway on-ramp closure information.

6) Message Design

a) <u>General</u>

i) Standard Terminology – Messages *should* be designed using standard terminology as defined in the “Message Design Dictionary”. All words in the Message Design Dictionary *should* be stored in the TIS (Traveler Information System) dictionary. Words not found in the Message Design Dictionary *may* be used when necessary. New words *should* be approved and included in the Message Design Dictionary before they are included in the TIS dictionary. MUTCD approved shields, symbols, and graphics *may* be used while following all other applicable operations guidelines. Contact the Statewide Freeway Traffic Operations Engineer or the Control Room Shift Supervisor for the message library.

ii) Message Length Limitations – Messages *should* be kept as short and concise as possible.

Messages *should* generally be no more than 8 words in length (4-8 characters per word) excluding prepositions (to, at, for, etc.).

Messages *should* use no more than two information units per line, three information units per phase, four information units per message read at speeds of 35 mph or more, and five information units per message read at speeds less than 35 mph. Messages *may* reference other sources containing additional information (e.g., 511, Highway Advisory Radio).

An information unit can be defined as the answer to a basic question about the subject of the message. For example, in the bullets below, each answer to the question is a single information unit each.

- What is the problem?
  - FLOODING, SLICK IN SPOTS, BLOWING SNOW
- Where is the problem?
  - AT US 41, PAST WIS 151, MADISON AREA
- Who is affected?
  - BELOIT, ALL TRAFFIC, WEST BOUND TRAFFIC
- What *should* they do?
  - USE I-894 EAST, REDUCE SPEED, TRAVEL NOT ADVISED

iii) Message Phasing – When possible messages *should* be displayed in one phase. Messages *should* be displayed in no more than two phases. If two phases are used, each phase *should* be distinct and understandable by itself. When dividing messages between two phases, compatible information units *should* be kept in the same phase. One line *should not* contain parts of two information units, but *may* contain two whole information units.

Minimum message display time *should* be determined according to posted speeds and units of information to ensure that motorists will be able to read the entire message. The display time should be determined by the lesser of one second per word or two seconds per unit of information. A minimum displaying time of 2 seconds per line per phase *should* be used for speeds of 55 mph. The maximum cycle time of a two-phase message should be eight seconds. When speeds are below 30 mph, a minimum displaying time of 1 second per line per phase *may* be used.

Graphic messages are limited to one phase.

iv) Flashing Messages – Flashing messages **shall not** be used.

v) Indication of Lanes

(1) For messages pertaining to three or fewer lanes, the terms “LEFT,” “CENTER” or “RIGHT” *should* be used to describe the affected lanes.

(2) For messages pertaining to four or more lanes, the following format is recommended:

(a) [n] [LEFT/RIGHT/CENTER] LANE(S) CLOSED where:

LEFT – represents the left lane only

RIGHT – represents the right lane only

CENTER – represents any center lane exclusively

LANES – to be used when the number of affected lanes is not known

n – number of affected lanes

For example:

LEFT LANES CLOSED AT HAWLEY RD MERGE RIGHT

2 RIGHT LANES CLOSED AT 35TH ST USE ALT ROUTE

vi) Shoulders – The phrases “LEFT SHOULDER,” “RIGHT SHOULDER” and “BOTH SHOULDERS” can be used in cases where shoulders are closed.

vii) Freeway Exit Designation – Exit designations *should* be consistent with those specified on static signs in the area.

viii) Use of Local and General Terminology

(1) Local Terminology – Local terminology refers to names or places that are typically recognized only by motorists that frequently drive in the area.

(2) General Terminology – General terminology uses generic terms including distances and abbreviated jurisdictional freeway designations to describe locations that most drivers *should* understand. This section gives examples of situations when common local and general terms *should* be used.

(3) Target Audience – The use of local or general terminology is dependent on target audience. The target audience can be commuter/local traffic, through traffic, special event traffic, or all traffic. Commuter/local traffic *should* be addressed using local terminology. Through/all traffic *should* be addressed using general terminology. The AM (6:00am-9:00am) and PM (3:00pm-6:00pm) peak periods *should* address commuter/local traffic. All other periods *should* address all traffic. During days which special events are being held (Summerfest, State Fair), only general terminology *should* be used throughout the entire day.

(4) Interchanges – The use of local interchange names (Marquette, Zoo, etc.) *may* be used when commuter/local traffic is the target audience. Otherwise, interchanges *should* be referenced to by the abbreviated jurisdictional designation (I-94, US 45, etc.) of the highways and streets that compose the interchange.

(5) Freeways – The use of local freeway names (East-West, Rock, etc.) *should not* be used. Freeways *should* be referenced to by their abbreviated jurisdictional designation (I-94, US 45, etc.). An acceptable exception is the use of Airport Spur instead of STH 119

(6) Streets – Streets *should* be referenced to by their local street name, not by their jurisdictional designation (e.g. use GREENFIELD AVE, not WIS 59) unless the jurisdictional designation is more commonly known (e.g. WIS 100 between Edgerton Ave. and Silver Spring Drive in Milwaukee). In either case, static signing *should* be in place for the referenced street. Names *should* be followed by facility descriptors (Rd, Ave, St, etc.) for clarity. If space on the text line is not available, the descriptor *may* be omitted. Street names that could be confused with directions (North Ave) or cities (Beloit Rd) *should* always be listed with their descriptors.

ix) Abbreviations – Abbreviations *should* be used only when no other formatting or terminology can be used to convey the message. The length of the abbreviation *should not* exceed two-thirds the length of the word.

x) Text Alignment – Text on all signs **shall** be centered, except graphic messages and for travel times, when justified alignment *may* be used.

xi) Font – All the text *should* be displayed in capital letters, using only one font size and only one font type.

xii) Letter Size – For roadways with posted speeds of 45 mph or higher, the minimum letter height *should* be 18". For roadways with posted speeds of less than 45 mph, the minimum letter height *should* be 12 ".

xiii) Character Spacing – Proportional spacing *should* be used as much as possible. Fixed spacing *may* be used.

xiv) Graphics, Symbols, and Animation – DMS *may* use standard Highway sign and route shield symbols provided they meet the requirements of the MUTCD, Section 2L.04. DMS **shall not** display graphics, symbols, or animation other than those approved by the MUTCD.

xv) Brightness – Operators *should not* change the brightness, unless directed by Department staff or the Control Room Shift Supervisor. Brightness is auto-adjustable and fluctuates during the day to adapt to natural conditions.

b) Messages for Incidents/Current Roadwork/Congestion/Emergency

i) Message Content – Messages about incidents, roadwork, or congestion *should* contain the following minimum information:

- Problem
- Location
- Action

These messages *may* also contain the following additional information:

- Effect on Travel
- Audience for Action
- Good Reason for Following the Action

[Problem] [Location] [Action]

ii) Message Format – Each piece of information *should* be presented in the order shown below:

iii) Problem – This information refers to the reason for posting a message and provides information about the situation that the driver will encounter. Examples include DELAYS AHEAD, LANE CLOSED, and RAMP CLOSED.

(1) Lane/Ramp Closures – Lanes/Ramps *may* be closed due to roadwork or incidents. When roadwork is the cause of a lane/ramp closure, the term CLOSED *should* be used. When incidents are the cause of the lane closure, the term CLOSED *should* be used. The phrases "ALL LANES CLOSED" or "ALL LANES CLOSED" *should* be used when all travel lanes are closed.

(2) General Traffic Flow Conditions – During periods of recurrent congestion, traffic conditions *should* be described as:

- REDUCED SPEEDS – speeds of 36 to 50 mph (yellow on map)
- DELAYS – speeds of 21 to 35 mph (pink on map)
- SEVERE DELAYS – speeds of 0 to 20 mph (red on map)

iv) Location – Describes the location or distance to the situation or the approximate area of the event. The location *should* be specified using cross streets or distances downstream of the DMS.

(1) Local Terminology – Local terminology *should* reference the closest cross street(s) that apply to the event when common cross streets are close together. For example, use AT LOCUST ST, or NEAR HWY 83.

(2) General Terminology – General terminology *should* reference a distance downstream of the DMS to the nearest half mile when common cross streets are far apart. For example, use # MILES AHEAD.

(3) Landmarks and Areas – Landmarks and areas *should not* be used as location references. Exceptions include DOWNTOWN and AIRPORT.

(4) Locations on DMS Upstream of Congestion – When utilizing DMS that are located upstream of the event, the location of the event *may* be specified at one point, or between two points. For

DELAYS AT 35TH ST

DELAYS AHEAD 35TH ST TO 84TH ST

DELAYS CLEAR AT 84TH ST

example:

(5) Locations of DMS in congestion – When utilizing DMS that are located in areas that are congested, messages *should* inform drivers where the congestion clears. For example:

(6) Route Designation – The freeway/highway designation *should* be included as part of the location if the event is located beyond or spans a freeway-to-freeway interchange.

DELAYS I-94 EB AT 84TH ST

For example, if traveling on I-94 EB the sign at Elm Grove Rd. *should* read:

Because motorists could travel on I-894 eastbound or US 45 northbound, the highway must be identified in the message. Phased messages *may* be used to inform motorist of conditions on multiple highways.

v) Action – This refers to what action the motorist *should* take in response to the problem and location information. Examples include USE ALTERNATE ROUTE, EXIT NOW, or MERGE RIGHT. Action statements *should* be used when the tactics prescribe an active response. BE PREPARED TO STOP/SLOW **shall not** be used.

vi) Audience (optional) – This information refers to a specific group of drivers rather than everyone passing the DMS. Examples include TRUCKS, DOWNTOWN TRAFFIC, and NORTHBOUND TRAFFIC. If an audience statement is used, an action statement *should* be included.

vii) Effect on Travel (optional) – Informs the traveler of the severity of the situation by using delay or travel time and helps the traveler form expectations about their trip or decide to change their travel plans. Examples include DELAYS AHEAD or # MIN DELAY.

viii) Good Reason for Following the Action (optional) – Gives a traveler confidence that following the advice on the DMS will result in safer travel and/or significant savings in time. Examples include BEST ROUTE TO AIRPORT or AVOID DELAY.

c) Messages Displaying Travel Times

Current Travel Times *should* only be displayed when the system is accurately calculating travel times. Travel Times less than the static travel times *should not* be displayed. Travel Times *may* be used to display travel time comparisons between alternate routes. For example:

FREEWAY TIME TO AIRPORT	
VIA I-894	15 MIN
VIA I-94	18 MIN

Freeway, arterial and hybrid static-dynamic message signs *may* be used to display travel times.

d) Messages during Special Events

i) General – Directions for specific user groups will not be provided on DMS.

ii) State Fair/Summerfest – DMS *should* be used to provide motorists with park-and-ride information during State Fair/Summerfest. A TMP (Traffic Management Plan) is created for each year's State Fair and Summerfest events. The TMP includes DMS messages that operators *should* use during State Fair and Summerfest events.

iii) Miller Park Events

(1) DMS *should* be used to provide motorists with information regarding traffic conditions around the I-94/US 41 Interchange during Miller Park events. A TMP has been created for Miller Park events. The TMP includes DMS messages that operators *should* use during Miller Park events.

(2) Line DMS (LDMS 50 & 51)) *should* be used to inform motorists about Miller Park Events. LDMS *should not* convey traffic or any other related information that is not Miller Park-event related. Unless otherwise determined by the Department staff or the Control Room Shift Supervisor, messages on LDMS *should* warn drivers to tune their radios to the Miller Park HAR frequency (1180 AM), where complete messages will be broadcast.

e) Messages for Future Roadwork

DMS *should* be used only for future roadwork that involve lane/ramp closures and that will start within 10 days or less. DMS *may* be used in support of traveler information to notify drivers of changes to closures/detours affecting drivers' route choice. DMS message plans are not generated from closure information entered into LCS (Lane Closure System). WisLCS Advance Notification Guidelines *should* be referenced for notification minimums. Message requests *may* be altered to conform to the message design format described in Part 6 of this policy.

Messages for future roadwork *should* follow the general guidelines roadwork scheduled to begin in the next 7 days:

i) Message *should* include the date and time the roadwork will start.

ii) Message *should* use the day of the week rather than the calendar dates. For example, "TUES – THURS"

iii) Message *should not* use the phrase "FOR 1 WEEK" because the start and end dates are ambiguous.

iv) Message *may* use the term "WEEKEND" if the event begins on Saturday morning and ends on Sunday evening.

RAMP CLOSED THUR 9AM – 3PM

Example:

Messages for future roadwork *should* follow the general guidelines roadwork scheduled to begin in more than 7 days, but within 10 days or less:

i) Message *should* use a 3-letter month abbreviation rather than a numerical month representation. For example, "FEB 22."

ii) Message *should* only state the month once if both dates in a range are in the same month. For example, "FEB 22 – 28"

iii) Message *should not* include day, date, and time information.

RAMP TO CLOSE FEB 22 - 28

Example:

f) Messages for Future Special Events

DMS *should* be used only for future special events that are expected to have a negative impact on traffic and that will start within 10 days or less. Messages for future events *should* follow the general guidelines for current special event. In addition, message *should* include the date and time the special event will start.

g) Messages for Adverse Weather Conditions

i) General – DMS *should* only be used to inform drivers of adverse weather conditions that are currently affecting travel. Reliable weather reports of imminent severe weather *may* be displayed. Examples include winter warnings related to ice, storms and blizzards. General weather reports or forecasts **shall not** be displayed.

ii) Evaluating the need for adverse weather messaging – the following *should* be taken into consideration when evaluating the need to message for adverse weather conditions:

- Is there a storm or weather warning in effect for county/area? If so, use the warning's expiration time as a guide for how to long to place the message on the DMS.
- Is there a significant increase in the number of traffic incidents in the county/area? Is the number of incidents unusual for that time of day?

iii) Format for Weather Condition Messages – Messages for severe weather conditions that affect traffic *should* follow the same format as messages for incidents, roadwork, and congestion. The problem statement *should* indicate the weather condition. Examples include ICY ROADS or POOR VISIBILITY.

DMS *should* be used to broadcast Winter Storm Warnings, Blizzard Warnings, Lake Effect Snow Warnings and Ice Storm Warnings issued by the National Weather Service (NWS). When a warning is issued by NWS, notify the Control Room Supervisor or On-Call BTO Management. On-Call BTO Management will provide approval for the warning messages to be deployed. The message *should* include the time frame of the warning, for example MON 6PM TO TUE 5AM. The message *should*

include a command for the driver, for example PLAN AHEAD prior to the warning taking effect and REDUCE SPEED during the warning.

Messages *may* provide additional details about the weather event—or its driving impact — to improve the specificity of the prediction and increase the certainty communicated by the message. These details can include information about the location, timing, or impacts of a road weather event.

iv) Communicating Urgency – Messages *should* use command style messages when the situation is urgent and an immediate control action is required by the driver. Examples of command style messages include REDUCE SPEED or MOVE TO RIGHT LANE.

Messages *should* use notification style messages when an immediate control action is not required, or the situation is not urgent. Examples of notification style messages include “ICE AHEAD” “USE ALTERNATE ROUTE” or “STORM WARNING.”

Messages *should* reflect the current roadway conditions or warning status. Monitor the conditions hourly and update the messages when needed. The Control Room Supervisor *should* approve updated messages. Remove messages when not needed for the current conditions.

v) Communicating Certainty – Messages *may* provide a qualitative description, such as CERTAIN, POSSIBLE, or A CHANCE, that will correspond to the likelihood of a road weather event.

vi) Requests from law enforcement - TMC operators *may* consider requests from law enforcement to display spot specific messages. Messages not included in the TIS Library *should* be sent to the TMC Supervisor or On-Call BTO Management for approval before use.

h. Messages for Transportation Safety

Transportation related safety messages *may* be displayed on DMS in accordance with an agency developed safety message calendar. Safety messaging *may* supplement a local or statewide safety media campaign and be of the same topic to communicate timely and relevant information. Safety messages *may* be scheduled in accordance with the National Highway Traffic Safety Administration (NHTSA) campaign schedule. An annual safety message calendar will be developed with coordination among State agencies and Bureaus including but not limited to BOTS, DSP (includes the bureau of public security and communications), BHM, OPA and BTO. Safety messages are secondary priority and *may* be preempted by all other purposed messages at the discretion of the TMC Control Room operator.

i. Schedule - The annual safety message calendar will identify the planned campaigns and their corresponding local or statewide safety media campaign. The safety message calendar will be developed for a 12-month period with approval by the Chief of Local Programs from the Bureau of Transportation Safety, the Director of the Office of Public Affairs and the Freeway operations engineer, Supervisor and Chief in the Bureau of Traffic Operations. Changes to the annual calendar will be minimized for scheduling purposes to allow message planning and sign scheduling. Sign and message selection will be made with consideration for alternate priority messages including but not limited to construction and conditions messaging. Individual safety campaigns *should* be reviewed by regional operations staff for work zone message priorities and comment.

ii. Message Content – Safety messages *may not* repeat the campaign message in order to avoid resemblance to advertising. The message *should* be simple and brief and slogans **shall not** be used. The message *may* contain fatality information that is current. Failure to include current information reduces message credibility. Content will adhere to message format defined in this guidance. TMC staff will determine final message content in accordance with policy, sign size and sign functionality. Safety messages *should* consist of a single phase and *may* be displayed as a second phase with another priority message. Examples of safety messages are included in the Message Guidelines of the WisDOT TMC Control Room Operator’s Manual.

iii. DMS selection – Sign locations **shall** be specified for each safety message plan included on the annual calendar. Locations *should* be selected with consideration for scheduled higher priority messages and construction zones. For example, a travel times should not be replaced by a safety message. Message displays *should* be consistent along a roadway corridor and adjacent corridors. Counties with higher rates of non-compliance per campaign topic *may* be emphasized.

iv. Units of Information – A safety message with two or less units of information *may* be displayed as a second phase with travel times. DMS with travel time messages with five or more units of information on a single phase *should not* be used for safety messaging.

Message content and sign locations **shall** be reviewed by the Statewide Freeway Traffic Operations Engineer for conformance with these guidelines prior to the display of safety messages.

i. Consistency and Credibility

Consistency in message design is a key factor in providing understandable messages. Before displaying a message, operators *should* check the event status, all message elements, and all message attributes in order to ensure that the message is accurate and useful. Inaccurate messages *may* mislead motorists, cause confusion, or reduce public trustworthiness in DMS messages.

Message credibility is also enhanced when messages are updated appropriately and removed promptly as conditions change.

The following message characteristics *should* be avoided because they can damage the credibility of a message:

- Information is inaccurate or not current and can be easily checked by travelers and disproved.
- Information is irrelevant to most travelers.
- Information is obvious, and thus redundant to travelers' visual inspection.
- Information is repetitive, i.e., the same information is presented over a long period of time.
- Information is trivial with regard to the driving task.
- Information is poorly presented and thus difficult to comprehend or confusing.

Message Library - The TIS Library of common messages *should* be maintained and updated as needed. Department staff or the Control Room Shift Supervisor *should* approve any words or abbreviations that are not in the TIS Library before their use. Graphic messages will be maintained in a separate directory. Graphic messages are sign specific by size and content. Contact the Statewide Freeway Traffic Operations Engineer or the Control Room Shift Supervisor for the message library.

Coordination with Other Traveler Information Systems - Care *should* be taken to coordinate all traveler information systems. PCMS guidelines (17-2-1) and use should be considered when DMS messaging supports the same situation. Other traveler information systems include portable changeable message signs, The Wisconsin 511 App, highway advisory radio, the Wisconsin 511 Traveler Information system, the WisDOT main web site, and social media platforms (Facebook, Twitter, etc). The general concepts related to driver expectations and driver comprehension of the different phrases applies to all dissemination tools. Continual monitoring and updating of each system is required.

Note:

The following changes are being submitted for the Fire Safety MOU included on the next page.

Section D part 1, include ***"DNR will notify DOT of areas under watch with high probability of becoming a high fire risk area leading to a safety messaging request".***

And,

Section D part 6, include ***"DOT will provide expense records to DNR of costs for message board use".***

Memorandum of Understanding

by and between the

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

and the

WISCONSIN DEPARTMENT OF TRANSPORTATION

on

Information needs and liaison procedures for installation and maintenance of DNR Smokey Bear fire danger signs and use of DOT Electronic Message Boards

This Memorandum of Understanding ("MOU") by and between the Wisconsin Department of Natural Resources ("DNR")and the Wisconsin Department of Transportation ("DOT")defines the liaison procedures for the review and concurrence on the installation and maintenance of DNR Smokey Bear Fire Danger signs ("Smokey Bear Signs") and use of DOT Electronic Message Boards.

A. Purpose

The purpose of this MOU is to provide mutual departmental procedures for the review of the installation and maintenance of DNR Smokey Bear Fire Danger Signs and use of DOT Electronic Message Boards for fire prevention purposes in high fire risk areas of the state. Both Parties recognize the need for Smokey Bear Signs located directly adjacent to DNR Forest Ranger Stations, DNR facilities, and fire departments, for the safety of DNR staff, partners, and motorists, as well as the need to inform motorists of the dangers of forest fires on roads in the areas to which they are travelling. Both Parties also recognize the need for a safe, aesthetically pleasing and minimally distracting driving experience. Both Parties further recognize DOT's need to control signs adjacent to intertates, federal aid primary highways and the Great River Road as required by 23 USC Part 750 and implemented under Wis. Stats. s. 94.30 and ch. TRANS 201, Wis. Adm. Code. Both Parties believe the following terms achieve these purposes.

B. Applicability

This MOU applies to the installation and maintenance of approved DNR Smokey Bear Fire Danger Signs and use of DOT Electronic Message Boards for fire prevention purposes in high fire risk areas of the state, including but not limited to Red Flag Days, Emergency Burning Restrictions, prolonged drought leading to increased fire danger, Federal or Gubernatorial declared states of emergency, or any other situation where there is a significant risk of fire related danger that threatens life, property and natural resources of the State.

C. Coordination on Smokey Bear Signs

This section defines the process for all interactions between DOT and DNR regarding the installation, maintenance, approval, and identification of Smokey Bear Signs. This process does not include requirements for other state, local or federal permits or approvals that may be required for a project.

1. By March 31, 2013, DNR shall provide DOT with detailed information on the locations and numbers of all Smokey Bear Signs in the state. DOT and DNR will work together to identify which signs are located within the highway right-of-way. DOT and DNR will further work to identify which Smokey Bear signs are adjacent to interstates, federal aid primary highways and the Great River Road. DNR will provide an annual update to the list from the DNR Bureau of Forest Protection central office to DOT central office.

2. Existing DNR Smokey Bear Sign locations shall remain in place at DNR's discretion, but all signs located within highway right-of-ways or new signs to be located within highway right-of-ways must be upgraded or installed in consultation with DOT to established Federal design standards and to meet DOT break-away requirements. Signs which are adjacent to interstates, federal aid primary highways and the Great River Road will further be upgraded in the event they do not meet the applicable legal requirements. DNR will work with DOT to upgrade these signs as funds are available.

3. For all new proposed signs, DNR shall provide the applicable DOT regional office 30 days written notice before erecting new Smokey Bear Signs "...which are visible from any place on the main-traveled way of any portion of an interstate highway or primary highway" (Wis. Stat. s. 84.30(2)(j)). DOT may request consultation for any sign that may be of concern and further may prohibit the initial construction of new Smokey Bear signs adjacent to interstates, federal aid primary highways and the Great River Road that do not meet the requirements of Wis. Stats. s. 84.30(3)(a) or those applicable to official signs in ch. TRANS 201, Wis. Adm. Code.

D. Coordination on DOT Electronic Message Boards for Fire Prevention Purposes in High Fire Risk Areas

This section defines the process for all interactions between DOT and DNR regarding the installation, maintenance, approval, and identification of DOT Electronic Message Boards for fire prevention purposes in high fire risk areas of the state, including but not limited to Red Flag Days, Emergency Burning Restrictions, prolonged drought leading to increased fire danger, Federal or Gubernatorial declared states of emergency, or any other situation where there is a significant risk of fire related danger that threatens life, property and natural resources of the State (Incident). This process does not include requirements for other state, local or federal permits or approvals that may be required for an Incident.

1. DNR will identify the specific Incident that the DOT Electronic Message Board(s) are proposed to be utilized for, including area affected, number and type of federal, state and local roads located within the area, critical DOT Electronic Message Board locations located outside of the area affected, estimated length of use of the DOT Electronic Message Board(s).

2. DNR and DOT will identify the appropriate DNR and DOT Incident Liaisons for coordinating the use of DOT Electronic Message Board(s) for that Incident.

3. DNR and DOT will coordinate their outreach and education regarding the Incident.

4. DOT and DNR will jointly review the information provided by DNR regarding the Incident and DOT will advise DNR as to the appropriate number, location, usage, messages, and length of time to be used of DOT Electronic Message Board(s) that would be necessary and available for the Incident based on that information. DOT will provide the DOT Electronic Message Board(s) necessary and available for the Incident based on that recommendation.

5. DOT has the discretion, at any time, to utilize or reprioritize any DOT Electronic Message Board subject to the terms of this MOU based on any use that DOT deems necessary for the purposes of furthering its mission and responsibilities to the citizen of the State of Wisconsin. Should DOT utilize or reprioritize any DOT Electronic Message Board subject to the term of this MOU, the DOT Liaison shall, as soon as is practicable and without delay, communicate that utilization or reprioritization to the DNR Liaison.

6. DNR agrees to assume any costs associated with the transportation, use or physical damage to the DOT Electronic Message Board(s) used in an Incident, except that DNR shall not indemnify, nor assume any liability beyond that prescribed by statute, and for which both DOT and DNR are protected by the State of Wisconsin.

E. Dispute Resolution

In the event a disagreement over an issue pertinent to this MOU occurs, the appropriate DOT and DNR program staff shall meet to resolve the issue. If necessary, the appropriate DOT and DNR bureau directors shall meet to resolve the issue. Next, if necessary, DOT and DNR Division Administrators will be notified of the times, dates, locations and issues to be resolved at dispute resolution meetings. In the event that the issue cannot be resolved, the division administrators of DOT and DNR will attempt to reach a mutual agreement. The Secretaries of each Department are the final arbiters of any dispute. Unresolved issues will be forwarded to the next level in a timely manner (typically within 30 days of a decision at the prior level). Within 30 days of the decision being made on the disputed issue, the lead agency will prepare a position paper on the specific decision for sign-off by both agencies.

F. Signatures

This MOU shall remain in effect until amended or rescinded by the mutual concurrence in writing of the secretaries of DNR and DOT.

Cathy Stepp, Secretary
Wisconsin Department of Natural Resources

Date 1/29/2014

Mark Gottlieb, Secretary
Wisconsin Department of Transportation

Date 2/13/14