Variable Message Sign Guidelines

Office of Traffic Safety and Mobility

December 2018
PREFACE

This document provides guidance for the use of Variable Message Signs (VMS). NYSDOT personnel should use this document when making decisions on when, where, and how to effectively deploy VMS for providing real-time motorist information. For the purpose of this document, VMS will refer to both Permanent (fixed) and Portable Variable Message Signs (PVMS) unless otherwise noted.

These guidelines contain a compilation of national research and current operational practices within NYSDOT. All VMS guidelines are consistent with the current Manual on Uniform Traffic Control Devices (MUTCD) and Federal Highway Administration (FHWA) policy for VMS use.

All standards cited in these guidelines are required by the current edition of the Manual on Uniform Traffic Control Devices. Exceptions or deviations from these guidelines shall be reviewed and approved by the Office of Traffic Safety and Mobility.

NYSDOT recognizes the benefits of properly using VMS to manage traffic and inform motorists of real time information. The Department is also aware that improper use of VMS can adversely affect travel and credibility with motorists on our highways. Due to the importance of proper and effective VMS usage, NYSDOT has developed these guidelines.

NOTE: These guidelines shall be used in accordance with the current NYSDOT VMS Policy and do not replace requirements in the MUTCD or Highway Design Manual.
# Table of Contents

**PREFACE** ............................................................................................................................................. i

**GLOSSARY** ........................................................................................................................................ iv

**ACRONYMS** ...................................................................................................................................... vi

**CHAPTER 1 – BACKGROUND** .............................................................................................................. 1

Terminology ......................................................................................................................................................... 1

Types of VMS .................................................................................................................................................. 1

- Permanent VMS ........................................................................................................................................ 1
- Portable VMS (PVMS) ............................................................................................................................... 2
- Truck-Mounted VMS ............................................................................................................................... 2

Matrix Types .................................................................................................................................................. 2

- Modular or Character Matrix ................................................................................................................. 2
- Line Matrix ............................................................................................................................................... 2
- Full Matrix ............................................................................................................................................... 2

**CHAPTER 2 – MESSAGING AND USE OVERVIEW** ................................................................................. 3

**CHAPTER 3 – USAGE** .......................................................................................................................... 5

Incident Management .................................................................................................................................... 5

Other Messages .......................................................................................................................................... 5

- AMBER & Missing Person Alerts ........................................................................................................... 5
- Emergency Homeland Security Messages ........................................................................................... 5
- Advance Notice - Roadwork and Special Events .................................................................................. 6
- Travel Time ........................................................................................................................................... 6
- Weather .................................................................................................................................................... 6
- Air Quality Action Days .......................................................................................................................... 7
- Blank Signs ........................................................................................................................................... 7
- Safety Campaigns ................................................................................................................................. 7
- Local Community Information .............................................................................................................. 7

Appropriate and Inappropriate VMS Usage .................................................................................................. 8

Regional Pilot Programs ............................................................................................................................. 9

Responsibilities for Usage .......................................................................................................................... 9

MUTCD Limitations on the Use of VMS ....................................................................................................... 10

Using Graphics and Color .......................................................................................................................... 10

Message Priorities ...................................................................................................................................... 11

**CHAPTER 4 - LOCATION** ................................................................................................................... 12

Installation and Placement .......................................................................................................................... 12

Visibility ..................................................................................................................................................... 13

Safety ......................................................................................................................................................... 14

**CHAPTER 5 – MESSAGES** ................................................................................................................... 16
Message Anatomy .......................................................................................................................................................... 16
Unit of Information .......................................................................................................................................................... 16
Phase ................................................................................................................................................................................ 17
Message ........................................................................................................................................................................... 18
Message Factors ............................................................................................................................................................. 18
Display Time ..................................................................................................................................................................... 18
Message Length ............................................................................................................................................................... 18
Message Type ................................................................................................................................................................. 19

CHAPTER 6 - EQUIPMENT ................................................................................................................ 23
Permanent and PVMS Models ........................................................................................................................................ 23
VMS Coordination with Other Field Elements ............................................................................................................. 25

CHAPTER 7 - DOCUMENTATION ............................................................................................................. 26

Appendices

APPENDIX A - Abbreviations ................................................................................................................................. 27
APPENDIX B - Permanent VMS Sample Messages ................................................................................................. 32
APPENDIX C - Portable VMS Sample Messages ..................................................................................................... 37
APPENDIX D - AMBER Alert – Operations and Implementation Guide ................................................................. 41
APPENDIX E - Missing Adult – Operations and Implementation Guide ................................................................. 48
APPENDIX F - Missing Child – Operations and Implementation Guide ........................................................................ 55
APPENDIX G - Missing College Student – Operations and Implementation Guide ................................................. 61
APPENDIX H - Travel Time Systems Requirements ............................................................................................... 67
APPENDIX I - Air Quality Action Days – VMS Policy and Guide ............................................................................... 73
APPENDIX K - Official Guidance on VMS Messaging for Official Truck Bans ......................................................... 85
APPENDIX L - Official Guidance on VMS Messaging for High Wind Warnings ..................................................... 88
APPENDIX M - Official Guidance on VMS Messaging for Holiday Travel ............................................................. 90
GLOSSARY

**AMBER Alert:** The America’s Missing Broadcast Emergency Response Alert is a Plan through which emergency alerts are issued to notify the public about abductions of children that may be in serious danger

**Bottleneck:** A location where traffic demand wanting to use a section of roadway is greater than that section’s capacity

**Character:** Letter, numeral, or symbol formed by a group of pixels, usually an array of five-wide by seven-high pixels

**Clear Zone:** The unobstructed, relatively flat area beyond the edge of the traveled way

**Cone of Visibility:** The area inside which a VMS sign is visible, which is narrow near the sign and gradually increases in width as the physical distance from the sign increases, effectively creating a “cone” shaped foot print on the pavement

**Congestion:** A condition where a breakdown of traffic flow has occurred and a queue begins to form because the amount of traffic approaching a section of highway exceeds the amount of traffic passing through it

**Credibility:** Believability (credit, belief or trust; confidence)

**Cycle:** For multi-phase messages, the complete series of phases for a given message; the time within which a set of phases is complete

**Decision Point:** An interchange or intersection where a motorist must decide on a route

**Display Time:** For two-phase or multi-phase messages, the time in seconds that each phase will be visible

**Downstream:** Beyond a certain location, in the same direction of traffic

**End of Queue:** The last cars to arrive in a queue; the upstream end of congestion

**Extended Message:** Multi-phase message

**Frame:** A set of text displayed as one phase of an extended message

**Graphic:** Array or configuration of pixels that forms an image or symbol for the purpose of conveying information

**Head of Queue:** The downstream most area of congestion, usually used during dissipation

**LED:** A type of technology used for VMS luminance; light emitting diode

**Legibility:** The ease in which a sign can be read or deciphered

**Luminance:** A measure of the brightness of a luminous surface
Message: All the characters, numerals, and symbols or a graphic image used to convey a warning or instruction, including all panels in two-phase or multi-phase operation

Missing Person Alerts: Alerts related to Missing Adult Alerts, Missing Child Alerts and Missing College Student Alerts

Module: A board that consists of a fixed number of pixels that, when arranged with other boards, makes up the line or panel of a VMS sign

Multi-phase: Any message that requires more than two panels

Panel: The physical part of a sign, which displays the message; also used to reference a part of a message that is held by one panel, as in a two-phase or multi-phase message

Phase: One panel of a two-panel or multi-panel message, and the display time for that panel. When talking about a single panel, the terms phase and panel are often used interchangeably.

Queue: A waiting line (of vehicles); the area of congested traffic upstream of a bottleneck or incident scene

Recurrent: Appears or occurring again, or typically, congestion that occurs on a regular basis

Rubbernecking: Slowing down to look at some incident or distraction

Secondary crash: Crashes that occur in the queue of an initial crash

Skew: To turn aside, or to one side; slanting; oblique

Special Event: A sporting event, concert, or other event likely to attract large numbers of attendees, potentially causing heavy traffic or congestion

Taper: A section of cones laid out to divert vehicles out of a lane, shoulder, or away from an obstruction

Target Value: How well a VMS attracts the motorists’ attention

Traveled Way: The portion of the roadway for the movement of vehicles, excluding shoulders

Two-phase: Any message that requires two panels

Unit of Information: Typically, one to four words of text and usually occupying one line on a VMS phase

Upstream: Against, or in the same direction of traffic, but ahead or in advance of a certain location

Variable Message Sign: Defined in Section 2L.01 of the MUTCD as a “traffic control device that is capable of displaying one or more alternative messages”; also called “Dynamic Message Sign” or “Changeable Message Sign”
## ACRONYMS

<table>
<thead>
<tr>
<th>ACRONYM</th>
<th>MEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMBER</td>
<td>America’s Missing Broadcast Emergency Response</td>
</tr>
<tr>
<td>AQAD</td>
<td>Air Quality Action Days</td>
</tr>
<tr>
<td>CAD</td>
<td>Computer Aided Dispatch</td>
</tr>
<tr>
<td>CCTV</td>
<td>Closed Circuit Television</td>
</tr>
<tr>
<td>CMS</td>
<td>Changeable Message Sign</td>
</tr>
<tr>
<td>DMS</td>
<td>Dynamic Message Sign</td>
</tr>
<tr>
<td>DWI</td>
<td>Driving While Intoxicated</td>
</tr>
<tr>
<td>ETA</td>
<td>Estimated Time of Arrival</td>
</tr>
<tr>
<td>ETO</td>
<td>Estimated Time of Opening</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>HAR</td>
<td>Highway Advisory Radio</td>
</tr>
<tr>
<td>HELP</td>
<td>Highway Emergency Local Patrol</td>
</tr>
<tr>
<td>HAZMAT</td>
<td>Hazardous Material</td>
</tr>
<tr>
<td>ID</td>
<td>Identification</td>
</tr>
<tr>
<td>ITS</td>
<td>Intelligent Transportation Systems</td>
</tr>
<tr>
<td>LED</td>
<td>Light Emitting Diode</td>
</tr>
<tr>
<td>MPH</td>
<td>Miles Per Hour</td>
</tr>
<tr>
<td>MUTCD</td>
<td>Manual on Uniform Traffic Control Devices</td>
</tr>
<tr>
<td>NTCIP</td>
<td>National Transportation Communication for ITS Protocol</td>
</tr>
<tr>
<td>NYSDOT</td>
<td>New York State Department of Transportation</td>
</tr>
<tr>
<td>NYSP</td>
<td>New York State Police</td>
</tr>
<tr>
<td>PVMS</td>
<td>Portable Variable Message Sign</td>
</tr>
<tr>
<td>RTE</td>
<td>Regional Traffic Engineer</td>
</tr>
<tr>
<td>TMC</td>
<td>Transportation Management Center</td>
</tr>
<tr>
<td>TMP</td>
<td>Transportation Management Plan</td>
</tr>
<tr>
<td>VMS</td>
<td>Variable Message Sign</td>
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</table>
CHAPTER 1 – BACKGROUND

Terminology

These Guidelines use the term “Variable Message Sign” or “VMS” exclusively. However, there are two other terms that are used to describe highway signs which can display different messages. These two terms are “Changeable Message Signs” or “CMS” and “Dynamic Message Signs” or “DMS”.

1. **VMS** – Refers to signs that allow for an infinite number of messages to be displayed by allowing the user to activate or download new messages via software.

2. **CMS** – Refers to signs capable of displaying one or more alternative messages. Examples would be blank-out and lane-use signs. This term was adopted in the 1993 revision of FHWA’s MUTCD and is being used in the current edition of the MUTCD.

3. **DMS** – This term was developed as part of the NTCIP (National Transportation Communication for ITS Protocol) effort to create a standard that could support both VMS and CMS with a common data set.

Other national publications may use the term CMS or DMS to describe what is referred to as VMS within these guidelines.

Types of VMS

Variable message signs can be installed as permanent units, can be portable units, or can be truck-mounted units. Each type has its own advantages and disadvantages.

**Permanent VMS**

Permanent VMS are mounted on permanent structures either spanning the roadway, cantilevered out over a portion of the roadway, or off the roadway. Signs mounted directly over the roadway would have greater visibility as they are directly in the driver’s normal line of sight. Permanent VMS can be cantilevered out over a portion of the roadway in situations where only one vertical support can be installed or when this arrangement still places the sign over the appropriate portion of the roadway. Permanent VMS may be located off the roadway to avoid visibility conflicts with other overhead structures, due to roadway geometry, or to utilize the structure for other ITS purposes, such as installation of detection devices.

A major benefit of permanent VMS is that a larger message can be displayed. Most permanent VMS can display three lines, with between 13 and 24 characters per line. Entire messages can therefore usually be shown on one panel, eliminating many challenges relating to actual message content, text, and use of abbreviations. Careful consideration must be given to both the use of and the location of permanent VMS as they can be costly and cannot be relocated based on need.

All specifications for VMS to be permanently installed must refer to NYSDOT’s Standard Specifications and current Design Standards.
Portable VMS (PVMS)
PVMS are trailer-mounted units that can be transported to locations as needed. Portables are less expensive than permanent VMS but are much smaller. The size of PVMS limits the size of the message that can be displayed on one panel to typically three lines of eight to ten characters each. This limitation has a significant impact on the message content, text, and use of abbreviations. It may also require that more than one PVMS be used to display particular messages. Various siting requirements for a VMS must be revisited each time that a PVMS is deployed. PVMS shall not to be moved while displaying a message.

Truck-Mounted VMS
Truck mounted VMS are small units mounted on a truck, such as a pick-up or flatbed. The advantage of this unit is the availability of a VMS for a mobile or unexpected work operation. However, the disadvantage is that message size is limited, as with a PVMS. Truck mounted VMS are typically used to relay to the motorist an action that should immediately be taken, such as “MOVE RIGHT/LEFT”.

Matrix Types

**Modular or Character Matrix**
The simplest matrix-type signs are those that are comprised of character blocks. A PVMS sign would have, for example, three lines with eight character blocks per line.

**Line Matrix**
A somewhat more flexible type of VMS uses a continuous matrix for each line of text. These signs offer the ability to use proportionally spaced fonts, as opposed to the monospaced text displayed by discrete character blocks. The benefits include a more natural-looking sign and, therefore, an easier-to-read message.

**Full Matrix**
The full-matrix VMS is the most flexible type. The entire sign face is comprised of elements or pixels that can be activated to display a message. These signs offer the ability to vary the height of characters, display simple graphics, and use proportionally spaced fonts.
CHAPTER 2 – MESSAGING AND USE OVERVIEW

1. VMS should be used as a **supplement** for conventional traffic control devices and not as a **substitute**.

2. VMS messaging should be composed of all uppercase letters and centered within each line.

3. VMS should be placed one to two miles in advance of a major decision point.

4. When using multiple VMS, a minimum of 1000 feet separation should be provided between signs.

5. PVMS shall be raised to a minimum height of seven feet above the roadway in urban areas and five feet above the roadway in rural areas, but at no time should it limit the line of sight of any vehicles entering the road.

6. PVMS shall not block the sidewalk or multi-use path unless specific pedestrian detours have been approved by the Regional Traffic Engineer (RTE).

7. Message content, structure, and sign location are **CRITICAL** to the effectiveness of a VMS. The following requirements shall be factored into the decision to display messages:
   - The units of information displayed should be limited to a one-phase message whenever feasible.
   - Two-phase messages should only be used when it is determined that a motorist has enough time to read the entire message at prevailing speeds.
   - Two-phase messages shall be constructed in such a manner that the entire message makes sense regardless of which phase is read first.
   - In instances where motorists are expected to be in a queue or traveling at a low rate of speed, multi-phase messages may be appropriate.
   - Multi-phase message panels shall be displayed for an appropriate duration that will allow the motorist time to read the entire message.
   - **Days-of-the-week** are preferred over **calendar dates**. (i.e., PAVING TO BEGIN NEXT MONDAY) The **day** an event is to occur is much more likely to be understood by motorists.
   - Exit numbers should be used in the location statement whenever possible.
   - Signs need to be located to provide for safety as well as visibility to motorists.

8. Bilingual messages shall not be displayed.

9. The minimum information, which needs to be contained in a message, is the traffic **Problem** and **Location** statements. The **Action** or **Effect** statement should be included, if deemed relevant.
10. Only **Standard Abbreviations** (Appendix A) as defined in these VMS message guidelines shall be used when creating a message. Additions to the list of Standard Abbreviations shall be approved by the Office of Traffic Safety and Mobility.

11. When abbreviating State Routes, use the Standard Abbreviation **RTE 123**. When abbreviating County Routes, use **COUNTY RTE 123** or **CNTY RTE 123**. If the route is widely known by a common name, use the common name.

12. VMS should be monitored for malfunctioning LED’s or panels. Sufficient VMS characters should be functioning so the message remains legible to motorists.

13. Motorists **shall not** be detoured to arbitrary routes. Prior to displaying a detour route, the VMS operator should have an understanding of the current traffic conditions and highway constraints on the detour route.

14. Regions using a VMS for purposes not described in the NYSDOT VMS Guidelines shall consult with the Office of Traffic Safety and Mobility before using the VMS for that purpose.
CHAPTER 3 – USAGE

A VMS is primarily used to give motorists real-time traffic conditions, safety, and guidance information about planned and unplanned events that significantly impact traffic on the highway system (see Table 3.1). In addition, traffic congestion, travel times, and other authorized messages may be displayed on VMS. Typical applications are shown in Tables 3.1 through 3.3. Both permanent and portable signs may be used depending on the specific type and magnitude of the events.

Incident Management

The primary use of VMS should always be for notification to the motorist about unexpected incidents that may affect motorist safety and efficiency of travel, including traffic crashes, stalled vehicles, debris in the roadway, spilled loads, emergency roadwork, or other similar conditions.

VMS messages shall only be displayed for confirmed incidents - those visually verified by CCTV, NYSP or other official police agency, HELP, or another reliable source. If an incident cannot be seen by camera, regular updates must be available from a reliable source. A message related to a specific incident shall be removed as soon as the incident is no longer adversely affecting traffic flow.

Acceptable incidents for messaging include:
- Lane-blocking incidents (including crashes, disabled vehicles, and debris)
- Detours
- Closures
- Critical road construction or maintenance operations
- Emergency traffic restrictions (including emergency weight, height, or width restrictions)

Generic descriptors (e.g., “CONGESTION AHEAD” or “CRASH AHEAD”) should not be used. Messages which do not convey specific information about actual road and traffic conditions facing motorists or which convey vague instructions shall also not be displayed. Other examples of such messages are “USE CAUTION” or “EXPECT DELAYS / USE ALT” when no delays are present.

Generic messages to advise motorists of normal daily peak period traffic congestion should also not be used (e.g., “DELAYS AHEAD”). Specific information regarding the level of congestion is acceptable. (e.g. “SLOW TRAFFIC, NEXT 2 MILES” or “DELAYS / EXIT 23 TO 26”)

NOTE: Active roadwork that closes a lane or a road or that may include a detour are considered part of incident management.

Other Messages

AMBER & Missing Person Alerts

AMBER Alerts shall be displayed in accordance with the current AMBER Alert policy. Missing Adult Alerts, Missing College Student Alerts and Missing Child Alerts shall be displayed in accordance with their current respective policies. Appendices D through G provide additional information on the processes for AMBER and other missing persons alerts.

Emergency Homeland Security Messages

There are a number of public safety situations that may warrant the need for information to be
Chapter 3 - USAGE

NYSDOT VMS GUIDELINES

6

December 2018

distributed to the public as quickly as possible. These include but are not limited to: terrorism, widespread public safety threats, etc. Approval of displaying these messages will be done on a case-by-case basis by the RTE and the Office of Traffic Safety and Mobility.

Advance Notice - Roadwork and Special Events

A VMS may be used to display messages to provide advance notice of upcoming roadwork or special events that will adversely affect travel.

1. The advance notification message should not be displayed more than seven days prior to the special event or upcoming roadwork (see table 3.2).

2. Days of the week, such as MON-WED, should be used when displaying messages, if space permits calendar dates (5/11-5/15) may also be included.

Utilizing VMS for planned special events shall be allowed where the VMS message is an essential component of a comprehensive Traffic Management Plan for the event.

1. VMS shall not be used to advertise or promote special events, but rather to provide traffic related information that will allow motorists to make informed decisions and potentially adjust their route.

2. The RTE may authorize the use of VMS for planned special events when, in his/her judgment, the use of the VMS will significantly improve traffic flow in and around the event.

3. Requests received by NYSDOT to display messages for planned special events that are not consistent with these guidelines shall be denied.

4. Public service messages or general advertising for planned special events shall not be displayed, see Table 3.4.

NOTE: In those instances where the VMS message will be awkward without specifically naming the event, exceptions to these guidelines can be made with the approval of the RTE.

Travel Time

The use of a VMS to display the travel time from the VMS to a given point downstream is a valuable traffic management tool in corridors that experience traffic congestion or traffic variability on a regular basis. Travel Time messaging allows regular users of that section of roadway to be able to judge the level of delay and adjust their route accordingly. Travel time information may be displayed if times can be measured or calculated directly using data from highway sensor equipment, cell phones, toll tags, or other technology. To ensure accuracy, travel time information shall be displayed automatically as manual entry may be impractical and error-prone.

Weather

A VMS may be used to display near real-time, unexpected, localized adverse weather conditions, such as dense fog, drifting snow, flooding, black ice, etc. Real-time weather Messages should be restricted to conditions of which the driver may not be aware (e.g., “HEAVY SNOW 5MI AHEAD”) and should not be used to inform the driver of obvious conditions (e.g., “HEAVY SNOW”, when the snow also exists at the VMS location). These messages shall only be displayed when the weather events are occurring and verified (camera image, field report, National Weather Service, etc.).

When displaying pre-storm messages, it is not necessary to post the message on every sign. Some
signs, such as travel time messages should continue to be utilized where necessary for current travel conditions. Pre-storm messages shall not be displayed more than one rush hour period in advance of the severe weather event. Pre-storm messages shall only be displayed when a National Weather Service Warning is in effect for the area. Appendix J gives additional information relating to messaging for adverse weather conditions. Appendix K gives guidance on messaging for truck bans related to winter weather. Appendix L gives guidance on messaging for truck restrictions due to high winds.

**Air Quality Action Days**

A VMS may be used to display information regarding Air Quality Action Days (AQAD) based on guidance from the Office of Traffic Safety and Mobility. Appendix I provides guidance on how and when to implement AQAD messaging.

**Blank Signs**

A blank sign shall be viewed as a valid message, “telling” drivers that there is no unusual travel information to relay. Conditioning drivers to this use of signs provides the greatest potential for driver compliance. Unless a VMS is displaying a message in accordance with this guidance, the sign should remain blank.

**Safety Campaigns**

A VMS may be used to display safety related messages associated with approved statewide campaigns. This use includes special targeted enforcement campaigns that are coordinated with the NYS Police and the media. Localized, or non-traditional, safety campaigns are generally prohibited. However, circumstances arise on occasion in which the Department should participate in a specific, unique, localized safety campaign using non-standard VMS messages. Under these circumstances, the RTE shall request permission from the Office of Traffic Safety and Mobility to participate in the localized safety campaign. Additional information regarding the use of VMS to display safety related messages on the State highway system during specific campaigns shall be disseminated by the Office of Traffic Safety and Mobility to the RTEs and staff.

**Local Community Information**

The RTE may authorize the limited use of PVMS at the request of other public agencies to display general transportation or public safety information to the public, such as special community meetings, roadway construction project information meetings, DWI awareness event, etc. Under these types of uses the PVMS should be placed off the State right-of-way and turned parallel to the travel way.
### Appropriate and Inappropriate VMS Usage

In areas where both permanent and portable signs are used, or TMC or agency jurisdictions overlap, it is important that no conflicting messages are displayed. A VMS should be used as a **supplement** for conventional traffic control devices and not as a **substitute**.

An important consideration in successfully operating a VMS system is to maintain credibility with the motorist. Drivers expect the VMS to provide useful and accurate information.

- The VMS message **shall not** provide information that is already obvious to the motorist (e.g. HEAVY RAIN, SNOW, etc.).
- A VMS should always provide specific information to the motorist about traffic conditions, such as “LONG DELAYS – EXITS 25 to 35”.
- Regional procedures shall be established to ensure displayed messages are accurate, visible, and removed when they are no longer applicable.
- VMS may be used for police activity that directly impacts the motorist or travel way.

Examples of appropriate and inappropriate VMS usage are contained in Tables 3.3 and 3.4.
TABLE 3.3
APPROPRIATE VMS USAGE
(i.e., UNPLANNED EVENTS)

<table>
<thead>
<tr>
<th>EVENT</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crash</td>
<td>Jackknife, Fatal, Overtur, Spilled Load</td>
</tr>
<tr>
<td>Hazmat Spill/Release</td>
<td>Chemical Spill, Oil Spill, Toxic Cloud, Refinery Fire</td>
</tr>
<tr>
<td>Natural Disaster</td>
<td>Flood, Land Slide, Fire, Earthquake, Tornado</td>
</tr>
<tr>
<td>Police Activity</td>
<td>Crash, Checkpoint, Detour, Road Closure</td>
</tr>
<tr>
<td>Unanticipated Conditions Ahead</td>
<td>Fog, Dust, Wind, Snow Squall, Blowing Snow, Ice, Down Tree</td>
</tr>
</tbody>
</table>

TABLE 3.4
INAPPROPRIATE VMS USAGE
(i.e., PUBLIC SERVICE MESSAGES/GENERAL ADVERTISING)

<table>
<thead>
<tr>
<th>EVENT</th>
<th>EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Logo Advertising</td>
<td>“NIKE RACE”, “GOOD GUYS CAR SHOW”</td>
</tr>
<tr>
<td>Normal Recurrent Congestion</td>
<td>“HEAVY CONGESTION”, “CONGESTION AHEAD”</td>
</tr>
<tr>
<td>Current Weather Conditions</td>
<td>“HEAVY SNOW”, “WET ROADS”</td>
</tr>
<tr>
<td>Local Community Information</td>
<td>“BUDGET MEETING TONIGHT”, “SCHOOL BOARD VOTE TODAY”</td>
</tr>
</tbody>
</table>

Regional Pilot Programs

Regions that are planning to use a VMS for pilot programs or other purposes not described in these guidelines, shall consult the Office of Traffic Safety and Mobility prior to using the VMS.

Responsibilities for Usage

VMS shall be monitored to ensure the sign messages are displayed at the correct times; there are no legibility or safety problems; and the sign is effective for traffic management.

1. The RTE is responsible for developing procedures for adherence to the NYSDOT VMS policy and these guidelines.

2. RTE or designees are responsible for providing guidance to all NYSDOT personnel on when, where and how to use a VMS, including those involved in maintenance and construction activities.

3. TMC personnel compose and display messages for the permanent VMS based on information gathered from a variety of sources such as field personnel, NYSP Computer Aided Dispatch (CAD), and ITS field elements such as Closed Circuit Television (CCTV) cameras and detectors.

4. TMC and field personnel compose messages and deploy the PVMS. Field personnel are responsible for coordinating with the TMC and/or Regional Office of Traffic Safety and Mobility to request permanent VMS support and to coordinate messages. Field personnel can gather
information on Estimated Time of Opening (ETO), travel times, delays and the status of the detour route.

5. **Regional Construction Group** shall be responsible for ensuring contractor compliance to the contract’s Traffic Management Plan (TMP) on when, where and how to use their PVMS, in accordance with the VMS Policy and with guidance from the Regional Office of Traffic Safety and Mobility.

6. **Law Enforcement and other outside agencies**, shall refer to the NYSDOT VMS Policy and Guidelines when requesting VMS usage.

**MUTCD Limitations on the Use of VMS**

The MUTCD standards, guidance, and options shall be adhered to, including the following:

1. When a VMS is used to display a message, the display format shall not be of a type that could be considered similar to advertising displays.

2. The display format shall not include emojis, animation, rapid flashing, or other dynamic elements that are characteristics of advertising displays.

3. Techniques of message display, such as fading, exploding, dissolving, or moving messages shall not be used.

4. VMS that display a regulatory or warning message may use a black background with a white, yellow, orange, red, pink, or fluorescent yellow-green legend as required in the MUTCD.

5. VMS messages should not display symbols or route shields unless they can do so in the appropriate color combinations.

**NOTE: Exceptions must be requested through the Office of Traffic Safety and Mobility.**

**Using Graphics and Color**

MUTCD graphics can be used on full-matrix VMS with pixel resolution that allows clear display of the graphics. The graphics can be displayed either in stand-alone fashion or as a supplement to text. When supplementing text, the graphic should be placed to the left of the text. Graphics should not be used if text size is compromised in order to do so. Graphics may be used in place of text-only messages if the same meaning is conveyed to the motorist.

If a black background is used, the color used for the legend on a changeable message sign should match the background color that would be used on a standard sign for that type of legend, such as white for regulatory, yellow for warning, orange for temporary traffic control, red for stop or yield, fluorescent pink for incident management, and fluorescent yellow-green for bicycle, pedestrian, and school warning.

If a green or blue background is used for a guide message or motorist services message respectively, the background color shall be provided by green or blue lighted pixels such that the entire VMS would be lighted, not just the text.
Message Priorities

As discussed, VMS are used for numerous types of messages. Separate topics placed on a single VMS at the same time are discouraged, for example, do not place AMBER Alert messages with travel times.

Judgment should be used if separate message topics are needed on a single VMS within the Region during the same time period. The priority listing of message topics below shall be used when two or more of the applicable circumstances apply. They are in order of importance where one (1) is the most important and eight (8) is the least.

1. Incident Management (including crashes, detours, lane closures, and active critical road construction or maintenance operations information)
2. AMBER & Missing Person Alerts
3. Emergency Homeland Security messages
4. Advance notice for roadwork or special events that may adversely affect travel (including future construction or maintenance operations information and road conditions during severe weather)
5. Travel Time
6. Weather (Air Quality Action Days, pre-storm messages)
7. Blank signs
8. Safety Campaigns / Local Community Information

NOTE: Safety messages should never be used on a day to day basis. In general, unless there is important information relating to the road or traffic conditions ahead, the signs should remain blank.
CHAPTER 4 - LOCATION

Installation and Placement

NYSDOT Operations Division, Maintenance, and Design shall work closely to determine the proper location of each permanent and PVMS before it is designed and installed.

The most appropriate locations for installing or placing a VMS is in advance of major decision points, such as interchanges or intersections, where motorists can respond to specific information displayed on the VMS. A VMS shall also be located to provide ease of access for maintenance personnel.

1. VMS should be located so motorists have sufficient time to complete the following steps:
   - Detect the sign;
   - Read and comprehend the message;
   - Initiate a response;
   - Make appropriate decisions based on the information gained from the message.

A VMS located too close to a decision point will not provide motorists adequate time to react to the message and will reduce the opportunity to respond. A VMS located too far in advance of a decision point may reduce the overall impact or recall of the message. In general, the recommended placement of a VMS is one to two miles in advance of a major decision point.

2. Permanent VMS and semi-permanent PVMS Locations
   
   Below are the recommended locations for installation or placement of the permanent and semi-permanent PVMS:
   - Upstream of major decision points for alternate routes.
   - Upstream of locations where information regarding travel times and delays are appropriate (i.e., construction zones and airports, major tourist centers, urban centers).
   - In advance of known bottlenecks.
   - Upstream of locations that may experience unusual, severe weather conditions (i.e., isolated fog, dust, high winds, ice, or drifting snow).
   - Upstream of major special event facilities (i.e., stadiums and convention centers).
   - Before major arterials that intersect highways.

3. PVMS Locations
   
   In addition to the above locational requirements, PVMS should be placed, where practical:
   - Strategically upstream of bottlenecks;
   - Along the same side of the highway if multiple PVMS are needed to progressively provide additional information along a route or to ensure redundancy;
     - The distance between units shall be based on speed, terrain, and visibility;
• On the right side of the highway (generally preferred over the left side);
• With minimum of 1,000 feet of separation;
• Before or at the crest of vertical roadway curves to maintain maximum visibility;
• Upstream of an event to give adequate time for motorists to react.

The following shall be avoided, whenever practical:
• Placement within or immediately after horizontal curves.
• Placement after the crest of a vertical curve.
• Within merging zones of interchanges.

Visibility

Visibility is the distance at which a motorist can first detect a sign on the roadway. The components of visibility for a VMS sign are as follows:

• The ease in which a sign can be detected and how well it attracts the driver’s attention (Target Value);
• The ease in which the message can be seen (Brightness);
• The ease in which the message can be read (Legibility); and
• The ease in which it can be read from the side (Cone of Visibility).

1. Target Value is dependent on the VMS unit being more visible than the rest of the highway features. The early recognition that a sign is present plays a key role in the motorist’s ability to react to the message. The proper placement of a VMS shall insure that structures, curves, roadside signs, and landscaping do not obscure visibility of the unit. Relocation of some highway and/or construction signs may be necessary in order to install a VMS.

• Vertical and horizontal curves on highways may have an effect on the visibility of a VMS. A VMS should be installed or placed before or at the crest of a vertical curve and never within or immediately after a horizontal curve.
• Care shall be taken to prevent objects being located too close to the VMS since they are more likely to impact the visibility of the sign. A motorist in the lane closest to the VMS may not be able to see around the object and fully read the message.
• Trucks in the traffic stream can be a major cause of sight obstructions to the VMS. Motorists in vehicles traveling closely behind or adjacent to a truck may have limited time to read a VMS. In cases where truck volumes are high, using multiple PVMS on the same side of the highway will provide an additional opportunity for motorists to comprehend the message.
• For maximum visibility, a PVMS shall be raised so the bottom of the sign is at a minimum height of seven feet above the roadway in urban areas and five feet in rural areas.

2. Brightness or luminance of a sign is the amount of light that is coming from the VMS.

• Weather conditions such as fog, dust, snow, or rain and other conditions, such as heat or cold can affect the visibility of messages.
• Rain, fog, and snow can scatter and block light rays from a VMS as that light travels through the atmosphere and reduce the contrast between the sign and its background. If the contrast becomes too low, motorists cannot read the message. Most signs are equipped with an automatic dimmer mechanism that will account for these conditions.

3. **Legibility** is the maximum distance at which a motorist can first correctly identify letters and words on a VMS. A short message with a large font has greater legibility than a longer message with a smaller font.

• Current MUTCD Guidelines recommend the following minimum distances for visibility and legibility based on a character height of 18 inches:
  o Visibility = 2,600 feet
  o Legibility = 800 feet for normal daylight conditions and 600 feet for nighttime conditions

• A VMS shall be monitored for malfunctioning LED’s, or panels. Sufficient VMS characters shall be functioning so the message remains legible to motorists.

• The legibility distance of a VMS may be significantly reduced if the sun is shining directly on the sign or into the eyes of the motorist.

• The spacing between characters in a word should be between 25 to 40 percent of the letter height. The spacing between words in a message should be between 75 and 100 percent of the letter height. The spacing between the message lines should be between 50 and 75 percent of the letter height,

4. **Cone of Visibility** identifies how many degrees from the sign’s center axis the message remains legible.

• Care shall be taken not to place the VMS so far off the roadway that the sign is not in the motorist’s cone of vision long enough to read the message.

• The exposure time to read a message increases as the cone of visibility increases.

• The PVMS shall also be placed approximately at a three-degree angle toward the traveled way from the perpendicular to the edge of the roadway to reduce glare.

• Whenever possible, a PVMS shall be placed in a location to provide sunlight to the solar panel(s) in order to keep the unit functioning.

**Safety**

Along with considering the traffic management and visibility aspects of a VMS, safety of staff and the motorist shall also be considered when proposing VMS locations.

1. **Permanent VMS** installed to the right of the traveled way is preferred because it allows maintenance personnel to use shoulder closures during inspection or repair.

• Providing a parking area or pullout for maintenance shall be considered in the design.

• If the sign is installed behind a sound wall, an access door shall be provided at a safe location.

• The controller cabinet should be located at least 40 to 60 feet upstream from the sign to allow good visibility during testing. Security from vandalism should also be considered.

• Whenever feasible, a VMS should be installed within the line of sight of an upstream CCTV.
2. PVMS should be placed as far from the travel way as reasonable, while still making the message visible to motorists. At least three NYSDOT approved, reflective channelizing devices should be placed in a minimum 30-foot taper before the PVMS if it is positioned within the clear zone. PVMS should never be placed in an established U-turn so as to maintain the use of the U-turn area for emergencies. This includes the approaches to the U-turn.

**Suggested Horizontal Offset Placement of PVMS:**

- For highways and expressways – 30 feet from traveled way.
- For conventional highways (no curb) – 20 feet from traveled way.
- For conventional highways (with curb) – 1.5 feet from face of curb.

3. **Miscellaneous PVMS Guidance**

- Whenever a PVMS is not being used for an extended period of time, it should be removed, placed, or stored outside of the clear zone or behind a protective barrier.
- Reflective tape shall be placed on the back, sides, and front of the PVMS to increase visibility. Reflective tape shall be inspected on a regular basis and maintained in good condition.
- Contact numbers and ID numbers shall always be placed on PVMS for use in case of an emergency.
- Contractor PVMS should also have ID numbers as well as contact numbers.
- Measures shall be taken to deter the theft of the PVMS, such as making the unit difficult to move by removing wheels and trailer hitch.
- VMS’s shall be protected from unauthorized use. All cabinet doors shall be secured and/or padlocked, and default manufacturer’s passwords shall be changed. Additional security measures shall be implemented, as needed.
- The RTE and/or the Regional TMC should be provided information from all groups detailing where PVMS are deployed and contact information for the same.

The following placement hierarchy shall be considered when deploying a PVMS:

- Behind an existing barrier, such as a guide rail, provided the message is not obstructed. (deflection distance of the barrier should be considered in these circumstances)
- Beyond the clear zone
- Within the clear zone, on an adjacent property (i.e. commercial parking lot)
- Within the clear zone, off the shoulder.
- On the Shoulder – Within an established construction/work zone.
- On the Shoulder – Outside of an established construction/work zone.

**NOTE:** Due to the unique circumstances associated with the individual placement of each PVMS, Regional staff shall consider the above noted hierarchy in addition to the criteria for message legibility when determining the best location for each PVMS.
CHAPTER 5 – MESSAGES

Variable Message Sign (VMS) messages inform motorists of real-time roadway and traffic conditions and in some cases, a suggested course of action. Messages should encourage motorists to make appropriate driving decisions, avoid confusion on the roadway, improve traffic flow, and enhance safety.

Motorists have difficulty perceiving, processing, and remembering a large amount of traffic information at one time. Studies have shown that motorists have a greater comprehension of messages that are made-up of words and phrases that they recognize, rather than ones that they have to read. Over time, motorists have come to associate certain phrases with specific meanings. Deviating from these standards can cause confusion and, frequently, congestion as motorists slow down to read the sign and comprehend the message. As such, it is important that common and consistent words and phrases be used on VMS not only within a Region, but also throughout the state.

Message Anatomy

VMS messages are divided into information components that when read separately or collectively convey a complete thought or message to motorists, see Table 5.1.

Unit of Information

- A unit of information is typically one to four words of text and usually occupies one line on a VMS phase. Each unit answers a question that a motorist might ask about an event. Units of information should be arranged in a logical order that effectively conveys the message to motorists. Generally, this order is the Problem, Location or distance ahead and Effect statement or recommended driver Action.
  - Problem: What is the problem? (Crash, incident, debris, etc.)
  - Location: Where is the problem? (I-495, I-87, EXIT 2, 5 MILES AHEAD, etc.)
  - Effect: What is the effect? (DELAYS, LANE CLOSED, 5 MILE BACKUP, etc.)
  - Action: What should drivers do? (Use I-90, Use Alternate Route, Be Prepared to Stop, etc.)
- The Problem, Location, Effect, and driver Action are each one (1) unit of information.
- Only one (1) unit of information should appear on each line.
- Each unit of information should be no more than four words.
- No more than 3 units of information should be displayed on a single phase.
- No more than 4 units of information should be in a message when the traffic operating speeds are more than 35 MPH.
- A VMS message does not have to contain all 4 units, but priority should be given to the most important unit of information.
- It is important to remember that it takes a motorist at least one second to read each unit of information. A motorist traveling at highway speeds of 65 MPH on average has four to seven seconds to read a VMS message under ideal conditions.
• In instances where motorists are expected to be in a queue or traveling at a low rate of speed, multi-phase messages may be appropriate.

• Location statement information should be useful whether motorists are familiar or unfamiliar with the area. If exit numbers are posted, the operator should use them in the location statement.

NOTE: Location Statement - If the incident is on the same highway as the VMS, there is no need to display the highway route number or name because motorists will assume the event is on the same highway. The exception is to display the roadway name when all lanes are closed.

Phase

• A phase is one frame, or panel, of a message, which includes the units of information and the display time. The terms “phase” and “panel” are often used interchangeably. Each phase of a message should be independently understood by motorists, whether it is read before or after an adjoining phase.

• Single-phase messages should be used, whenever possible.

• Two-phase messages should be used only when it is determined that motorists have enough time to read the entire message at prevailing speeds.

• If more than one phase is needed, the Problem and Location units of information should appear together on one phase. An example of a two-phase message showing units of information is shown in Table 5.1. A message of this length (five units of information) should only be used in prevailing speeds less than 55 MPH to assure adequate time for motorists to read and comprehend the message.

### TABLE 5.1: INFORMATION COMPONENTS

<table>
<thead>
<tr>
<th>PHASE 1</th>
<th>INFORMATION</th>
<th>MOTORIST QUESTION</th>
<th>VMS ANSWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITS OF INFO.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Problem</td>
<td>What happened?</td>
<td>CRASH</td>
</tr>
<tr>
<td>1</td>
<td>Location</td>
<td>Where?</td>
<td>BEYOND EXIT 12</td>
</tr>
<tr>
<td>1</td>
<td>Effect</td>
<td>What is the effect on traffic?</td>
<td>LEFT LANE CLOSED</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHASE 2</th>
<th>INFORMATION</th>
<th>MOTORIST QUESTION</th>
<th>VMS ANSWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITS OF INFO.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Audience</td>
<td>Who is message for?</td>
<td>AIR SHOW TRAFFIC</td>
</tr>
<tr>
<td>1</td>
<td>Action</td>
<td>What is advised?</td>
<td>USE WANTAGH PKWY</td>
</tr>
</tbody>
</table>
Chapter 5 - MESSAGES

Message

- A message consists of all the text or characters being displayed on a VMS. The minimum information that needs to be contained in a message is the traffic Problem and Location. The Action or Effect statement should be included, if relevant. Messages should be brief and concise. When necessary, standard abbreviations should be used, as they are easily understood.

Message Factors

The following are factors that enhance motorists' understanding of VMS messages:

Display Time

- A display time should be selected for multi-phase messages that will allow the motorist time to read the message at the prevailing speed.
  - The maximum cycle time for a two-phase message should be 8 seconds.
  - The display time for a single panel shall never be less than 2 seconds.

- The minimum display time for a VMS is two seconds per phase. However, two phases with a two-second display time for each is not adequate for traffic moving at 60 MPH. Therefore, a single-phase three-line message is preferred. Keep in mind; in order for motorists to read a two-phase message with two-second display times, they would need to be in a queue for 8 seconds to read the full message twice.

- A PVMS displays less text and fewer units of information per phase. Therefore, a shorter display time may be used. When a motorist can read the message twice at prevailing speeds, the operator knows the VMS has a proper display time. This situation should be the intended outcome for all messages, however, it may be difficult to achieve under less than ideal conditions.

- Two examples of permanent VMS and PVMS messages for a highway closure are shown in Figures 5.1 and 5.2. Figures 5.1A and 5.2A show two-phase messages that are used when the prevailing speeds are less than 55 MPH (four units of information). The second example, Figures 5.1B and 5.2B show a single-phase sign used when the prevailing speeds are equal to or greater than 55 MPH (three units of information).

Message Length

- Messages should provide motorists with enough information to make a timely driving decision. Operators should resist the urge to lengthen a message simply because there is space available on the sign. Empty spaces in a VMS message may be used for visual clarity.

- Abbreviations - May be used when creating or editing a VMS message. It is important to use standard abbreviations. See Appendix C for a list of standard abbreviations. Certain words or abbreviations are evident to the driver. For instance, the use of “Street”, “Avenue”, or “Boulevard” following a familiar arterial name is not required and could be omitted. When used in conjunction with a prompt word, the motorist understands most commonly used words and abbreviations.

- Standardized Messages - VMS operators statewide should follow the same message format, content, and abbreviations as described in these guidelines. Message familiarity reduces
motorist reading time, thereby enhancing delivery. In general, motorists need more time to read unfamiliar messages. Lengthy or confusing messages often result in congestion and increase the risk of a crash.

**The information below should be understood before composing a VMS message:**

- When referring to an off ramp, the word **EXIT** is preferred.
- The verb **USE** should be selected to indicate a route that will take the motorist to a destination.
- The term **BLOCKED** may be used when an unexpected event is blocking lanes and no formal closure is in place.
- The term **CLOSED** is recommended after traffic control is in place.
- When using the word **AHEAD** to describe a location, the VMS should not be over one mile upstream of the incident. Also, the VMS should be on the same route as the incident. Where a specific location or distance is known, it should be supplemented to the message, or replace the word **AHEAD**.
- The verb **FOLLOW** carries the inferred meaning that motorists will be guided by other signs along the route. **FOLLOW** should not be used unless detour signs are in place.
- In areas where both permanent and PVMS signs are used, it is important that no conflicting messages are displayed simultaneously.

**FIGURE 5.1**

<table>
<thead>
<tr>
<th>PERMANENT MESSAGES</th>
<th>PORTABLE MESSAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>&lt; 55 MPH</strong></td>
<td></td>
</tr>
<tr>
<td>495 WB CLOSED AT EXIT 51</td>
<td>495 WB CLOSED AT EXIT 51</td>
</tr>
<tr>
<td>CARS USE NORTHERN PARKWAY</td>
<td>CARS USE N. PKWY</td>
</tr>
<tr>
<td><strong>&gt; 55 MPH</strong></td>
<td></td>
</tr>
<tr>
<td>495 CLOSED AT EXIT 51 USE N. PARKWAY</td>
<td>495 CLSD AT EX 51 USE ALT</td>
</tr>
</tbody>
</table>

**Message Type**

1. **Early Warning Messages** give motorists advance notice of unexpected, slow, or stopped traffic and queuing due to a planned or unplanned event.
• Early warning messages are effective in reducing secondary crashes. Examples of early warning messages are shown in Figures 5.3 to 5.5.

**Figure 5.3**
PERMANENT MESSAGE

A. Problem: Location:

![Message A](image)

B. Problem: Location: Action:

![Message B](image)

C. Problem: Location: Action:

![Message C](image)

**Figure 5.4**
PERMANENT MESSAGE

Problem: Location: Action:

![Message D](image)

**Figure 5.5**
PORTABLE MESSAGE

BE PREPARED TO STOP

2. **Advisory Messages** provide motorists with real-time information about a specific problem along their route. The message should use days of the week and not dates (i.e. Mon to Wed. not 12/15 to 12/17).

• Examples of Advisory Messages for a ramp closure are shown below in Figures 5.6 and 5.7:

**Figure 5.6**
PERMANENT MESSAGE

EXIT 60 TO BE CLOSED MON-FRI 10PM -2AM
Additional Usage of Advisory Messages - Occasionally, Traffic Congestion (travel time) or AMBER Alert information is displayed on permanent VMS. The traffic congestion messages may give expected travel times or expected delays from one location to another. Travel time displays shall be in accordance with the Travel Time Systems Interim Policy. Example of a Travel Time Message is shown in Figure 5.8 below. AMBER Alert messages are typically a one-phase, three-line message that provides information to motorists on the abduction of a child. AMBER Alert messages shall be displayed in accordance with the NYSDOT AMBER Alert Policy (Appendix F). Examples of AMBER Alert messages are shown in Figures 5.9 and 5.10.

For further reference, please refer to NYSDOT AMBER Alert Policy (Appendix D).
3. **Alternative Route/Detour Messages** are used when an incident blocks or closes an exit or highway interchange. This event requires motorists to use or take another route than originally intended.

- Motorists should not be detoured to arbitrary routes. The suggested detour route should be a route that contains adequate road signs so motorists can travel without getting lost. Before a recommended detour route is displayed on a VMS, the operator should know the current traffic conditions and current route constraints. The operator should also consult with the NYSDOT RTE’s office. Alternate route messages are divided into two categories: Soft Detours and Hard Detours. A Soft Detour is an optional detour, i.e. USE ALTERNATE ROUTES. A Hard Detour is a required detour, i.e. USE RT 25 / USE THRUWAY. If no detour is needed, or available, an advisory message, BE PREPARED TO STOP / REDUCE SPEED should be used.

A simple message is needed, which will allow motorists a quick return to their original route. An example of Alternate Route messages are shown below in Figures 5.11 and 5.12:

**FIGURE 5.11**
PERMANENT MESSAGE

![Permanent Message](image)

**FIGURE 5.12**
PORTABLE MESSAGE

![Portable Message](image)
CHAPTER 6 - EQUIPMENT

When installed or placed, the VMS becomes a part of the total motorist information system, acting in partnership with existing roadway signs. Roadway signs display an unchanging message to motorists; therefore, the need for a VMS is prevalent for situations requiring time sensitive information. For this reason, both permanent and PVMS are utilized. Permanent signs are placed in the median, shoulder or on existing over-crossings. Portable truck or trailer-mounted signs can be temporarily placed in desired locations.

Permanent and PVMS Models

A number of design options for both permanent and portable devices exist.

1. Permanent Overhead
   - Fixed Location
   - 3 lines of text
   - Up to 24 characters per line
   - 18” characters
   - Full Matrix or Line Matrix Display
   - Installed on parkways and expressways

2. Permanent Cantilever
   - Fixed Location
   - 2-3 lines of text
   - Up to 24 characters per line
   - 18” characters
   - Full Matrix or Line Matrix Display
   - Installed on parkways, expressways, and conventional highways

3. Permanent Column Mounted
   - Fixed Location
   - 2-3 lines of text
   - Up to 24 characters per line
   - 18” characters
   - Full Matrix or Line Matrix Display
   - Installed on parkways, expressways, and conventional highways
4. **Permanent Post-Mount Sign**
   - Fixed Location
   - 2-3 lines of text
   - 8-12 characters per line
   - 18" characters
   - Full Matrix or Line Matrix Display
   - Installed on parkways, expressways, and conventional highways

5. **Permanent Slip Ramp Sign**
   - Fixed Location
   - 1-2 lines of text
   - 8-12 characters per line
   - 18" characters
   - Full Matrix or Line Matrix Display
   - Installed on entrance ramps and two lane arterial road

6. **Portable VMS**
   *Characteristics vary*
   - Sizes (80"w x 56"h & 115"w x 80"h)
   - Movable Location
   - 3 lines (based on 12" characters)
   - 8 characters per line
   - Can be left at location for duration of event
   - Should be remote controlled

7. **Truck-Mounted VMS**
   *Characteristics vary*
   - Size (80"w x 56"h)
   - Movable Location
   - 2-3 lines
   - 8 characters per line
   - Can be constantly repositioned
VMS Coordination with Other Field Elements

A VMS can convey only a limited amount of information; therefore, when there is a need to provide extensive information to motorists, a VMS can be used in conjunction with other traveler information devices.

1. **Highway Advisory Radio (HAR)**
   - HAR units are used when there is a need to provide extensive roadway information to motorists, such as AMBER Alert or adverse weather conditions.

2. **Extinguishable Message Sign (EMS)**
   - EMS illuminate a static message, such as TUNE RADIO TO 1610 AM, to provide motorists with pertinent roadside information or warnings. Commonly used EMS applications include safety protocols by airports, availability or directional data for carpool lanes and toll roads, radio frequencies for advisory radio stations, and general traffic alerts.

3. **Blank-Out Signs (BOS)**
   - Blank Out Signs display only a limited number of messages, but are much cheaper than VMS, consume much less energy and are very easy to operate. Blank-out signs that display only single-phase, predetermined electronic-display legends that are limited by their composition and arrangement of pixels or other illuminated forms in a fixed arrangement should comply with the provisions of the applicable Section in the MUTCD for the specific type of sign. Because such a sign is effectively an illuminated version of a static sign, the size of its legend elements, the overall size of the sign, and placement of the sign should comply with the applicable provisions for the static version of the sign.

4. **Flashing Arrow Sign (FAS)**
   - A FAS is also known as an arrow board; it is sometimes used to supplement a VMS. The electronic FAS typically directs traffic away from a downstream lane closure. At times, a PVMS may be used to simulate an arrow panel display. These signs may be installed on HELP vehicles, highway maintenance vehicles, or emergency responder vehicles. Further guidance on the use of VMS as a FAS is available from the appropriate program area.
CHAPTER 7 - DOCUMENTATION

Chapter 7 provides guidance on the information necessary for consistent documentation of VMS usage. This documentation is used to evaluate the NYSDOT VMS system, its benefits to the motoring public, and to determine the workload for budget purposes. A record should be created when a VMS is deployed.

Those responsible for the deployment of VMS within New York State right-of-way, such as the Engineer-In-Charge, Residency employees, TMC staff, or others should record the following:

1. Location
2. Device ID
3. Messages displayed
4. Date of usage
5. Time on and off
6. Name of operator/owner
7. Contact Information
APPENDIX A

Abbreviations
This list was compiled from Table A-1 of the MUTCD. Not all abbreviations are listed. The use of PVMS will often require that words be abbreviated to allow the needed information to be displayed. Three lists are provided to assist in this area: a list of standard abbreviations, a list of abbreviations best understood if used with a prompt word, and a list of abbreviations that can be easily confused and therefore should not be used.

## Standard Abbreviations

<table>
<thead>
<tr>
<th>WORD</th>
<th>ABBREVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afternoon/Evening</td>
<td>PM</td>
</tr>
<tr>
<td>Alternate</td>
<td>ALT</td>
</tr>
<tr>
<td>Avenue</td>
<td>AVE</td>
</tr>
<tr>
<td>Boulevard</td>
<td>BLVD</td>
</tr>
<tr>
<td>Bound</td>
<td>BND</td>
</tr>
<tr>
<td>Bridge</td>
<td>BRDG</td>
</tr>
<tr>
<td>Cannot</td>
<td>CANT</td>
</tr>
<tr>
<td>Center</td>
<td>CNTR</td>
</tr>
<tr>
<td>Consider</td>
<td>CONS</td>
</tr>
<tr>
<td>Construction</td>
<td>CONST</td>
</tr>
<tr>
<td>County</td>
<td>CNTY</td>
</tr>
<tr>
<td>Closed</td>
<td>CLSD</td>
</tr>
<tr>
<td>Crossing</td>
<td>X-ING</td>
</tr>
<tr>
<td>Do Not</td>
<td>DONT</td>
</tr>
<tr>
<td>Downtown</td>
<td>DWNTN</td>
</tr>
<tr>
<td>East</td>
<td>E</td>
</tr>
<tr>
<td>Eastbound</td>
<td>E-BND</td>
</tr>
<tr>
<td>Emergency</td>
<td>EMER</td>
</tr>
<tr>
<td>Entrance, Enter</td>
<td>ENT</td>
</tr>
<tr>
<td>Exit</td>
<td>EX or EXT</td>
</tr>
<tr>
<td>Express</td>
<td>EXP</td>
</tr>
<tr>
<td>Expressway</td>
<td>EXPWY</td>
</tr>
<tr>
<td>Freeway</td>
<td>FRWY</td>
</tr>
<tr>
<td>Hazardous</td>
<td>HAZ</td>
</tr>
<tr>
<td>Hazardous Material</td>
<td>HAZMAT</td>
</tr>
<tr>
<td>High Occupancy Vehicle</td>
<td>HOV</td>
</tr>
<tr>
<td>Highway</td>
<td>HWY</td>
</tr>
<tr>
<td>Information</td>
<td>INFO</td>
</tr>
<tr>
<td>Interstate</td>
<td>I (followed by route #)</td>
</tr>
<tr>
<td>It Is</td>
<td>ITS</td>
</tr>
</tbody>
</table>
## Standard Abbreviations

<table>
<thead>
<tr>
<th>WORD</th>
<th>ABBREVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junction</td>
<td>JCT</td>
</tr>
<tr>
<td>Lane</td>
<td>LN</td>
</tr>
<tr>
<td>Left</td>
<td>LFT</td>
</tr>
<tr>
<td>Maintenance</td>
<td>MAINT</td>
</tr>
<tr>
<td>Miles</td>
<td>MI</td>
</tr>
<tr>
<td>Morning/Late Night</td>
<td>AM</td>
</tr>
<tr>
<td>Next</td>
<td>NXT</td>
</tr>
<tr>
<td>Normal</td>
<td>NORM</td>
</tr>
<tr>
<td>North</td>
<td>N</td>
</tr>
<tr>
<td>Northbound</td>
<td>N-BND</td>
</tr>
<tr>
<td>Parking</td>
<td>PKING</td>
</tr>
<tr>
<td>Parkway</td>
<td>PKWY</td>
</tr>
<tr>
<td>Right</td>
<td>RHT</td>
</tr>
<tr>
<td>Road</td>
<td>RD</td>
</tr>
<tr>
<td>Route</td>
<td>RTE</td>
</tr>
<tr>
<td>Service</td>
<td>SERV</td>
</tr>
<tr>
<td>Shoulder</td>
<td>SHLDR</td>
</tr>
<tr>
<td>Slippery</td>
<td>SLIP</td>
</tr>
<tr>
<td>South</td>
<td>S</td>
</tr>
<tr>
<td>Southbound</td>
<td>S-BND</td>
</tr>
<tr>
<td>Speed</td>
<td>SPD</td>
</tr>
<tr>
<td>Street</td>
<td>ST</td>
</tr>
<tr>
<td>Temporary</td>
<td>TEMP</td>
</tr>
<tr>
<td>Thruway</td>
<td>THWY</td>
</tr>
<tr>
<td>Traffic</td>
<td>TRAF</td>
</tr>
<tr>
<td>Travelers</td>
<td>TRVLRS</td>
</tr>
<tr>
<td>Turnpike</td>
<td>TRNPK</td>
</tr>
<tr>
<td>US Numbered Route</td>
<td>US (followed by route #)</td>
</tr>
<tr>
<td>Vehicle</td>
<td>VEH</td>
</tr>
<tr>
<td>Warning</td>
<td>WARN</td>
</tr>
<tr>
<td>West</td>
<td>W</td>
</tr>
<tr>
<td>Westbound</td>
<td>W-BND</td>
</tr>
<tr>
<td>Will Not</td>
<td>WONT</td>
</tr>
</tbody>
</table>
## Abbreviations That Are Acceptable Only With a Prompt Word

<table>
<thead>
<tr>
<th>WORD</th>
<th>ABBREVIATION</th>
<th>PROMPT WORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access</td>
<td>ACCS</td>
<td>ROAD</td>
</tr>
<tr>
<td>Blocked</td>
<td>BLKD</td>
<td>LANE*</td>
</tr>
<tr>
<td>Bridge</td>
<td>BRDG</td>
<td>(NAME)*</td>
</tr>
<tr>
<td>Commercial</td>
<td>COMM</td>
<td>VEHICLE*</td>
</tr>
<tr>
<td>Condition</td>
<td>COND</td>
<td>TRAFFIC*</td>
</tr>
<tr>
<td>Congestion</td>
<td>CONG</td>
<td>TRAFFIC* or AHEAD</td>
</tr>
<tr>
<td>Interstate</td>
<td>I</td>
<td>(NUMBER)</td>
</tr>
<tr>
<td>Local</td>
<td>LCL</td>
<td>TRAFFIC</td>
</tr>
<tr>
<td>Major</td>
<td>MAJ</td>
<td>CONGESTION or CRASH</td>
</tr>
<tr>
<td>Minor</td>
<td>MNR</td>
<td>DELAYS or CONGESTION</td>
</tr>
<tr>
<td>Oversized</td>
<td>OVRSZ</td>
<td>LOADS or TRUCKS</td>
</tr>
<tr>
<td>Prepare</td>
<td>PREP</td>
<td>TO STOP</td>
</tr>
<tr>
<td>Pavement</td>
<td>PVMT</td>
<td>WET or ICY or SLIPPERY*</td>
</tr>
<tr>
<td>Signal</td>
<td>SGNL</td>
<td>TRAFFIC* or AHEAD</td>
</tr>
</tbody>
</table>

In general, the prompt words noted above can appear either before or after the abbreviation, depending on the meaning. However the prompt words marked with an * should appear before the abbreviation.
Unacceptable Abbreviations

<table>
<thead>
<tr>
<th>ABBREVIATION</th>
<th>INTENDED WORD</th>
<th>CONFUSED WITH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC</td>
<td>Accident</td>
<td>Access</td>
</tr>
<tr>
<td>CLRS</td>
<td>Clears</td>
<td>Colors</td>
</tr>
<tr>
<td>CTY</td>
<td>County</td>
<td>City</td>
</tr>
<tr>
<td>DLY</td>
<td>Delay</td>
<td>Daily</td>
</tr>
<tr>
<td>L</td>
<td>Left</td>
<td>Lane (Merge)</td>
</tr>
<tr>
<td>PARK</td>
<td>Parking</td>
<td>Park (Central Park)</td>
</tr>
<tr>
<td>RED</td>
<td>Reduce</td>
<td>Red</td>
</tr>
<tr>
<td>RT</td>
<td>Route</td>
<td>Right</td>
</tr>
<tr>
<td>STAD</td>
<td>Stadium</td>
<td>Standard</td>
</tr>
<tr>
<td>WRNG</td>
<td>Warning</td>
<td>Wrong</td>
</tr>
</tbody>
</table>

The public can easily associate the above abbreviations with more than one meaning and therefore they should not be used.
APPENDIX B

Permanent VMS Sample Messages
### Appendix C – ABBREVIATIONS

<table>
<thead>
<tr>
<th>EVENT/SCENARIO</th>
<th>PREFERRED</th>
<th>AVOID</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Crash”</td>
<td>CRASH AHEAD</td>
<td></td>
<td>&lt;Use the word “CRASH” when signing for a Crash - Only use the word “AHEAD” if the sign is less than a mile from the queue.</td>
</tr>
<tr>
<td>N-BND, S-BND, E-BND, W-BND</td>
<td>LONG DELAYS</td>
<td>LONG DELAYS</td>
<td>&lt;Use the abbreviation designating direction (N-BND, S-BND, E-BND, or W-BND) to state the location first if possible. Be careful crafting messages.</td>
</tr>
<tr>
<td>Closed vs. Blocked</td>
<td>CRASH AHEAD</td>
<td></td>
<td>&lt;The term “BLOCKED” would be preferred for a Crash, until emergency personnel arrive and close the lane.</td>
</tr>
<tr>
<td>Use Numbers</td>
<td>CRASH AT 85TH ST</td>
<td>CRASH AT EIGHTY FIFTH ST</td>
<td>&lt;Use numbers whenever possible.</td>
</tr>
<tr>
<td>EVENT/SCENARIO</td>
<td>PREFERRED</td>
<td>AVOID</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Single-phase messages are preferred</td>
<td>LONG DELAYS I-90 AT I-87 3 RHT LANES</td>
<td></td>
<td>&lt; This information can be displayed on a single-phase three-line message rather than a two-phase message.</td>
</tr>
<tr>
<td>Congestion after incident is cleared</td>
<td>LONG DELAYS EXITS 32 TO 25</td>
<td></td>
<td>&lt; Providing congestion limits is very effective.</td>
</tr>
<tr>
<td></td>
<td>LONG DELAYS EXITS 32-25</td>
<td></td>
<td>&lt; A dash can be used to replace the word “TO”, especially when pressed for space.</td>
</tr>
<tr>
<td></td>
<td>LONG DELAYS TO EXIT 25</td>
<td></td>
<td>&lt; Use “TO” instead of “AT” if the VMS is located in the traffic queue.</td>
</tr>
<tr>
<td>VMS is on the same route as the incident</td>
<td>2 LFT LANES BLKD AT WOODHAVEN EXIT</td>
<td>2 LFT LANES AT WOODHAVEN BLOCKED</td>
<td>&lt; Problem stated on one line, location stated on another.</td>
</tr>
<tr>
<td>EVENT/SCENARIO</td>
<td>PREFERRED</td>
<td>AVOID</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>------------------------------------------------</td>
<td>--------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Only left lane is open</td>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td>&lt;“Only Left Lane Open” has a great impact, and provides a good description of the conditions to the motorists.</td>
</tr>
<tr>
<td>Off ramp closed</td>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td>Off ramp partially blocked</td>
<td><img src="image5.png" alt="Diagram" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Highway Connector closed with recommended detour</td>
<td><img src="image6.png" alt="Diagram" /></td>
<td><img src="image7.png" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td>Highway Connectors (both directions) blocked</td>
<td><img src="image8.png" alt="Diagram" /></td>
<td><img src="image9.png" alt="Diagram" /></td>
<td></td>
</tr>
</tbody>
</table>
### EVENT/SCENARIO

<table>
<thead>
<tr>
<th>Highway connector closed on another route</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-287 TO I-87</td>
</tr>
<tr>
<td>EXIT CLOSED</td>
</tr>
<tr>
<td>CARS USE TSP</td>
</tr>
</tbody>
</table>

### Standard Messages

- **TRAFFIC INFO**
  - TUNE TO 1610 AM

- **- CAUTION -**
  - POOR VISIBILITY
  - REDUCE SPEED

- **- CAUTION -**
  - FLOODING AHEAD
  - REDUCE SPEED

### ADDITIONAL INFORMATION

- The only desirable punctuation is a dash. Avoid periods, commas, quotes, etc.
- Make sure reference is a major cross street with signing on the highway
- Always use the word Crash if a Crash is involved.
- For off-route incidents, use affected route and direction after the word “CRASH”
- Only use the word “AHEAD” on signs one mile or less from a Crash scene or event
- Avoid using “REDUCE SPEED” when it is obvious to do so
- Limit messages to two lines when possible
APPENDIX C

Portable VMS Sample Messages
<table>
<thead>
<tr>
<th>EVENT/SCENARIO</th>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Crash”</td>
<td>CRASH</td>
<td></td>
<td>&lt; May be the most common portable message used to manage the end of a queue.</td>
</tr>
<tr>
<td></td>
<td>PREPARE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>STOP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NBND, S-BND, E-BND, W-BND</td>
<td>EXPECT</td>
<td>MON-FRI</td>
<td>&lt; Use the letter designating direction (N/B, S/B, E/B, W/B) – state the location first, if possible.</td>
</tr>
<tr>
<td></td>
<td>DELAYS</td>
<td>9 AM – 3 PM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>495 W-BND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advance Closure Notice</td>
<td>I-84 E-BND</td>
<td>FRI 9 PM</td>
<td>&lt; If a major ramp closure will have a significant impact on traffic, this advance notice is effective – avoid using calendar dates (i.e., 3/14 – 3/17).</td>
</tr>
<tr>
<td></td>
<td>RAMP TO</td>
<td>THROUGH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CLOSE</td>
<td>MON 5 PM</td>
<td></td>
</tr>
<tr>
<td>End Mixed HOV Lane</td>
<td>HOV</td>
<td>2 OR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LANE</td>
<td>MORE PER</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VEHICLE</td>
<td></td>
</tr>
<tr>
<td>Route Guidance</td>
<td>I-95 N-BND</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DETOUR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KEEP RHT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVENT/SCENARIO</td>
<td>PHASE 1</td>
<td>PHASE 2</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Advance notice</td>
<td>RAMP TO BE CLOSED</td>
<td>MON-FRI 9AM – 3PM</td>
<td></td>
</tr>
<tr>
<td>Advance notice</td>
<td>TRAFFIC INFO</td>
<td>TUNE TO 530 AM</td>
<td></td>
</tr>
<tr>
<td>Advance notice</td>
<td>CHAINS REQUIRED</td>
<td>SNOW TIRES 4 X OK</td>
<td></td>
</tr>
<tr>
<td>Advance notice</td>
<td>DENSE FOG AHEAD</td>
<td>REDUCE SPEED</td>
<td></td>
</tr>
<tr>
<td>Advance notice</td>
<td>LONG DELAYS AHEAD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVENT/SCENARIO</td>
<td>PHASE 1</td>
<td>PHASE 2</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>----------------</td>
<td>---------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>Advance notice</td>
<td>CRASH</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXIT 17</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CLOSED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advance notice</td>
<td>LOCAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TRAFFIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ONLY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advance notice</td>
<td>RT 440</td>
<td></td>
<td>NIGHTLY</td>
</tr>
<tr>
<td></td>
<td>CLOSED</td>
<td></td>
<td>8PM-5AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D

AMBER Alert – Operations and Implementation Guide
Program Overview

The New York State Police (NYSP) is the lead agency for AMBER Alerts in NYS. All requests for AMBER Alert implementations are forwarded to the NYSP COMSEC (Communications Section) in Albany, NY where they are reviewed to determine if they meet the criteria for an AMBER alert. NYSP will activate an AMBER Alert when circumstances meet the following criteria:

• The abduction of a child under the age of 18 has occurred and
• The child is believed to be in danger of serious bodily harm or death, either due to the actions of another, or due to a proven mental or physical condition

NYSP will request the use of the Department’s resources (511NY, VMS and HAR) for an AMBER Alert.

The Department’s implementation of AMBER Alert activities will only be in response to an official activation notice issued by the NYSP delivered from any one of the following notification sources:

• the NYSDOT AMBER Alert statewide point of contact (Region 10 INFORM)
• the NYSP COMSEC (Communications Section) facility in Albany, NY

While local police agencies may request the activation of an AMBER Alert, that request must be directed to the NYSP COMSEC, who has the official authority to activate an AMBER Alert in NYS. NYSDOT will activate only on official request from NYSP.

Notification Process
The NYSP shall notify NYSDOT of all official AMBER Alerts requesting Department VMS, HAR and/or 511NY support via transmission of the AMBER Activation Document as shown in Appendix # 4. The notification mechanism shall be as follows:

1. NYSP COMSEC verbally informs, faxes, e-mails and text messages the AMBER Activation Document to the Department’s Statewide AMBER Alert point of contact, which is the Region 10 INFORM TMC. The document is also sent to the Statewide Transportation Information & Coordination Center (STICC).

2. For AMBER Alert cases initiated by NYPD, the NYPD, in support of NYSP, will simultaneously notify the NYSDOT/NYCDOT Joint TMC in Long Island City. Note this only serves as an advance notification and no action shall be taken by NYSDOT until the NYSP COMSEC formally implements an Alert via the AMBER Activation Document.

The AMBER Activation document is the official notification document that will be distributed by the NYSP and contains the following information of interest:

• AMBER Alert Activation Area

• Text of the AMBER Alert message being distributed for use on the Emergency Alert System, which could also be used for HAR.

• Suggested message for VMS signs. If VMS implementation is requested, it will be noted on the Broadcast Form.

Updates & Cancellations
Once an AMBER Alert has been initiated, it is possible that significant new information will become available affecting the Alert. In that case, an alert update will be issued and the implementation time will be extended for eight hours from the issuance of the update. It will also be necessary to issue an Alert cancellation, in the event that the child is recovered within the alert’s eight hour activation period. Any updates or cancellation notices will follow the same procedure as the original notifications. No update or cancellation shall be acted upon unless received from the NYSP and confirmed via the mechanisms described in this policy.

**Implementation**

**INFORM – Department Point of Contact**

Upon receipt of an AMBER Alert Notification, the NYSDOT points of contact shall take the following actions:

1. INFORM shall use *Appendix #3 - Cross Reference Chart - AMBER and ‘Missing’ Alerts Activation Zones/NYSDOT Regions/511NY Calling Regions*, to determine which NYSDOT Regions align with the AMBER alert activation zones.

2. INFORM will verbally contact all affected Regional points of contact to confirm the existence of the Alert, the official AMBER activation zones and any other pertinent details. INFORM will also forward the AMBER Activation document to Regions.

**Regions – VMS, HAR Activation and internal Regional Notification**

NYSDOT Regions will receive an official AMBER Alert notification as described above based on their geographic inclusion in a particular alert activation zones. Upon receipt of an AMBER Alert Notification from INFORM, the Regions shall take the following actions:

1. Refer to *Appendix #3* to determine the counties in which to activate VMS. **Use of VMS, HAR, and the 511NY floodgate shall be within the AMBER activation zone or in reasonable proximity.**
2. Report to INFORM the approximate number of signs and HAR units that will be used for the activation.
3. Log all VMS and HAR implementation message texts and times of implementation, any changes and termination.
4. Report any modifications made to the recommended VMS message and supply a copy of the message to INFORM.
5. Notify Regional Residencies, Bridge Maintenance crews and Regional Offices of Operations of active AMBER alerts **only when a vehicle is involved.** *Appendix #12* outlines the TMC procedure for notifying Residencies, the Regional Operations Office and Bridge Maintenance Offices of the alert. These stakeholders will serve as an extra set of eyes and ears during an active alert. The Regional cross reference chart, *Appendix #3*, shall be used to determine which Residency should be notified of the Alert. These Residencies align with the counties in which VMS is active.

Each Region shall establish an efficient communications protocol to ensure the rapid utilization of its available VMS, HAR and notifications to Highway Maintenance. This Regional protocol shall be kept up to date and be part of each Region’s standard operating procedures. Regions shall ensure that all appropriate personnel involved in an AMBER Alert implementation receive a copy of the guidelines and are properly trained in this policy.
STICC – 511NY Floodgate Message
Upon receipt of an AMBER Alert Notification from INFORM, the STICC shall take the following actions:

1. Create and post information about the AMBER Alert on the 511NY Phone system via a floodgate message. Appendix #5 is a template used for creating a floodgate message based on the information from the NYS AMBER Activation document (Appendix #4).

2. Email INFORM and NYSP (COMSEC and SVU) of the floodgate’s posting to 511NY. Include a copy of the script used to record the message and a .wav file containing the recording. NYSP reviews the recording for major flaws (i.e. incorrect vehicle information).

3. Create and post a notification in the Emergency Alert box on the 511NY Homepage.

Activation Areas
The geographical coverage of an AMBER Alert implementation is based on radio and television coverage and does not directly coincide with the Department’s Regions or 511NY Calling Regions.

A map and listing of Alert Activation Zones and corresponding NYSDOT & 511NY Regions are included in Appendix #3 - Cross Reference Chart - AMBER and ‘Missing’ Alerts Activation Zones/NYSDOT Regions/511NY Calling Regions. Use of VMS, HAR, and the 511NY floodgate shall be within the AMBER activation zone or in reasonable proximity.

Support on AMBER Alerts Initiated by Other States
It is possible that an AMBER Alert will be implemented by an adjacent state. Information on this alert may be picked up by police agencies and radio and television broadcast media in NYS.

The NYSP have established formal procedures for coordinating and supporting an AMBER Alert initiated by an adjacent state and, if appropriate, will use the standard NYS AMBER Alert notification process to implement such an alert in NYS.

No action should be taken to implement an AMBER Alert initiated by another state unless the formal notification is received from the NYSP in accordance with the processes identified in this document.

Coordination with NYPD
The New York City Police Department (NYPD) will pro-actively coordinate the activation of VMS Signs with the NYCDOT/NYSDOT Joint Transportation Management Center for AMBER alerts affecting the NYC metropolitan area.

Variable Message Signs
AMBER Alert messages should not supersede VMS and HAR messages which are high priority safety or critical traffic management notifications such as specific work zone safety, traffic control, emergency detours, and incident management. Nothing in this policy suggests a requirement to pre-empt critical motorist safety messages. In general, VMS in use for construction project maintenance and protection of traffic will not be used for AMBER Alerts due to the critical safety aspects of those messages and the need to avoid introducing additional demands on travelers passing through the construction area. The use of workzone VMS for
AMBER Alerts shall be at the direction of the Engineer-in-Charge. Traffic Management Centers should monitor, to the extent possible, traffic conditions that occur after the Alert messages have been implemented. It may be necessary to turn off an AMBER Alert message that creates a traffic hazard, such as severe traffic congestion caused by traffic slowing down or stopping to read the sign.

Available portable and permanent VMS should be utilized for AMBER Alert messages, subject to the limitations identified in this policy.

**VMS used to support the HAR**
HAR messages should be a verbal copy of the suggested VMS message provided by the NYSP in the NYS AMBER Activation Document (*Appendix #4*). If a VMS is adjacent to a Highway Advisory Radio (HAR) location, the VMS message should be as provided below.

**Message for VMS adjacent to HAR**

First Panel

**AMBER**  
**ALERT**

Second Panel

**TUNE TO**  
**XXXX AM**  
(XXXX = HAR frequency; use AM or FM as appropriate)

**VMS Message Format**

**License Plate Information**
NYSP may provide INFORM a suggested message with vehicle make/model/license plate to post on VMS signs. The message will be developed by the NYSP and included in the NYS AMBER Activation document. The message may be modified by INFORM or the Regions to fit larger permanent VMS or to significantly improve the clarity and readability of the message.

A) Specific Message (with plate number information) for VMS:

<table>
<thead>
<tr>
<th>First Panel</th>
<th>Second Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AMBER</strong></td>
<td><strong>COLOR</strong></td>
</tr>
<tr>
<td><strong>ALERT</strong></td>
<td><strong>MAKE or MODEL</strong></td>
</tr>
<tr>
<td><strong>LOOK FOR</strong></td>
<td><strong>LICENSE PLATE</strong></td>
</tr>
</tbody>
</table>

**Examples of Second Panel**

<table>
<thead>
<tr>
<th>BLACK</th>
<th>RED</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORD</td>
<td>PICKUP</td>
</tr>
<tr>
<td>ABC 1234</td>
<td>XYZ 5678</td>
</tr>
</tbody>
</table>
All VMS used for AMBER Alert messages shall use two panels to present the message. This is to ensure the clarity of the message and the public’s understanding of the information provided.

**No License Plate Information**
Instances may occur where AMBER Alert cases do not have a plate number or significant partial plate number, but there is some vehicle-related information available where motorist alertness and involvement could be a positive component of the overall AMBER Alert activation. In these cases, the NYSP will request that the Department will display a general message that advises motorist of the Alert and instructs them to tune to local news for further information. However, the second panel of VMS shall be updated to “CALL 511” only after the STICC has posted a floodgate message about the alert on the 511NY phone system. *Appendix #13* provides more details on the protocol for updating the VMS to display “CALL 511.”

B) Initial Message (insufficient or no plate number information) for VMS:

<table>
<thead>
<tr>
<th>First Panel</th>
<th>Second Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMBER ALERT</td>
<td>TUNE TO LOCAL NEWS</td>
</tr>
</tbody>
</table>

C) General Message once floodgate message is posted to 511NY:

<table>
<thead>
<tr>
<th>First Panel</th>
<th>Second Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMBER ALERT</td>
<td>CALL 511</td>
</tr>
</tbody>
</table>

**Conclusion**

The activation process is summarized below:

![Diagram of activation process]

- NYSP
- INFORM
- STICC
- Regional TMCs
  - Responsible for Activating:
    - Floodgate
    - 511NY Alert Box
  - Responsible for Activating:
    - VMS
    - HAR
    - Highway Maintenance Notifications
APPENDIX E

Missing Adult – Operations and Implementation Guide
NYS Department of Transportation

Operations and Implementation Guidelines

for

*Missing Vulnerable Adult Alerts*

FINAL

June 30, 2016
Program Overview
The Division of Criminal Justice Services (DCJS) is the lead agency for Missing Vulnerable Adult Alerts in NYS. All requests for Missing Adult Alert implementations are sent to the DCJS Missing Persons Clearinghouse where they are reviewed to determine if the situation meets the criteria for a Missing Vulnerable Adult Alert. DCJS will activate a Missing Adult Alert when circumstances meet the following criteria:

- The missing person must be 18 years of age or older and have a cognitive disorder, mental disability or brain disorder
- Law enforcement has determined that there is a credible risk of harm to such missing individual.

DCJS will request the use of the Department's resources (511NY, VMS and HAR) only when there is sufficient and credible information about a vehicle make, model and/or license plate number involved with the missing person case.

The Department’s implementation of AMBER Alert implementation activities will only be in response to an official activation notice issued by DCJS and delivered from any one of the following notification sources:

- DCJS Missing Persons Clearinghouse
- the NYSDOT AMBER Alert statewide point of contact (Region 10 INFORM)

While local police agencies may request the activation of a Missing Adult or Silver Alert, that request must be directed to the DCJS Missing Adult Clearinghouse, who has the official authority to activate a Missing Vulnerable Adult Alert. NYSDOT will only activate a Missing Vulnerable Adult Alert based on official request from DCJS.

The Statewide Transportation Information and Coordination center (STICC) will create and post information about the Missing Vulnerable Adult Alert on the 511NY phone system via a floodgate message. Regional Traffic Management Centers (TMCs) will be responsible for providing alert information via the VMS and HAR units.

Notification Process
DCJS shall notify NYSDOT of all official Missing Vulnerable Adult Alerts requesting Department support via e-mail notification and phone call. The notification mechanism shall be as follows:

1. DCJS e-mail notification to Region 10 TMC, also known as INFORM. This is followed with a phone call confirming the e-mail.
2. DCJS verbal and e-mail notification to the STICC.

The Missing Vulnerable Adult e-mail as shown in Appendix #6 is the official notification document that will be distributed by DCJS and contains the following information critical to the Department’s implementation:

- The alert activation zones
- The vehicle and license plate information for use on VMS signs.
Updates & Cancellations
All Missing Child Alerts will remain active by NYSDOT for 8 hours. It is possible that significant new information can become available during the activation period. In this case, an alert update will be issued and the implementation time will be extended for eight hours from the issuance of the update. It will also be necessary to issue an Alert cancellation in the event that the child is found within the alert’s eight hour activation period or at the end of the 8 hour period. Any updates or cancellation notices will follow the same procedure as the original notifications. No update or cancellation shall be acted upon unless received from DCJS and confirmed via the mechanisms described in this policy.

Activation Areas
The geographical coverage of a Missing Vulnerable Adult Alert implementation is based on radio and television coverage and does not coincide with the Department’s geographic regions or 511NY calling regions.

A map and listing of Alert Activation Zones and corresponding NYSDOT & 511NY Regions are included in Appendix #3 - Cross Reference Chart - AMBER and Missing Alerts Activation Zones/NYSDOT Regions/NY Calling Regions. Use of VMS, HAR, and the 511NY floodgate shall be within the AMBER activation zone or in reasonable proximity.

Implementation

INFORM – Department Point of Contact
Upon receipt of a Missing Vulnerable Adult Alert notification, the NYSDOT point of contact shall take the following actions:

INFORM will verbally contact all affected Regional TMCs to confirm the Alert and send notification details. Appendix #3 shall be used to determine the NYSDOT Regions that align with the AMBER alert Regions.

Regions - VMS and HAR Activation
Upon receipt of a Missing Vulnerable Adult Notification from INFORM, the Regions shall activate VMS Signs and HAR units and take the following actions.

1. Report the approximate number of signs and HAR units that will be used for the activation.
2. Log all VMS and HAR implementation message texts and times of implementation, as well as any changes and termination.
3. Report any modifications made to the recommended VMS message and supply a copy of the message to INFORM.

Each Region shall establish an efficient communications protocol to ensure the rapid utilization of its available VMS and HAR for an official Missing Vulnerable Adult Alert. This protocol shall be kept up to date and be part of each Region’s standard operating procedures. Regions shall ensure that all appropriate personnel are trained in this policy.
STICC – 511NY Floodgate Message
Upon receipt of a Missing Vulnerable Adult Alert Notification from INFORM, the STICC shall take the following actions:

1. The STICC will create and post information about the AMBER Alert on the 511NY Phone system via a floodgate message. Appendix #7 is a template used for creating a floodgate message based on the information provided by DCJS Missing Clearinghouse.

Support on Missing Vulnerable Adult Alerts Initiated by Other States
It is possible that a Missing Vulnerable Adult Alert will be implemented by an adjacent state. Information on this alert may be picked up by police agencies and radio and television broadcast media in NYS.

DCJS have established formal procedures for coordinating and supporting alerts initiated by an adjacent state and, if appropriate, will use the standard NYS Missing Vulnerable Adult Alert process to implement such an alert in NYS. No action should be taken to implement an alert by another state unless the formal notification is received from DCJS in accordance with the processes identified in this document.

Coordination with NYPD
The New York Police Department (NYPD) will pro-actively coordinate the activation of VMS Signs with the NYCDOT/NYS DOT Joint Transportation Management Center for Missing Vulnerable Adult Alerts affecting the NYC metropolitan area.

Variable Message Signs
The Missing Vulnerable Adult Alert messages should not supersede VMS messages which are high priority safety or critical traffic management notifications for work zone safety, traffic control, emergency detours, and incident management. Nothing in this policy suggests a requirement to pre-empt critical motorist safety messages. In general, VMS in use for construction project maintenance and protection of traffic will not be used for Missing Vulnerable Adult Alerts due to the critical safety aspects of those messages and to avoid introducing any additional demands on travelers passing through the construction area. The use of VMS assigned to work zones for Missing Vulnerable Adult Alerts shall be at the direction of the Engineer-in-Charge.

Traffic Management Centers should monitor, to the extent possible, traffic conditions that occur after the Alert messages have been implemented. It may be necessary to turn off a Missing Vulnerable Adult Alert message that creates a traffic hazard, such as severe traffic congestion, caused by traffic slowing down or stopping to read the sign.

Available portable and permanent VMS should be utilized for Missing Vulnerable Adult Alert messages, subject to the limitations identified in this policy.

VMS Message Format
DCJS will provide INFORM with vehicle make/model/license plate information to post on VMS signs. The message may be modified to fit larger permanent VMS or to significantly improve the clarity and readability of the message. The format and content of this message is described in detail below.
All VMS used for Missing Adult Alert messages shall use two panels to present the message. This is to ensure the clarity of the message and the public’s understanding of the information provided.

**VMS messages should not include instructions to call 911, 511 or any other specific telephone number.** Including a phone number can create confusion and lead to a surge in calls by the public looking for more information.

Messages placed on NYSDOT VMS shall be only those as received from the official DCJS notification as described above. VMS messages received verbally shall not be deployed until confirmed by DCJS notification. State resources, including VMS, HAR or 511NY, shall not be used for Municipal or County Silver Alerts programs.

**VMS used to support the HAR**

HAR messages should be a verbal copy of the message included in the email received from DCJS Missing Persons Clearinghouse as shown in Appendix #6. If a VMS is adjacent to a Highway Advisory Radio (HAR) location, the VMS message should be as provided below.

**Message for VMS adjacent to HAR**

**First Panel**

MISSING ADULT

**Second Panel**

TUNE TO XXXX AM  

(XXXX = HAR frequency; use AM or FM as appropriate)
511NY will also be utilized for disseminating a Missing Vulnerable Adult Alert via a floodgate message. The STICC will develop a 511NY floodgate message based on the information provided by DCJS. The floodgate message will include details of the child abduction and suspects and be posted for the 511NY calling regions coinciding with the activated alert zones as outlined in Appendix #3 - Cross Reference Chart - AMBER and Missing Alerts Activation Zones/NYSDOT Regions/NY Calling Regions.

Missing Vulnerable Adult Alert messages will be heard as floodgate messages for a duration not to exceed eight hours, or until the message is cancelled, whichever occurs first. If there is an update, the STICC shall extend the duration of the alert for an additional eight hours from the issuance of the update.
APPENDIX F

Missing Child – Operations and Implementation Guide
Program Overview

The Division of Criminal Justice Service (DCJS) is the lead agency for Missing Child Alerts in NYS. All requests for Missing Child alerts are forwarded to DCJS Missing Persons Clearinghouse where they are reviewed to determine if they meet the criteria for a Missing Child alert:

DCJS will request the use of the Department's resources (511NY, VMS and HAR) for a Missing Child Alert only when vehicle and license plate information is involved. NYSDOT will activate only on official request from DCJS.

The Department's implementation of Missing Child Alert activities will only be in response to an official activation notice issued by DCJS delivered from any one of the following notification sources:

- DCJS Missing Persons Clearinghouse
- Region 10 INFORM, the NYSDOT Missing Child Alert statewide point of contact

Notification Process

DCJS shall notify NYSDOT of all official Missing Child Alerts requesting Department VMS, HAR and/or 511NY support via transmission of the Missing Child Alert Activation Document as shown in Appendix # 8. The notification mechanism shall be as follows:

1. DCJS sends a VMS activation Request to Region 10 INFORM and STICC via phone and e-mail.
2. Region 10 INFORM confirms the request is valid and contacts affected Regional points of contact to confirm the existence of the Alert,

The Missing Child Alert Activation document is the official notification document that will be distributed by DCJS and contains the following information critical to the Department’s implementation:

- The alert activation zones
- The vehicle and license plate information for use on VMS signs

Updates & Cancellations

All Missing Child Alerts will remain active by NYSDOT for 8 hours. It is possible that significant new information can become available during the activation period. In this case, an alert update will be issued and the implementation time will be extended for eight hours from the issuance of the update. It will also be necessary to issue an Alert cancellation, in the event that the child is found within the alert’s eight hour activation period or at the end of the 8 hour period. Any updates or cancellation notices will follow the same procedure as the original notifications. No update or cancellation shall be acted upon unless received from DCJS and confirmed via the mechanisms described in this policy.

Implementation

INFORM – Department Point of Contact
Upon receipt of a Missing Child Alert Notification, the NYSDOT points of contact shall take the
following actions:

1. INFORM shall use Appendix #3 - Cross Reference Chart - AMBER and Missing Alert Activation Zones/NYS DOT Regions/NY Calling Regions to determine which NYS DOT Regions align with the Missing Child Alert activation zones.

2. INFORM will verbally contact all affected Regional points of contact to confirm the existence of the Alert, the official alert activation zones and any other pertinent details. INFORM will also forward the Missing Child Alert activation document to Regions.

**Regions – VMS, HAR Activation and internal Regional Notification**
NYS DOT Regions will receive an official Missing Child Alert notification as described above based on their geographic inclusion in a particular alert activation zone. Upon receipt of a Missing Child Alert Notification from INFORM, the Regions shall take the following actions:

1. Refer to Appendix #3. Use of VMS, HAR, and the 511NY floodgate shall be within the AMBER activation zone or in reasonable proximity.
2. Report to INFORM the approximate number of signs and HAR units that will be used for the activation.
3. Log all VMS and HAR implementation message texts and times of implementation, any changes and termination.
4. Report any modifications made to the recommended VMS message and supply a copy of the message to INFORM.

**STICC – 511NY Floodgate Message**
Upon receipt of a Missing Child Alert Notification from INFORM, the STICC shall take the following actions:

1. Create and post information about the Missing Child Alert on the 511NY phone system via a floodgate message. Appendix #9, the Missing Child Alert Floodgate Script, is a template used for creating a floodgate message based on the information provided by DCJS Missing Clearinghouse.
2. Email INFORM and DCJS of the floodgate’s posting to 511NY. Include a copy of the script used to record the message and a .wav file containing the recording. DCJS reviews the recording for major flaws (i.e. incorrect vehicle info).

**Activation Areas**
A map and listing of Alert Activation Zones and corresponding NYS DOT & 511NY Regions are included in Appendix #3 - Cross Reference Chart - AMBER and Missing Alert Activation Zones/NYS DOT Regions/NY Calling Regions. Use of VMS, HAR, and the 511NY floodgate shall be within the AMBER activation zone or in reasonable proximity.

**Support on Missing Child Alerts Initiated by Other States**
It is possible that a Missing Child Alert may be implemented by an adjacent state. Information on this alert may be picked up by police agencies and radio and television broadcast media in NYS.

No action should be taken to implement a Missing Child Alert initiated by another state unless the formal notification is received from the DCJS in accordance with the processes identified in this document.
**Variable Message Signs**

Missing Child Alert messages should not supersede VMS and HAR messages which are high priority safety or critical traffic management notifications such as specific work zone safety, traffic control, emergency detours, and incident management. Nothing in this policy suggests a requirement to pre-empt critical motorist safety messages. In general, VMS in use for construction project maintenance and protection of traffic will not be used for Missing Child Alerts due to the critical safety aspects of those messages and the need to avoid introducing additional demands on travelers passing through the construction area.

The use of workzone VMS for Missing Child Alerts shall be at the direction of the Engineer-in-Charge.

Traffic Management Centers should monitor, to the extent possible, traffic conditions that occur after the Alert messages have been implemented. It may be necessary to turn off a Missing Child Alert message that creates a traffic hazard, such as severe traffic congestion caused by traffic slowing down or stopping to read the sign.

Available portable and permanent VMS should be utilized for Missing Child Alert messages, subject to the limitations identified in this policy.

**VMS Message Format**

**License Plate Information**

DCJS will provide INFORM the vehicle make/model/license plate information in the Missing Child Alert Activation document. This vehicle information shall be used in the VMS message outlined below. The message may be modified to fit larger permanent VMS or to significantly improve the clarity and readability of the message.

A) Specific Message (with plate number information) for VMS:

<table>
<thead>
<tr>
<th>First Panel</th>
<th>Second Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>MISSING CHILD</td>
<td>COLOR</td>
</tr>
<tr>
<td>LOOK FOR</td>
<td>MAKE or MODEL</td>
</tr>
<tr>
<td></td>
<td>LICENSE PLATE</td>
</tr>
</tbody>
</table>

**Examples of Second Panel**

- BLACK RED
- FORD or PICKUP
- ABC 1234 or XYZ 5678

DO NOT use “AMBER Alert” instead of “Missing Child.” Each alert has unique activation criteria and different legal implications.

All VMS used for Missing Child Alert messages shall use two panels to present the message. This is to ensure the clarity of the message and the public’s understanding of the information provided. **VMS messages for missing child alerts should not include instructions to call 911, 511 or any other specific telephone number.** Including a phone number can create
confusion and lead to a surge in calls by the public looking for more information.

**VMS used to support the HAR**
HAR messages should be a verbal copy of the message included in the email received from DCJS Missing Persons Clearinghouse as shown in Appendix #8. If a VMS is adjacent to a Highway Advisory Radio (HAR) location, the VMS message should be as provided below.

**Message for VMS adjacent to HAR**

First Panel

MISSING CHILD

Second Panel

TUNE TO XXXX AM \( (\text{XXXX} = \text{HAR frequency; use AM or FM as appropriate}) \)

**Conclusion**
The Department participates in Missing Child Alerts activated by DCJS only when there is an alert involving a vehicle and plate information. The activation process is summarized below:
APPENDIX G

Missing College Student – Operations and Implementation Guide
NYS Department of Transportation

Operations and Implementation Guidelines

for

*Missing College Student Alerts*

Final
July 6, 2016
Program Overview

The Division of Criminal Justice Service (DCJS) is the lead agency for Missing College Student Alerts in NYS. All requests for Missing College Student alerts are forwarded to DCJS Missing Persons Clearinghouse where they are reviewed to determine if they meet the criteria for a Missing College Student alert:

DCJS will request the use of the Department’s resources (511NY, VMS and HAR) for a Missing College Student Alert only when vehicle and license plate information is involved. **NYSDOT will activate only on official request from DCJS.**

The Department’s implementation of Missing College Student Alert activities will only be in response to an official activation notice issued by DCJS delivered from any one of the following notification sources:

- DCJS Missing Persons Clearinghouse
- Region 10 INFORM, the NYSDOT Missing College Student Alert statewide point of contact

Notification Process

DCJS shall notify NYSDOT of all official Missing College Student Alerts requesting Department VMS, HAR and/or 511NY support via transmission of the **Missing College Student Alert Activation Document** as shown in Appendix # 10. The notification mechanism shall be as follows:

1. DCJS sends a VMS activation Request to Region 10 INFORM and STICC via phone and e-mail.
2. Region 10 INFORM confirms the request is valid and contacts affected Regional points of contact to confirm the existence of the Alert,

The Missing College Student Alert Activation document is the official notification document that will be distributed by DCJS and contains the following information critical to the Department’s implementation:

- The alert activation zones
- The vehicle and license plate information for use on VMS signs

Updates & Cancellations

All Missing College Student Alerts will remain active by NYSDOT for 8 hours. It is possible that significant new information can become available during the activation period. In this case, an alert update will be issued and the implementation time will be extended for eight hours from the issuance of the update. It will also be necessary to issue an Alert cancellation, in the event that the College Student is found within the alert’s eight hour activation period or at the end of the 8 hour period. Any updates or cancellation notices will follow the same procedure as the original notifications. **No update or cancellation shall be acted upon unless received from DCJS and confirmed via the mechanisms described in this policy.**

Implementation
INFORM – Department Point of Contact
Upon receipt of a Missing College Student Alert Notification, the NYSDOT points of contact shall take the following actions:

1. INFORM shall use Appendix #3 - Cross Reference Chart - AMBER and Missing Alert Activation Zones/NYSDOT Regions/NY Calling Regions to determine which NYSDOT Regions align with the Missing College Student Alert activation zones.

2. INFORM will verbally contact all affected Regional points of contact to confirm the existence of the Alert, the official alert activation zones and any other pertinent details. INFORM will also forward the Missing College Student Alert activation document to Regions.

Regions – VMS, HAR Activation and Internal Regional Notification
NYSDOT Regions will receive an official Missing College Student Alert notification as described above based on their geographic inclusion in a particular alert activation zone. Upon receipt of a Missing College Student Alert Notification from INFORM, the Regions shall take the following actions:

1. Refer to Appendix #3. Use of VMS, HAR, and the 511NY floodgate shall be within the AMBER activation zone or in reasonable proximity.
2. Report to INFORM the approximate number of signs and HAR units that will be used for the activation.
3. Log all VMS and HAR implementation message texts and times of implementation, any changes and termination.
4. Report any modifications made to the recommended VMS message and supply a copy of the message to INFORM.

STICC – 511NY Floodgate Message
Upon receipt of a Missing College Student Alert Notification from INFORM, the STICC shall take the following actions:

1. Create and post information about the Missing College Student Alert on the 511NY phone system via a floodgate message. Appendix #11, the Missing College Student Alert Floodgate Script, is a template used for creating a floodgate message based on the information provided by DCJS Missing Clearinghouse.

2. Email INFORM and DCJS of the floodgate’s posting to 511NY. Include a copy of the script used to record the message and a .wav file containing the recording. DCJS reviews the recording for major flaws (i.e. incorrect vehicle info).

Activation Areas
A map and listing of Alert Activation Zones and corresponding NYSDOT & 511NY Regions are included in Appendix #3 - Cross Reference Chart - AMBER and Missing Alert Activation Zones/NYSDOT Regions/NY Calling Regions. Use of VMS, HAR, and the 511NY floodgate shall be within the AMBER activation zone or in reasonable proximity.

Support on Missing College Student Alerts Initiated by Other States
It is possible that a Missing College Student Alert may be implemented by an adjacent state.
Information on this alert may be picked up by police agencies and radio and television broadcast media in NYS. **No action should be taken to implement a Missing College Student Alert initiated by another state unless the formal notification is received from DCJS in accordance with the processes identified in this document.**

**Variable Message Signs**
Missing College Student Alert messages should not supersede VMS and HAR messages which are high priority safety or critical traffic management notifications such as specific work zone safety, traffic control, emergency detours, and incident management. Nothing in this policy suggests a requirement to pre-empt critical motorist safety messages. In general, VMS in use for construction project maintenance and protection of traffic will not be used for Missing College Student Alerts due to the critical safety aspects of those messages and the need to avoid introducing additional demands on travelers passing through the construction area.

The use of workzone VMS for Missing College Student Alerts shall be at the direction of the Engineer-in-Charge.

Traffic Management Centers should monitor, to the extent possible, traffic conditions that occur after the Alert messages have been implemented. It may be necessary to turn off a Missing College Student Alert message that creates a traffic hazard, such as severe traffic congestion caused by traffic slowing down or stopping to read the sign.

Available portable and permanent VMS should be utilized for Missing College Student Alert messages, subject to the limitations identified in this policy.

**VMS Message Format**

**License Plate Information**
DCJS will provide INFORM the vehicle make/model/license plate information in the *Missing College Student Alert Activation document.* This vehicle information shall be used in the VMS message outlined below. The message may be modified to fit larger permanent VMS or to significantly improve the clarity and readability of the message.

A) Specific Message (with plate number information) for VMS:

<table>
<thead>
<tr>
<th><strong>First Panel</strong></th>
<th><strong>Second Panel</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>MISSING</td>
<td>COLOR</td>
</tr>
<tr>
<td>COLLEGE STUDENT</td>
<td>MAKE or MODEL</td>
</tr>
<tr>
<td>LOOK FOR</td>
<td>LICENSE PLATE</td>
</tr>
</tbody>
</table>

**Examples of Second Panel**

- BLACK          | RED       |
- FORD            | PICKUP    |
- ABC 1234        | XYZ 5678 |

Missing College Student Alert messages shall use two panels to present the message to ensure the clarity of the message and the public’s understanding of the information provided. **VMS messages for missing college Student alerts should not**
include instructions to call 911, 511 or any other specific telephone number. Including a phone number can create confusion and lead to a surge in calls by the public looking for more information.

**VMS used to support the HAR**

HAR messages should be a verbal copy of the message included in the email received from DCJS Missing Persons Clearinghouse as shown in Appendix #10. If a VMS is adjacent to a Highway Advisory Radio (HAR) location, the VMS message should be as provided below.

**Message for VMS adjacent to HAR**

**First Panel**

MISSING
COLLEGE STUDENT

**Second Panel**

TUNE TO
XXXX AM

(XXXX = HAR frequency; use AM or FM as appropriate)

**Conclusion**

The Department participates in Missing College Student Alerts activated by DCJS only when there is an alert involving a vehicle and plate information. The activation process is summarized below:

```
DCJS
INFORM
STICC
  Responsible for Activating:
  • Floodgate
Regional TMCs
  Responsible for Activating:
  • VMS
  • HAR
```
APPENDIX H

Travel Time Systems Requirements
Travel Time Systems Requirements

General Design Requirements

The Region shall develop a comprehensive strategy for the logical build-out of the Travel-Time system. The Regional Travel Time system strategy must be able to merge with any developed corridor plans that extend beyond the Regional borders.

- Prior to design of a new Travel Time System, Regions shall provide the Main Office System Optimization Bureau with a preliminary strategy which shall include but not be limited to:
  - Overall plan for initial deployment
  - High-level plan for future deployments/phases
  - How the information will be collected and processed
  - How personal information will be protected
  - Proposed locations of signs
  - Types of signs
  - Proposed destinations and why they were chosen

- All system design should be incorporated into the Regional Architecture.

- Design process shall conform to applicable Department policy regarding project scoping and development as well as federal systems engineering requirements.

- The Region must provide a plan for how the accuracy of the information will be monitored and verified regularly. The QA/QC plan shall include the method used to check accuracy and the frequency in which it will be checked.

- Travel Time Systems must utilize software and equipment which automatically calculates travel times utilizing detectors and pre-determined algorithms. Manual entry of travel times shall only be utilized in rare circumstances.

- Steps shall be taken to ensure that privacy/security issues are addressed appropriately for the type of detection used for the system.

- Consideration should be given to the use of “Hybrid” message signs for travel times. Hybrid signs are static signs with changeable insert panels. They are low cost alternatives to installing new Variable message signs (VMS). The use of hybrid signs would make VMS available to provide detailed information such as incident locations and/or lane blockages.

- Each Region shall provide adequate information to the public prior to a new system startup or significant expansion. This public information campaign shall be coordinated through the Main Office System Optimization Bureau and Office of External Relations and should include information such as:
  - How the information is collected
  - How the information will be utilized
  - How personal information will be protected
  - Locations of signs
  - Destinations included on the signs and why they were chosen
General Display Requirements

Travel times shall only be displayed during the hours of heaviest congestion, typically during the weekday a.m. and p.m. peak periods.

However, this does not preclude activating the travel time displays during off-peak periods when it is determined that traffic volumes have reached a level where the display of travel times is beneficial to the motorists.

Examples of these exceptions include special events, poor driving conditions due to weather, major road closures, major incidents, seasonal recurring congestion (i.e. weekend beach traffic), etc.

Travel times shall be rounded in accordance with the following parameters:

- For segments with normal free-flow travel times ≤ 30 minutes, values shall be rounded to the nearest 2 minutes.
- For segments with normal free-flow travel times > 30 minutes, values shall be rounded to the nearest 5 minutes.

Travel times shall not be shown as ranges. If circumstances arise that suggest ranges are appropriate, the Main Office System Optimization Bureau shall be contacted to make a determination.

Times shall be updated every one minute.

When communications are lost or when the system is not in operation the variable insert of the hybrid sign shall be blank. Variable Message Signs may be blank or contain other messaging during this situation.

Maximum Travel Time to Display for a Segment

Maximum times should be determined for each segment prior to system startup. These maximums may not be the same for each segment. The maximums should be based on the length of the segment, characteristics of the segment’s delay history, and at what level of congestion the data is no longer valid. An example of this is where travel times are so high they have the potential to change considerably between when a traveler views the sign and when they reach the destination.

As a rule of thumb, the maximum travel time for a segment will be between four and six times the free-flow travel time. Each location will need to be evaluated separately to determine at what point the data can no longer be relied upon to provide accurate times. The Main Office System Optimization Bureau is available to provide additional guidance on this requirement. When travel time exceeds the maximum, the display shall automatically default to the following:

- For Hybrid signs – Display shall be “[max time] +”. When the maximum time is greater than 99 minutes the display shall read “99+”.
- For Variable Message Signs – No Travel Time message shall be displayed. However, incident related information such as location, affected lane(s), etc. should be displayed when appropriate.
MINIMUM TRAVEL TIME TO DISPLAY FOR A SEGMENT

The times displayed shall never indicate that the speed limit is being exceeded within the segment. In the event the actual travel time is a result of vehicle speeds higher than the posted speed limit, the software shall default to the minimum time.

Variable Message Sign Display Requirements

The use of Variable message signs to display travel times must be formatted in a specific manner to avoid confusing motorists at the point of the message and possibly creating additional congestion. The requirements described below have been developed to avoid these problems.

CONSISTENT DISPLAYS AT SPECIFIC LOCATIONS

- Any specific VMS shall display the exact same travel time message daily, including content and format. The only variable from one day to the next shall be the time.
- The message format shall comply with the following:

(Note: Sign dimensions and number of character spaces available will vary. Proposed text layouts differing from those depicted below shall be submitted to the Main Office System Optimization Bureau for approval.)

FULL-SIZE VMS

To display travel times to the same destination via alternate routes

1

\[
\begin{array}{c}
\text{T R A V E L T I M E T O} \\
\text{V I A} \\
\text{V I A}
\end{array}
\]

\[
\begin{array}{c}
\text{I} - 4 0 5 \\
\text{I} - 1 0 5 \\
\text{I} - 1 0 5
\end{array}
\]

\[
\begin{array}{c}
\text{8 M I N S} \\
\text{1 6 M I N S}
\end{array}
\]

OR

2

\[
\begin{array}{c}
\text{T I M E T O E X I T} \\
\text{V I A} \\
\text{V I A}
\end{array}
\]

\[
\begin{array}{c}
\text{I} - 7 2 \\
\text{I} - 2 0 \\
\text{I} - 2 1 0
\end{array}
\]

\[
\begin{array}{c}
1 2 M I N S \\
1 2 M I N S \\
3 5 M I N S
\end{array}
\]

To display travel times to one destination

\[
\begin{array}{c}
\text{T R A V E L T I M E T O} \\
\text{D O W N T O W N}
\end{array}
\]

\[
\begin{array}{c}
1 2 M I N S
\end{array}
\]
To Display travel times to two destinations on the same sign

<table>
<thead>
<tr>
<th>TRAVEL TIMES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TO I - 40</td>
<td>8 MINS</td>
</tr>
<tr>
<td>TO I - 315</td>
<td>16 MINS</td>
</tr>
</tbody>
</table>

Portable VMS

To display travel times to one destination

<table>
<thead>
<tr>
<th>TIME TO</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EXIT 102</td>
<td>18 MINS</td>
</tr>
</tbody>
</table>

To Display travel times to two destinations on the same sign

Panel #1

<table>
<thead>
<tr>
<th>TIME TO</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EXIT 14</td>
<td>10 MINS</td>
</tr>
</tbody>
</table>

Panel #2

<table>
<thead>
<tr>
<th>TIME TO</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EXIT 16</td>
<td>18 MINS</td>
</tr>
</tbody>
</table>

OR

Panel #1

<table>
<thead>
<tr>
<th>TIME TO</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I - 10</td>
<td>10 MINS</td>
</tr>
</tbody>
</table>

Panel #2

<table>
<thead>
<tr>
<th>TIME TO</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I - 105</td>
<td>18 MINS</td>
</tr>
</tbody>
</table>

Note: The use of portable VMS for more than one destination should only be used in areas where there is ample approach length to allow drivers adequate time to read and process the text on both panels.

Hybrid Travel Time Signs (Static Signs with Changeable Inserts)

- Hybrid signs should have ability to display 3 characters. (In most cases, they will only show one or two digit numbers.)
- Hybrid sign design layouts shall be submitted to the Main Office System Optimization Bureau for review to ensure conformance with statewide practices.
- The background shall be blue and the text shall conform to the MUTCD.
- The following are examples of hybrid travel time signs:
To display travel times to the same destination via alternate routes

Note: “Miles” may be provided as supplemental information for the non-local traffic.

In the absence of logos or route numbers, appropriate street/road names or exit numbers may be used, keeping in mind that messages should convey the most widely understood naming convention. Commonly used abbreviations may be used for destinations where space is limited.
APPENDIX I

Air Quality Action Days – VMS Policy and Guide
Purpose:
This policy and procedure has been established to clarify the role of the Transportation Management Centers (TMC’s) and the use of Variable Message Signs when notifying the public of Air Quality Action Days. This policy shall be used in conjunction with the current VMS Policy.

Program Outline:
The NYS Department of Transportation is partnering with the NYS Department of Environmental Conservation (NYSDEC) to make the public aware of unhealthy air quality days, and measures they can take to help improve the air they breathe. Air Quality Action Days (AQAD) are intended to notify the public of poor air quality and to promote various means by which the traveling public can help reduce the impact vehicles have on the quality of the air. Air Quality Action Days are defined by specific parameters that have been established by the US Environmental Protection Agency and are applied consistently throughout the nation.

The NYSDOT will post AQAD Alerts when unhealthy levels of ozone or particulate matter (PM) are expected. It is anticipated most of these alerts will occur in spring or summer.

Background:
Ozone is a major component of smog, created in the presence of sunlight by reactions of chemicals found in gasoline, diesel fuel and industrial emissions. Ozone may inflame and irritate the respiratory tract, possibly leading to breathing difficulties, coughing and eye and throat irritation. At higher levels, long-term exposure to ozone may damage lung tissue.

Particulate matter is a mixture of microscopic solid particles and liquid droplets found in the air. Motor vehicle emissions contribute significantly to particulate matter pollution, one of the most serious air pollutants.

The Department’s role in this initiative is to manage our own resources to limit activities that aggravate the problem and utilize our VMS to inform the public about the poor air conditions.

Air Quality Notifications:
When NYSDEC determines that ozone or Particulate Matter forecasts exceed a pre-defined level, an "Air Quality Action Day" will be declared. On such days, governments, corporations and individuals are asked to avoid or minimize polluting activities.

A procedure has been established whereby the Environmental Science Bureau (ESB) in the Main Office will be notifying specific Regions of a pending (or current) “Air Quality Action Day” within their jurisdiction. Executive Management has directed that VMS shall be used, to the extent practical, to assist with the public notification of AQADs. It should be understood that this is not an advertising campaign of the Air Quality Action program, rather it is a real-time alert of the changing conditions in the quality of the air and the need for public participation in a short response-time.
The Regions shall be responsible for establishing a course of action to handle the posting of these messages on available VMS, in accordance with the Notification Process Guidelines. All Regional procedures shall be documented as part of the TMC Standard Operating Procedures (SOP). The SOP’s should clearly identify the person/position as well as a backup person, who is responsible for ensuring all AQAD messages are displayed in accordance with the guidelines.

Based on the timing of the notification, ESB will advise the TMC, via the STICC, whether to post a Category I or Category II message (see attached Approved Messages). Procedures for notifying the Regions are in the attached Notification Process Guidelines.

Regions should monitor, to the extent possible, traffic conditions that occur after the alert messages have been implemented. It may be necessary to turn off an Air Quality Action Day message that creates a traffic hazard, such as severe traffic congestion caused by traffic slowing down or stopping to read the sign. Category II messages (Air Quality Action Day Today) should generally be removed prior to the evening peak driving periods in the event an AQAD is anticipated the following day. The removal of the messages at that time allows for the display of Category I messages (Air Quality Action Day Tomorrow) to the evening commuters notifying them of options for their commute the following day. This does not preclude TMC managers from using their own judgment to continue to display Category II messages if it is expected a large amount of the public will be traveling later in the evening, such as to a special event.

The Main Office Systems Optimization Bureau is responsible for coordinating and managing these procedures, in coordination with the Main Office Environmental Science Bureau, and the Emergency Transportation Operations & Security Program Coordination Bureau.

Questions and Comments regarding these procedures should be directed to the Systems Optimization Bureau.
Notification Process Guidelines
July 2010

Anticipated Air Quality Action Day for the FOLLOWING DAY:
1. NYSDEC will notify the Main Office ESB of a pending Air Quality Action Day (AQAD)
2. ESB will concurrently notify the Main Office STICC, and the Main Office Systems Optimization Bureau via email of the Air Quality Action Day and indicate the message category to be used.
3. STICC will notify the affected Regional TMC’s via email.
4. The Affected Regions will be responsible for posting one (or more) of the approved messages in accordance with the NYSDOT VMS Policy and the following guidelines:
   A. The VMS message priority outlined in the VMS Policy shall be adhered to
   B. Only the approved messages (see Attachment 1) shall be used
   C. Due to the length of the messages, only larger (i.e. overhead) signs should be used.
   D. Where possible, the approved messages should be displayed during periods of significant traffic volume, but, messages should not be displayed, or should be removed, if they are expected to cause or are causing significant additional congestion, as sometimes happens during heavy peak periods.
   E. Where possible, the approved messages should be displayed on different signs, at varying times of the day – in anticipation of reaching a larger number of drivers and to minimize driver complacency.
   F. Variations of the approved messages must be reviewed and approved by the Main Office Systems Optimization Bureau.
   G. Messages regarding the pending AQAD shall be displayed for no more than one day prior to the anticipated AQAD.
5. ESB shall notify STICC if the AQAD warning is lifted. STICC shall relay this information to the affected Regions and the messages shall be immediately removed from the VMS.

The procedures outlined below shall be followed when an Air Quality Action Day is activated

Air Quality Action Day has been established for TODAY:
1. NYS DEC will notify the Main Office ESB the day of an Air Quality Action Day
2. ESB will concurrently notify the Main Office STICC, and the Main Office Systems Optimization Bureau via email of the Air Quality Action Day and indicate the message category to be used.
3. STICC will notify the affected Regional TMC’s via email.
4. The Affected Regions will be responsible for posting one (or more) of the approved messages in accordance with the NYSDOT VMS Policy and the following guidelines:
   A. The VMS message priority outlined in the VMS Policy shall be adhered to
   B. Only the approved messages (see Attachment 1) shall be used
   C. Due to the length of the messages, only larger (i.e. overhead) signs should be used.
   D. Where possible, the approved messages should be displayed during periods of significant traffic volume, but, messages should not be displayed, or should be removed, if they are expected to cause or are causing significant additional congestion, as sometimes happens during heavy peak periods.
   H. Where possible, the approved messages should be displayed on different signs, at varying times of the day – in anticipation of reaching a larger number of drivers and to minimize driver complacency.
   E. Variations of the approved messages must be reviewed and approved by the Main Office Systems Optimization Bureau.
   F. Messages regarding an active AQAD should be removed prior to the PM peak driving period if another AQAD is anticipated for the following day.

In the event the Air Quality Action Day is cancelled, the Main Office ESB shall notify the Regions via STICC, as noted above, and the messages shall be immediately removed from the VMS.
Attachment I

Air Quality Action Day
Approved Messages for VMS

Category I
Tomorrow is expected to be an Air Quality Action Day

Option A  
First Panel: AIR QUALITY ACTION DAY TOMORROW
Second Panel: COMBINE TRIPS

Option B  
First Panel: AIR QUALITY ACTION DAY TOMORROW
Second Panel: USE MASS TRANSIT

Option C  
First Panel: AIR QUALITY ACTION DAY TOMORROW
Second Panel: USE CARPOOLS

Category II
Today is an Air Quality Action Day

Option A  
First Panel: AIR QUALITY ACTION DAY TODAY
Second Panel: COMBINE TRIPS

Option B  
First Panel: AIR QUALITY ACTION DAY TODAY
Second Panel: USE MASS TRANSIT

Option C  
First Panel: AIR QUALITY ACTION DAY TODAY
Second Panel: DRIVE LESS

NOTE: Category II Messages should generally be removed prior to the PM peak driving period if it is anticipated that another AQAD will be activated on the following day. This allows for posting of Category I messages to the regular evening commute, providing the greatest potential to have a positive effect for reducing overall emissions the following day.
APPENDIX J

VMS Messaging for Severe Weather
Official Guidance
December 2018

Purpose
This document is to provide direction to TMC Operations management and staff for VMS messaging before and during severe weather. This document is to be used as a supplement to the NYSDOT Variable Message Sign Guidelines and is intended for use by the Regional Traffic Management Centers. It is important to remember that the Variable Message Sign (VMS) is a traffic control device regulated by the Federal MUTCD. The primary function of the VMS shall always be to communicate to motorists actual roadway conditions on the route ahead.

Introduction
In order to provide the best information for motorists prior to and during extreme weather, the Department may utilize Variable Message Signs to convey warning messages about potential hazardous driving conditions due to severe weather that meet certain triggers outlined in the following pages.

The VMS Policy and the VMS Guidelines should continue to be referred to for direction on the procedures, priorities, and rules for posting messages on VMS.

The following shall be used as guidance for the timing, content, and location of severe weather messages on VMS. The guidance contained within this document is in accordance with the MUTCD and is in alignment with national research on the display of weather messages on VMS.

Although these guidelines cover messaging for various severe weather conditions throughout the year, TMC Operations staff should be very aggressive with winter storm messaging at the beginning of the snow and ice season, as drivers may need to be reminded of the additional care that is necessary for driving in winter weather.

On the following pages, the examples shown may be used interchangeably using similar terminology shown in other examples. Words relating to the timeframe (“TOMORROW”, “TODAY”, “EXPECTED”, “LIKELY”, “POSSIBLE”, etc), the location (“AHEAD”, “EXIT XX to YY”, “AT EXIT XX”, etc) or the event (“HEAVY SNOW”, “FLOODING”, “ICY CONDITIONS”, “HIGH WINDS”, etc) should be used as required for the intent of the message in either Phase 1 or Phase 2.

There are two categories of VMS messages for severe weather: Pre-Storm and During the Storm.

1. Pre-Storm Messages
Pre-storm messages are intended to notify drivers that unusually poor/hazardous driving conditions are expected in the immediate future. This includes warnings for commuters - notifying them of a storm predicted to affect the upcoming “rush-hour” period.

It’s important to note that messages on the VMS are not intended to be used as a weather report for motorists. The purpose of the early warning messages is to warn motorists that poor driving conditions are expected. The intent of these pre-storm messages should be to encourage drivers to modify their travel plans or, in some cases, to avoid driving altogether during the storm.
The general rule of thumb will be to warn drivers of potential hazardous driving conditions one rush-hour period in advance of a storm. For example, if a storm is forecasted to begin late Thursday afternoon, the TMC should activate signs alerting drivers of potential poor driving conditions on Thursday morning, one rush-hour period prior to the actual storm. TMCs should not activate storm-related VMS messaging on Wednesday afternoon/evening, as this would be two rush-hour periods in advance of the forecasted storm.

2. **Warning Messages During a Storm**

Warning messages during a storm, as outlined in the *VMS Guidelines*, are to be used to warn drivers of actual, *unexpected* poor driving conditions along the route that they are traveling. This does NOT include providing information about the current “weather” but rather alerting drivers about the actual condition of the highway. An example of this is when a stretch of highway is experiencing icing, even though it is actively being treated.

When posting warnings about road conditions due to weather, it is imperative that TMC operators maintain a high level of awareness of the road conditions throughout the storm. This is to ensure the appropriate messages are displayed and subsequently updated or removed as highway conditions change. Maintaining this level of awareness may require increased communication between Residencies and the TMC.

**Road Closure due to a Crash**

In the event a road is closed due to a crash during a weather event (regardless if bad weather may have caused the crash), all normal messaging procedures remain in-effect. VMS should read “CRASH AT EXIT XX / ROAD CLOSED” or “ROAD CLOSED AHEAD”, or a variation of these. Refer to the *VMS Policy* and the *VMS Guidelines* for more information. In this particular example, the VMS should not indicate “ROAD CLOSED / WHITEOUT CONDITIONS” or “CRASH AT EXIT XX / ICY CONDITIONS”.

3. **Advisory Speed Messages**

   Advisory Speed messages shall only be posted at the direction of the Commissioner.

Advisory speed messages will only be used when a corridor is experiencing extreme icing or heavy snowfall conditions. Implementing temporary reductions in speed limits involves a coordinated effort with State Police, NYSDOT field personnel, and the TMC, as well as a traffic engineering professional. The “boundaries” of the reduced speed zone along a corridor shall be adjusted to changing conditions throughout the storm. The boundaries shall be established such that drivers within the reduced speed zone do not experience long stretches of highway where there is minimal storm activity.
Pre-Storm Messages

These messages should be posted one rush-hour period IN ADVANCE of the start of the winter storm. Some messages that are posted in advance of the storm are not appropriate for posting during the storm (such as “AVOID TRAVEL”).

When displaying pre-storm messages, it is not necessary to post the message on every sign. Some signs, such as those displaying travel time messages, should continue to be utilized where necessary for current travel conditions. Regions may need to coordinate pre-storm messaging with neighboring states, adjacent Regions, and other transportation agencies. In these instances, coordinated messages must follow the pre-storm guidance below as closely as possible.

Triggers

The effectiveness of pre-storm messages has been shown to lessen with overuse/oversaturation in any given area. The following factors shall be considered when establishing the timing and content of pre-storm messages:

- **Official severe weather WARNINGS** – Issued by official sources (i.e. National Weather Service)
- **Severe winter weather that may include:**
  - Heavy snowfall rates – Typically, 2” per hour over an extended period will result in poor driving conditions
  - Gusting winds combined with light snow (This can cause whiteout conditions)
  - Severe icing conditions

*Pre-Storm messages shall not be activated for official weather ADVISORIES or WATCHES unless the Assistant Commissioner for the Operations and Asset Management Division or staff from the Main Office Traffic Safety and Mobility office direct otherwise.*

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAVY</td>
<td>LAKE EFFECT</td>
<td>AVOID</td>
<td>AVOID</td>
<td>AVOID</td>
</tr>
<tr>
<td>SNOW</td>
<td>SNOW</td>
<td>MORNING</td>
<td>UNNECESSARY</td>
<td>TRAVEL</td>
</tr>
<tr>
<td>EXPECTED</td>
<td>EXPECTED</td>
<td>TRAVEL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAVY</td>
<td>SEVERE</td>
<td>ICY</td>
<td>POOR DRIVING</td>
<td>REDUCED</td>
</tr>
<tr>
<td>SNOW</td>
<td>STORM</td>
<td>CONDITIONS</td>
<td>CONDITIONS</td>
<td>VISIBILITY</td>
</tr>
<tr>
<td>TOMORROW</td>
<td>TONIGHT</td>
<td>TUESDAY</td>
<td>LIKELY</td>
<td>EXPECTED</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLIZZARD</td>
<td>SLIPPERY ROAD</td>
<td>ICY</td>
</tr>
<tr>
<td>EXPECTED</td>
<td>CONDITIONS</td>
<td>CONDITIONS</td>
</tr>
<tr>
<td>TOMORROW</td>
<td>EXPECTED</td>
<td>LIKELY</td>
</tr>
</tbody>
</table>

NOTE: Messages of higher priority (i.e. CRASH; AMBER ALERT; etc) take precedence over pre-storm messages. These messages are approved pre-storm VMS Messages and should not be modified. Any messages for weather conditions not represented (i.e. fog, hail, flooding, etc) should follow the formats to the left and above.
Warning Messages During a Storm

These messages should only be posted AFTER the storm has begun and should reflect the actual condition being experienced on the highway.

Triggers

The following factors shall be considered when establishing the timing and content of during-storm messages:

- **Heavy snowfall rates** – Typically, 2” per hour over an extended period will result in poor driving conditions
- **Gusting winds combined with light snow causing whiteout conditions**
- **Severe icing conditions**
- **Unexpected, localized severe weather conditions** (Heavy lake effect snow bands, local snow squalls, fog, flooding, etc)
- **Unexpected pavement conditions** (Snow sticking to the roadway, standing water, etc)
- **Heavy rainfall rates or extreme high tides causing roadway flooding**
- **Official Travel Bans & Declared Emergencies**

The messages below are approved VMS Messages for use during a storm and should not be modified significantly. Any messages for weather conditions not represented below (i.e. fog, hail, flooding, etc) should follow the formats below.

When displaying messages for severe weather, it is not necessary to post the message on every sign. For localized weather conditions, only the signs approaching the adverse condition should display the message. Some signs, such as travel time messages should also continue to be utilized where necessary for current travel conditions.

Regions should coordinate warning messaging with neighboring states, Regions, and other transportation agencies. In these instances, coordinated messages must follow the warning message guidance below as closely as possible.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAVY</td>
<td>LAKE EFFECT</td>
<td>REDUCE</td>
<td>ADJUST SPEED</td>
<td>CONSIDER</td>
</tr>
<tr>
<td>SNOW</td>
<td>SNOW</td>
<td>SPEED</td>
<td>FOR</td>
<td>ALTERNATE</td>
</tr>
<tr>
<td>AHEAD</td>
<td>AT EXIT XX</td>
<td></td>
<td>CONDITIONS</td>
<td>ROUTE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHITEOUT</td>
<td>BLOWING</td>
<td>EXIT XX</td>
<td>NEXT</td>
<td>SYRACUSE TO</td>
</tr>
<tr>
<td>CONDITIONS</td>
<td>SNOW</td>
<td>TO</td>
<td>XX MILES</td>
<td>WATERTOWN</td>
</tr>
<tr>
<td>AHEAD</td>
<td></td>
<td>EXIT YY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Alt Phase 1</th>
<th>Alt Phase 1</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>POOR</td>
<td>LIMITED</td>
<td>ICY</td>
<td>FREEZING</td>
<td>REDUCE</td>
</tr>
<tr>
<td>DRIVING</td>
<td>VISIBILITY</td>
<td>CONDITIONS</td>
<td>RAIN</td>
<td>SPEED</td>
</tr>
<tr>
<td>CONDITIONS</td>
<td>AHEAD</td>
<td>AHEAD</td>
<td>POSSIBLE</td>
<td></td>
</tr>
</tbody>
</table>
During major storms, the Region is responsible for maintaining situational awareness related to highway conditions. It’s CRITICAL that the direction to the motorists is in alignment with the intent of the message and that the messages are consistent across Regional, Agency, and State boundaries when necessary.

**Plowing Operations**

The following message may be used in key locations where plowing operations MAY be actively occurring.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE CAUTION</td>
<td>SLOW DOWN</td>
<td>SNOWPLOWS</td>
<td>PLOWS</td>
</tr>
<tr>
<td>NEAR</td>
<td>NEAR</td>
<td>TRAVEL</td>
<td>TRAVEL</td>
</tr>
<tr>
<td>PLOW TRUCKS</td>
<td>PLOW TRUCKS</td>
<td>SLOWER</td>
<td>AT 35 MPH</td>
</tr>
</tbody>
</table>

The following message may be used in key locations where the TMC is CERTAIN that plowing operations are actively occurring on that road.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLOWING</td>
<td>REDUCE</td>
</tr>
<tr>
<td>OPERATIONS</td>
<td>SPEED</td>
</tr>
<tr>
<td>IN-PROGRESS</td>
<td></td>
</tr>
</tbody>
</table>

*Do not display Plowing Operations messages continuously on any one sign for the duration of the storm as the message will quickly become stale and ineffective. Activation of these messages on VMS signs shall be random throughout the duration of the storm and in conjunction with actual plowing operations.*
Official Travel Bans and Emergency Declarations

In general, Regions will be forewarned during a storm that travel restrictions are imminent. As such, Travel Ban messages shall be approved by the Commissioner’s Office or the Main Office Traffic Safety & Mobility office.

There are times when conditions have deteriorated to the point that official travel restrictions or Travel Bans have been enacted by the Governor’s Office or other Emergency Management Officials. In these cases, it is important the messages accurately reflect these restrictions and that the VMS message be direct and succinct.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEVERE STORM</td>
<td>TRAVEL</td>
<td>NO</td>
<td>EMERGENCY</td>
</tr>
<tr>
<td>CONDITIONS</td>
<td>BAN</td>
<td>UNNECESSARY</td>
<td>TRAVEL</td>
</tr>
<tr>
<td>EXIST</td>
<td>IN EFFECT</td>
<td>TRAVEL</td>
<td>ONLY</td>
</tr>
</tbody>
</table>

During major storms, the Region is responsible for maintaining situational awareness related to highway conditions and the announced travel restrictions. It’s CRITICAL that the direction to the motorists is in alignment with the intent of the message coming from the Governor’s office.

For specific procedures on messaging for truck bans due to high winds, please see the Official Guidance on VMS Messaging for High Wind Warnings. For specific procedures on messaging for truck bans due to snow, please see the Official Guidance on VMS Messaging for Official Truck Bans.

Advisory Speed Messages

Advisory Speed messages shall only be posted at the direction of the Commissioner.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAVY</td>
<td>SEVERE STORM</td>
<td>SPEED</td>
</tr>
<tr>
<td>SNOW</td>
<td>CONDITIONS</td>
<td>LIMIT</td>
</tr>
<tr>
<td>AHEAD</td>
<td>AHEAD</td>
<td>XX MPH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEVERE STORM</td>
<td>WHITEOUT</td>
<td>SPEED</td>
</tr>
<tr>
<td>CONDITIONS</td>
<td>CONDITIONS</td>
<td>LIMIT</td>
</tr>
<tr>
<td>EXIST</td>
<td>AHEAD</td>
<td>XX MPH</td>
</tr>
</tbody>
</table>
APPENDIX K

Official Guidance on VMS Messaging for Official Truck Bans
In general, Regions should plan during a storm that truck restrictions may be imminent. As such, Truck Ban messages shall be approved by the Commissioner’s Office or the Main Office Traffic Safety & Mobility office.

There are times when road conditions have deteriorated to the point that an official truck restriction or truck ban needs to be enacted on a segment of highway. It is important that the VMS messages accurately reflect these restrictions and that the message be direct and succinct. Variations of the examples below may be used to highlight the details of the truck ban.

It is imperative that these messages be coordinated with neighboring Regions, States, and Agencies so motorists are given the same message across these boundaries. In addition, messages should be posted both near and far from the actual restricted area. The earlier a driver sees the message, the more likely they will be able to alter the route or timing of their trip.

When messaging for truck bans, be aware that there is a difference between a “truck”, an “empty truck”, and a “tandem truck”. It may be necessary to be specific when posting these messages to avoid confusion with the trucking community. Operators should use the terminology required for the ban. The messages below may be modified to align with the announced ban.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2*</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRUCK</td>
<td>TRUCKS</td>
<td>I-84 IN PA</td>
<td>NO</td>
<td>NO TRUCKS</td>
</tr>
<tr>
<td>BAN IN</td>
<td>PROHIBITED</td>
<td>TRUCK BAN</td>
<td>TRUCKS</td>
<td>EXITS</td>
</tr>
<tr>
<td>EFFECT</td>
<td>IN EFFECT</td>
<td>I-84</td>
<td>XX TO YY</td>
<td></td>
</tr>
</tbody>
</table>

*Route may be on the first line or last line, depending on what the Region wants to highlight. The message may also include direction. Ie – I-84 WB NO TRUCKS vs. NO TRUCKS I-84 WB.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRUCKS</td>
<td>TRUCKS / TRAILERS</td>
<td>USE</td>
<td>TRUCKS</td>
<td>TRUCK</td>
</tr>
<tr>
<td>BANNED</td>
<td>PROHIBITED</td>
<td>OTHER</td>
<td>MUST USE</td>
<td>BAN</td>
</tr>
<tr>
<td>I-84 WESTBOUND</td>
<td>ROUTES</td>
<td>ALT ROUTE</td>
<td>ENFORCED</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-86 &amp; I-90</td>
<td>TANDEM TRUCKS</td>
<td>NO TANDEM</td>
<td>EMPTY</td>
</tr>
<tr>
<td>PA TRUCK</td>
<td>PROHIBITED</td>
<td>OR EMPTY TRKS</td>
<td>TRUCK BAN</td>
</tr>
<tr>
<td>RESTRICTIONS</td>
<td>ON I-84</td>
<td>BEGINS AT 10PM</td>
<td>IN EFFECT</td>
</tr>
</tbody>
</table>
During major storms, the Region is responsible for maintaining situational awareness related to highway conditions and the announced truck restrictions. It’s CRITICAL that the direction to the motorists is in alignment with the intent of the message.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>HEAVY</td>
<td>EMPTY</td>
<td>TRUCKS</td>
</tr>
<tr>
<td>WINDS</td>
<td>SNOW</td>
<td>TRUCKS</td>
<td>MUST USE</td>
</tr>
<tr>
<td>AHEAD</td>
<td>PROHIBITED</td>
<td>ALT ROUTE</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX L

Official Guidance on VMS Messaging for High Wind Warnings
VMS Messaging for High Wind Warnings

Official Guidance

December 2018

In general, during a high wind event Regions should plan that truck restrictions may be imminent on bridge crossings and other areas that may be affected by high winds. As such, this guidance should be used in conjunction with the Official Truck Ban guidance. Truck Ban messages shall be approved by the Commissioner’s Office or the Main Office Traffic Safety & Mobility office and VMS messages should conform to the policy for Truck Ban Messaging.

There are times when certain atmospheric conditions, whether within a storm or not, will require the need to enact high wind VMS messaging. It is important that the messages accurately reflect these conditions and that the VMS message be direct and succinct. Variations of the examples below may be used to highlight the details of the high wind warning.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>REDUCE</td>
<td>ADJUST</td>
</tr>
<tr>
<td>WIND</td>
<td>SPEED</td>
<td>SPEED</td>
</tr>
<tr>
<td>WARNING</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPECT</td>
<td>TOMORROW</td>
<td>WEST</td>
</tr>
<tr>
<td>HIGH</td>
<td>3AM – 11PM</td>
<td>OF</td>
</tr>
<tr>
<td>WINDS</td>
<td></td>
<td>SYRACUSE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
<th>Alt Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKYWAY</td>
<td>EMPTY</td>
<td>TRUCKS</td>
<td>NO TRUCKS</td>
</tr>
<tr>
<td>WIND</td>
<td>TRUCKS USE</td>
<td>MUST USE</td>
<td>EXITS</td>
</tr>
<tr>
<td>WARNING</td>
<td>ALT ROUTE</td>
<td>ALT ROUTE</td>
<td>XX TO YY</td>
</tr>
</tbody>
</table>

During wind events, the Region is responsible for maintaining situational awareness related to highway conditions and any announced restrictions. It’s CRITICAL that the direction to the motorists is in alignment with the intent of the message.

December 2018
APPENDIX M

Official Guidance on VMS Messaging for Holiday Travel
VMS Messaging for Holiday Travel
Official Guidance
December 2018

In general, Regions should only message for holiday travel under extraordinary circumstances, such as when a heavy traffic holiday will be impacted by a special event, weather event, or other circumstance that would also have an impact to traffic under normal circumstances.

There are times when holiday travel will be impacted by other extraordinary events. These could be weather impacts, special events such as a US Open or Presidential visit, or simply the timing of the holiday with the weekend.

Pre-Travel Messages:
Pre-travel messages should be as specific as possible and should be displayed no more than two peak-travel periods prior to the holiday. This additional time allows the public to alter their travel arrangements. For example, if the holiday falls on a Friday and it is expected that the busiest travel day will be Thursday evening during a winter storm, pre-travel messages should be displayed Wednesday during the peak rush hours.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEEKEND</td>
<td>HEAVY TRAFFIC</td>
<td>PLAN TO</td>
<td>PLAN FOR</td>
</tr>
<tr>
<td>ROAD</td>
<td>AND SNOW</td>
<td>LEAVE</td>
<td>EXTRA</td>
</tr>
<tr>
<td>CLOSURES</td>
<td>EXPECTED</td>
<td>EARLY</td>
<td>TRAVEL TIME</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAVY TRAFFIC</td>
<td>HEAVY TRAFFIC</td>
<td>CONSIDER</td>
<td>EXPECT</td>
</tr>
<tr>
<td>EXPECTED</td>
<td>I-495</td>
<td>ALTERNATE</td>
<td>DELAYS</td>
</tr>
<tr>
<td>THURSDAY</td>
<td>TOMORROW</td>
<td>ROUTE</td>
<td></td>
</tr>
</tbody>
</table>

During the Peak Holiday Travel:
It is important that the messages accurately reflect actual travel and road conditions and that the VMS message be direct and succinct. TMC Operators shall use the guidance in the VMS Guidelines to determine the most appropriate messages to relay to motorists. An example of messaging for heavy traffic and delays is below.

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Alt Phase 1</th>
<th>Phase 2</th>
<th>Alt Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJOR</td>
<td>DELAYS</td>
<td>BE</td>
<td>USE</td>
</tr>
<tr>
<td>DELAYS</td>
<td>I-90</td>
<td>PREPARED</td>
<td>ALTERNATE</td>
</tr>
<tr>
<td>AHEAD</td>
<td>EXIT XX-YY</td>
<td>TO STOP</td>
<td>ROUTE</td>
</tr>
</tbody>
</table>

During peak travel periods, the Region is responsible for maintaining situational awareness related to highway conditions and any announced restrictions. It’s CRITICAL that the direction to the motorists is in alignment with the intent of the message.