Use of Variable Message Signs (VMS)  
UDOT 06C-23
Effective: December 1, 2005  
Revised: February 4, 2020

Purpose
To define the appropriate use of permanent and portable Variable Message Signs (VMS) on Utah Department of Transportation (Department) highways:

Policy
General Operation
1. Application – This policy applies to all VMS on roads under Department jurisdiction including permanent VMS, portable VMS placed by the Department or its contractors, portable vehicle-mounted VMS used by the Department Incident Management Team, and portable VMS placed by contractors operating in the Department right-of-way (ROW) by permit.

2. VMS Authorized by the Department – Authorized Department personnel and their approved contractors have responsibility for the operation of VMS on all roadways under Department jurisdiction. Only VMS approved by authorized Department personnel are permitted on roadways.

3. VMS Compatibility – Any permanent VMS deployed on Department ROW must be compatible with the Department’s Advanced Traffic Management System (ATMS) software suite in use at the Traffic Operations Center (TOC). Exceptions may be granted with approval from the Traffic Management Division (TMD) Traffic Operations Engineer to allow the purchase and deployment of VMS devices by Department partners. An approved Memorandum of Understanding (MOU) detailing exceptions granted and operational practices between the Department and partners is required.

4. Operation of Permanent VMS – The TOC is responsible for the operation of all permanent VMS on roads. Region offices may request VMS messaging and the TOC will support as possible. The TOC will review the priority of messaging, the availability of VMS devices, and message content to verify compliance with this policy. Special cases may be approved by the TMD Traffic Operations Engineer to cede primary operation of permanent VMS to “authorized users” based on MOUs approved by the TMD Traffic Operations Engineer. Authorized users will only be allowed to post messages from a pre-approved list of message sets. These lists must be approved before access to VMS is provided to non-TOC users.
5. **Emergency Operation of Permanent VMS** – The TOC may temporarily delegate responsibility for the operation of permanent VMS to Region personnel and Department of Public Safety personnel trained in VMS operation during emergencies or during hours that the TOC is not staffed.

6. **Portable VMS** – Region Directors are responsible for the operation of portable VMS in their respective Regions.

7. **Utah Manual on Uniform Traffic Control Devices** – Design, placement, operation, maintenance, and message content of all VMS, including devices capable of displaying full color messages, will conform to the current edition of the Utah Manual on Uniform Traffic Control Devices (MUTCD).

8. **Messages with Department VMS Guidelines and Procedures** – All messages posted on both portable and permanent VMS will be according to VMS Guidelines and Procedures adopted by the Department Traffic Engineering Panel.

9. **No Message is Warranted** – VMS will be in blank mode until specific conditions described below under “Acceptable Message Types” warrant their use.

10. **Department Partners and VMS Operations** – All requests for VMS messaging from non-Department entities must be approved by the TMD Traffic Operations Engineer. “Message sets” may be developed and submitted for approval by the TMD Traffic Operations Engineer, however. These message sets will be saved and activated as needed via a phone call to the Control Room by the non-Department entity. Message sets sent in for approval must be submitted at least five working days in advance to allow for review and construction.

   a. Only pre-approved message sets may be requested and posted.

   b. Specific dates and the duration of message set requests must be provided.

   c. The MOU with a Partner will include a provision for keeping the TOC notified about the most current conditions and will notify the TOC immediately of any need for a change in language.
Acceptable Message Types

11. **Traffic Incidents** – VMS may be used to warn motorists of unexpected incidents including traffic crashes, stalled vehicles, debris in the roadway, spilled loads, emergency roadwork, utility line breaks, or other similar conditions that affect safety and efficiency of travel.

12. **Construction and Maintenance Activities** – VMS may be used to warn motorists of current construction and maintenance activities. These may include road or ramp closures, lane reductions, speed reductions, lane shifts, shoulder work, flaggers ahead, detours, temporary maintenance work, or other similar conditions.

13. **Weather and Road Conditions** – VMS may be used to display specific information about adverse weather, environmental, or downstream roadway conditions that may impact driver visibility and safety. Messages should be restricted to conditions of which the driver may not be aware such as BLACK ICE POSSIBLE and should not be used to inform the driver of obvious conditions such as FOG when the fog also exists at the VMS location.

14. **Traffic Safety-related Warnings** – Messages such as REDUCE SPEED, USE CAUTION, or PREPARE TO STOP may be displayed when they are used to alert the motorist about specific conditions ahead. They should only be used in conjunction with a message that advises the motorist of the specific condition and its location. Traffic safety messages may be used for extended sections of highway when the condition applies over that section.

15. **Emergency Evacuation or Homeland Security** – VMS may be used to display messages regarding homeland security road closures, area closures, restrictions, evacuation routes, or similar information.

16. **Traffic Delays** – Specific congestion or delay information may be displayed when congestion is unusual or exceeds a minimum threshold established in the Department’s VMS Guidelines and Procedures. Delay times may be measured automatically using electronic sensors or estimated by TOC staff. The TOC staff will monitor conditions closely and update delay estimates as conditions change if delay times are estimated.

17. **Estimated Travel Time** – Travel time information may be displayed on VMS if travel times can be measured or calculated using the electronic sensor equipment on the roadway and if the information can be displayed and updated on the VMS automatically.
18. **Advance Notice of Construction** – Traffic-related information that provides advance notice of upcoming roadwork may be displayed but should be replaced by current information whenever applicable. Advance notification of new construction or road closures should be placed up to but not more than one week before the roadwork.

19. **Information on Alternate Routes** – Messages recommending specific alternate routes may be displayed on a VMS only when there is specific information indicating that the alternate provides or is likely to provide a preferred route for motorists.

20. **Advance Notice of Special Events** – Traffic-related information that provides advance notice of upcoming special events may be displayed only if the event will significantly affect travel by generating significant traffic impacts or by requiring street or highway closures.

21. **Traffic Information and Route Guidance for Special Events** – VMS may be used to direct motorists traveling to special events in the interest of facilitating safe and efficient traffic flow. Messages directing motorists to special events will conform to the requirements in Paragraph 31.

22. **HAR Messages on VMS** – VMS may be used to advise motorists of messages being broadcast with the Highway Advisory Radio (HAR) system in the area.

23. **Amber/Silver Alerts** – VMS messages may be displayed for Amber/Silver Alerts following procedures established in cooperation with the coordinating agency.

24. **Supplementary Regulatory Signing** – A VMS message containing regulatory information will only be used when it supplements static regulatory signs meeting the requirements of the Utah MUTCD and when ordinances or traffic engineering orders are in effect. Examples of regulatory messages are WORK ZONE SPEED LIMIT 55 MPH and CHAINS OR 4 WHEEL DRIVE REQUIRED.

25. **Messages for Other Agencies** – VMS may be used to display messages relating to major incidents, road conditions, and construction for other agencies or states.

26. **Test Messages** – Test messages may be displayed on VMS when necessary. Acceptable test messages should either state TEST, display a portion of the alphabet, a sequence of numbers, or a non-message test pattern.
Acceptable Message Types with Special Approvals

27. **Highway Safety-Related Public Service Announcements** – Messages designed to convey a public service announcement related to highway safety may be displayed on VMS under the following conditions:

   a. The Department receives a formal written request from another Governmental Agency or recognized Safety Organization.
   
   b. The safety campaign is part of a recognized national or statewide effort.
   
   c. The campaign is a multi-agency or multi-organization effort in which others will be participating visibly.
   
   d. The Department of Public Safety is supportive of the effort.
   
   e. The safety message will be displayed only for a short and fixed period of time such as Labor Day or Labor Day weekend.
   
   f. It is recognized that the safety message may at times be overridden by a higher priority message such as CRASH AHEAD or ROAD CLOSED AHEAD.
   
   g. Approval of the Director of Operations is required.

28. **Air Quality Public Service Announcements** – Messages designed to convey a public service announcement related to an imminent public health threat due to poor air quality may be displayed on permanent VMS under the following conditions:

   a. An air quality alert at the “red” (severe) level has been issued by the Utah Department of Environmental Quality, Division of Air Quality.
   
   b. The VMS is located within a county covered by the air quality alert.
   
   c. A maximum of two VMS per direction per route in a county will be used to display air quality alert messages.
   
   d. Advance air quality alert:
      1) The advance air quality alert message is displayed during the 24-hour period before the poor air quality day.
      
      2) An example of the advance air quality alert message is AIR QUALITY ALERT TOMORROW LIMIT DRIVING.
e. All messages related to traffic conditions or traffic safety will be considered to have a higher priority than air quality alert messages. Air quality alert messages will be overridden by higher priority traffic-related messages when the traffic-related messages are required such as travel time information.

f. Approval of the Director of Operations is required.

29. **Usage of Business or Private Entity Names** – Special non-advertising message content containing the usage of proper nouns or private entity business names requires preapproval by the Director of Operations. This approval will address concerns about potential negative impacts the usage of VMS may have to said businesses or entities. Content will not deviate from approved messaging.

30. **Other Deviations from Acceptable Message Types** – Any message request from an outside entity requesting a deviation from Utah MUTCD-compliant message types will require approval of the Director of Operations.

**Unacceptable Message Types**

31. **Advertising Messages** – Messages advertising any product, service, or event will not be displayed. Messages providing traffic information or route guidance for special events may be displayed but should be designed so company names, brand names, or advertising of the event is not embedded in the message. Messages that provide advanced notice of special events will not be used if the event will not generate significant traffic impacts or will not require road closures or detours.

32. **Non-Transportation-Related Public Service Announcements** – Messages designed to convey a public service announcement or increase public awareness (for example, telephone hotlines or safety campaigns) will not be displayed on VMS. Only a Deputy Director may grant exceptions to this policy.

33. **Unauthorized Regulatory Messages** – Messages that convey regulatory information will not be used unless static regulatory signs meeting the requirements of the Utah MUTCD are in place and appropriate ordinances or traffic engineering orders are in effect.
34. **Inaccurate, Vague, or Non-specific Messages** – Messages that do not convey specific information about actual road and traffic conditions facing motorists or which convey vague instructions will not be displayed. Examples of such messages are SLOW DOWN, CONGESTION AHEAD, EXPECT DELAYS, and USE ALT when no delays are present.

35. **Trivial or Non-Transportation-Related Messages** – Messages that do not fulfill a need, convey a clear simple meaning, and command respect of road users will not be displayed according to Section 1A.02 of the Utah MUTCD.

**Background**

VMS are an important part of the traveler information system. Portable VMS have been used for many years to advise of construction and maintenance activities while the first permanent VMS were installed in 1998 as part of the I-15 reconstruction. Construction and maintenance personnel are typically responsible for the operation of portable VMS on their respective projects.

The signs can furnish motorists with real-time information that advises them of a problem and in some cases, a suggested course of action. VMS are also used to improve motorist, road worker, and emergency response personnel safety, as well as to reduce traffic congestion and delay. VMS can also be used to manage traffic by displaying early warning, advisory, and alternative route messages.

Since the deployment of permanent VMS, they have become a critical part of the State’s traveler information system. The placement and the information presented on both portable and permanent VMS must be consistent with each other and compatible with static signs used on the roadway. VMS have been found to be very effective when operated on sound principles but their effectiveness is greatly reduced when they are not.

**Definitions**

**Incident** – Crashes, disabled vehicles, debris, utility line breaks, or anything affecting traffic flow that is not planned.

**Roadwork** – Construction, maintenance, or utility work on or near the roadway.

**Special Event** – Planned gatherings large enough to cause a traffic impact and generally not associated with standard daily traffic flow conditions.

**Variable Message Sign (VMS)** – Programmable traffic control devices that can usually display any combination of characters to present messages to motorists. These signs are either permanently installed above or on the side of the roadway or portable devices attached to a trailer or mounted directly on a truck and driven to a desired location.