

# **TRAFFIC AND SAFETY MANUAL**

## **Chapter 2 - Signing** **2F – Permanent Changeable Message Signs**

### **Guidelines**

Originally Issued: 12-16-05, Last Revised 12-16-05

A number of highway jurisdictions and agencies have a vested interest in the use of the permanent changeable message signs in Iowa and adjoining states, necessitating the use of general guidelines to be followed in the use of all CMSs in the state.

#### **Responsibility**

The Iowa DOT District Offices are responsible for maintenance and operation of the permanent changeable message signs as guided by the provisions of the Traffic and Safety Manual and in coordination with the other agencies involved with traffic and incident management of the freeways where the signs are located.

#### **Operation**

Authorized District personnel shall operate CMSs located in their respective districts. Only real-time information about incidents and roadwork, and about traffic, roadway, environmental, or pavement conditions that could have an effect on driver safety and traffic efficiency shall be displayed on the CMSs, with the exception that the following may occasionally be displayed: a) advance notification of roadwork requiring lane or ramp closures, b) advance notification of special events that will adversely affect travel either because of the added traffic generated or the requirement to close streets, or c) occasional messages associated with driver safety campaigns and AMBER alerts. Incidents include crashes, disabled vehicles, debris, and utility line breaks.

#### **Operation of CMSs By Law Enforcement Personnel**

Operation of CMSs can be arranged with a law enforcement agency provided that appropriate agreements are developed. Authorized law enforcement personnel may operate CMSs identified by the District for emergency or other situations as agreed to.

#### **Blank Signs**

CMSs will be in a blank mode unless a message is warranted by traffic, roadway, environmental, or pavement conditions, or advance notification of roadwork or special events. CMSs shall not be used to advise motorists of normal daily recurrent peak period traffic congestion conditions.

#### **Use of Dynamic Features**

Results of research indicate that the use of dynamic features on CMSs should not be used. More specifically, use of the following features should be avoided:

- Flashing an entire one-frame message
- Flashing one line of a one-frame message
- Alternating text on one line of a three-line CMS while keeping the other two lines of text the same

### **Use of Graphics and Symbols**

The use of graphics and symbols should be avoided.

### **Advance Notice Messages**

Displaying advance notice of roadwork, special events or other potential impacts to a roadway is acceptable. It is not acceptable to display advance notice of meetings or other events that will not significantly impact freeway operations.

### **Advance Notice of Road Work**

Traffic-related information that provides advance notice of upcoming roadwork may be displayed, but should be replaced by current information whenever applicable. The upcoming roadwork may be on a freeway that could possibly affect the drivers' trips (e.g., the same freeway as the CMS, downstream intersecting freeway, etc.). The advance notification should not be given more than six days prior to the roadwork. Calendar dates should not be used in the message.

### **Advance Notice of Special Events**

Traffic-related information that provides advance notice of upcoming special events that will adversely affect travel by generating major traffic or by requiring street or highway closures (e.g., parades, street auto races, etc.) may be displayed. The advance notification should not be given more than six days prior to the special event. Calendar dates should not be used in the message.

### **Special Event Traffic Management**

CMSs may be used to accommodate motorists traveling to special events when the anticipated attendance is 10,000 or more per day. The messages may be used to direct motorists from the primary route to an alternative route that will eventually lead to a parking area. Trailblazers shall be used on the alternative route to direct motorists to the special event parking areas. Traffic conditions on the primary route and alternative route must be monitored. Messages intended to elicit diversion shall only be displayed when there is a significant savings in travel time for the motorists destined to the event, or when the motorists are being directed to parking areas with available parking spaces. The message shall be blanked whenever the alternative route does not provide a significant travel time saving.

### **Display of Travel Times**

Travel time information may be displayed when travel times are lengthened due to congestion if travel times can be measured or calculated using the electronic sensor equipment on the freeway and in the TMC, and if the information can be displayed and updated on the CMS automatically by the system computers.

### **Traffic Diversion**

When incidents occur that do not require the full closure of the roadway and it is desirable to divert traffic from the freeway, CMS messages shall not divert motorists to specific alternative routes unless positive guidance is available along the alternative route in the form of: a) guide signs and/or trailblazers, or b) law enforcement or traffic control personnel positioned at critical locations along the alternative route to control and guide traffic. Furthermore, both of the following conditions must be met:

- The CMS operator has current and continuously-updated knowledge of the traffic conditions on the alternative route; and
- The alternative route will result in a significant savings in time for the diverted motorists.

“Soft” diversion messages (i.e., *USE OTHER ROUTES*) may be displayed when conditions warrant.

When incidents occur that require full closure of the roadway, messages giving specific preplanned diversion routes established by written agreements with the local transportation agency shall be displayed. Positive guidance shall be available along the alternative route.

### **Messages After Incident Is Removed**

The signing responsibilities do not end when the incident is removed from the freeway lanes because congestion may still exist on the freeway, particularly following a major incident. The objectives of messages at this time are to:

- Inform motorists that the incident has been removed
- Advise motorists that all lanes are open to traffic
- Advise motorists of the freeway congestion

It is important to inform motorists who have seen a previous CMS message or have received information via radio or other media of a major incident that the incident has been removed from the lanes and all lanes are open to traffic. This is important for drivers to make informed decisions.

### **Limits of CMS Influence For Incidents**

The following constitutes the policy for displaying incident messages on CMSs.

- Messages should be displayed for all verified major incidents (e.g., multi-vehicle crash affected several lanes, truck overturn, etc.) that occur on the freeway up to twenty miles downstream of the CMS. The message should include the location of the incident (or closure) and the number of lanes closed.
- Information concerning verified minor incidents and lane closures should be displayed for incidents occurring up to ten miles from the CMS, provided that information about the location and the number of lanes closed can also be given.
- Information concerning verified lane-blocking incidents that occur on an intersecting freeway may be displayed on CMSs that are located upstream of the interchange with that freeway depending on the location, severity and duration of the incident.
- CMSs located on freeways leading to other states may display messages concerning verified incidents on connecting freeways within adjoining states depending on the location, severity and duration of the incident.

### **Regulatory Speed Messages**

A CMS message can be displayed to supplement existing static speed limit signs. The CMS message alone is not enforceable and shall not be used in place of a static sign. However, the CMS can be used to display advisory speed limits without static advisory speed limit signs. For certain conditions such as in freeway work zones there is a need to lower the speed limit below the normal posted speed limit. CMSs may be used to emphasize the change in speed limit that has been established using actual regulatory speed limit signs in that section.

### **Adverse Weather, Environmental and Roadway Conditions**

CMSs may be used to display adverse weather, environmental, or roadway conditions downstream that may impact driver visibility and safety (e.g., fog, major snow storms, sand storms, icy roadway, high cross winds, broken pavement, etc.), or advise motorists of specific regulations due to the weather or roadway conditions. Messages, when used, are restricted to a specific location and a specific CMS. The roadway condition must be in the vicinity of the sign in use. General weather,

environmental, or roadway condition information (*ICY ROAD CONDITIONS AHEAD*) is not permitted.

By special arrangement with the National Weather Service it is permissible to display winter weather warnings when they are issued. The Lead Forecaster for the area involved is to make the determination and request that the appropriate sign(s) be activated in accordance with the National Weather Service in Des Moines internal Policy LPI 96-02.

### **Advertising**

Messages advertising any product, service, campaign or political party are prohibited. Messages for special events should be designed such that advertising is not embedded in the messages.

### **Public Service Announcements**

Messages designed to relay a public service announcement (ridesharing, enforcement actions, telephone hotlines, potential transit strike notices, etc.) are not permitted on CMSs, nor are messages designed to increase public awareness of a specific topic not associated with traffic or transportation.

### **Driver Safety Campaigns**

Messages related to traffic or driver safety issues shall be displayed only as a supplement to local or statewide traffic or driver safety media campaigns on the same topic. The messages shall not be displayed in urban areas during the peak periods, and the total duration of the display should not exceed eight hours per day nor more than five days per month at any permanent CMS location.

### **Display of Amber Alert Messages**

The AMBER (America's Missing: Broadcast Emergency Response) Plan is a voluntary program through which emergency alerts are issued to notify the public about abductions of children. Only credible real-time information, where it is crucial to the safety of the victim to disseminate the information to the public in the near term, will be displayed on the CMS signs. In the Iowa Plan, Law Enforcement activates an Amber Alert when circumstances meet the following criteria:

- Law enforcement confirms a child has been abducted.
- The child is under the age of 18.
- Law enforcement believes the circumstances surrounding the abduction indicate that the child is in danger of serious bodily harm or death.
- There is enough descriptive information about the child, abductor and/or suspect's vehicle to believe an immediate broadcast alert will help.

When an AMBER Alert is issued, the Iowa State Patrol Communications Center in Des Moines will activate all the permanent changeable message signs or call Iowa DOT Maintenance staff to do so. The alert shall be displayed for a period of five hours unless the time is extended or terminated by the Iowa State Patrol.

Display of the AMBER Alert message on a particular sign should be discontinued if it is creating an adverse traffic impact such as queues, markedly slowing of traffic, etc.

### **Displaying Messages For Other Agencies**

CMSs may be used to display messages relating to major incidents and major construction for other agencies including adjoining states and cities. The priority for displaying messages shall remain in the control of the Iowa DOT. If another agency's message is preempted by the Iowa DOT for higher priority needs, the Iowa DOT shall notify the other agency.

### **Test Messages**

It is sometimes necessary to display messages on a CMS to assure correct operations, to “burn-in” a new sign, or for special studies. Acceptable test messages should either state TEST-MESSAGE or SIGN UNDER TEST. A display of a portion of the alphabet, a sequence of numbers, or a non-message test pattern such as moving columns or rows may be used if required to determine proper sign operation.

---

**Document Revision History: 00-00-00**