



6-2-55 Portable Changeable Message Sign Use in Construction & Maintenance Projects December 2022

PURPOSE

The MUTCD section 6F.60 provides standards and options for the usage of Portable Changeable Message Signs (PCMS). This policy provides requirements and guidance on the proper use of PCMS in work zones on state highways.

See [TEOpS 17-2-1](#), Portable Changeable Message Signs (PCMS) Policies & Procedures, for information regarding procurement, use of PCMS for special events, adverse weather, and other non-work zone related events, sign control, and training.

APPLICATIONS

Since they are dynamic signs, PCMS must only be used to display real-time or changing traffic condition or traffic control information. They *may* also be used provide advance notice prior to projects or events expected to cause congestion or that will require drivers to use alternate routes.

PCMS *should not* be used to replace static warning or regulatory signs; they *may* be considered as a supplemental device to a required static sign. In the case of a ramp or lane closure, the PCMS would supplement the static warning signs informing motorists of the closure.

Nonstandard words such as DANGER, HAZARDOUS, or CAUTION **shall not** be used. These words do not contribute any information and *may* overly concern drivers as they approach the work zone.

PCMS **shall not** be used to display generic safety messages or any other messages not necessary for specific driver action at the site. Examples of generic messages not to be used are BUCKLE UP, WELCOME TO WISCONSIN, or DRIVE SAFELY. Use of these types of generic messages tends to lead to motorist disregard of critical messages and unnecessarily distracts driver attention from the roadway.

Improvement/Maintenance Projects

For improvement projects, designers must include a PCMS message plan with the Temporary Traffic Control Plans. PCMS *may* be include in an improvement project for the following reasons:

1. Provide up to 7 days advance notice to drivers of closures. These signs *should* be provided by the contractor, but when contract timing is an impediment, they *may* be provided by the department or county,
2. Advise travelers of alternate routes around construction,
3. Supplement static sign messages for changes in roadway alignment for up to 7 days,
4. Advise drivers of a change in speed,
5. On Pilot Cars to advise traffic to follow them. This is up to the contractor to used and does not need to be specified in the plans,
6. Use in smart work zone systems for queue warning, dynamic late merge, travel time information, truck entering warning.

When PCMS are used as part of a smart work zone system the costs are normally included in the cost of the system and do not need to be a separate bid item.

Do not include PCMS on improvement projects solely for the use of incident management. Consider smart work zone systems to reduce the potential of an incident instead. PCMS that are included on a project for other reason with the exception of a smart work zone, *may* be used for incident management. Primarily consider PCMS that are on freeway and expressway projects to have PCMS with communications.

All messages displayed must be preapproved by the project engineer. Any subsequent changes to messages due to changing traffic conditions or construction operations **shall** also require approval from the project engineer, except during off-hours incidents or emergencies when the project engineer is not reachable. In general, improvement projects *should* provide for project-specific contractor supply of desired portable work zone management systems such as PCMS, subject to compliance with JamLogic or other standardized

communications interface standards. Accessibility and operation control by the TMC *should* be accommodated, but not committed without their involvement and concurrence. When communications with the TMC is desired include the bid item (Item 643.1051, Traffic Control Signs PCMS with Cellular Communications) with the contract.

The department reserves the right to use/deploy signs from its inventory on an improvement project to improve safety and optimize the operational efficiency of a construction work zone. Contractor-provided signs *should* be used for aforementioned purposes if they can be made available and deployed expeditiously and cost-effectively. The department also reserves the right to remove department owned signs deployed to improvement projects as needed for incident response or higher priorities elsewhere.

Signs owned by the department and counties **shall** be used for the purposes of temporary traffic control for maintenance work, incident management, and adverse weather road condition advisories.

A PCMS that is used to simulate an Arrow Board **shall** only be used to indicate a lane closure and must meet all the visibility requirements of an Arrow Board in the MUTCD section 6F.61. PCMS messages shall not mix arrows and words on either a single frame or the same operation.

DEVICE OWNERSHIP

Signs for highway improvement projects **shall** be supplied and maintained by the contractor as part of the contract similar to flashing arrow boards, drums, and barricades. The department would not assume any ownership of these signs. There is to be no additional state-owned PCMS purchased by regions through improvement projects or otherwise, including implementation in smart work zone systems. If it proves absolutely necessary to procure new WisDOT-owned equipment, BTO will coordinate any procurement of this equipment and provide it for use by regions as needed.

See [TEOpS 17-2-1](#) for provisions on the purchase of PCMS for highway maintenance work and other uses.

MAINTENANCE

A memorandum of understanding (MOU) **shall** be developed for any county highway department operating state-owned PCMS on the state highway system. A sample MOU is included in [TEOpS 17-2-1](#).

For state- or county-supplied signs, arrangements *should* be made using state or county forces to maintain the signs while in use. For newly purchased signs, a warranty period is usually provided, requiring the supplier to repair any failures or breakdowns of the sign. When the county performs maintenance work on state-owned signs, charge project number 00XX-01-07 (non-interstate) or 00XX-01-08 (interstate), activity code 032. When the county provides county owned PCMS, all maintenance responsibility rests with the county and is covered under the rental rate.

On an improvement contract, the maintenance is included in the changeable message sign bid item in the contract (Item 643.1050 Traffic Control Signs PCMS). The contractor would be required to check the sign at regular intervals.

PCMS USAGE

For PCMS placed on the STH, the PCMS **shall** either be:

1. Owned and placed by WisDOT
2. Owned and placed by contractors under contract with WisDOT
3. Owned, rented, or borrowed and placed by county highway departments under contract or permit with WisDOT.

County sheriff's departments and other local agencies **shall** work with the county highway departments to place the signs and display proper messages consistent with WisDOT policy. This includes any PCMS purchased by a county sheriff's department and other local agencies through funds received from the Bureau of Transportation Safety (BOTS).

ACCEPTABLE MESSAGES FOR WORK ZONES

The signs are generally capable of sequencing up to six frames. However, for driver comprehension, messages **shall** be limited to two frames (see MUTCD Section 6F.60). Blank or other filler frames between the two frames of text **shall not** be used. It is desirable for the driver to be able to read the entire message sequence twice as they pass by the sign. For an interstate highway application, the total viewing time is about seven seconds. Each frame is usually displayed for 2.0 seconds or less. Using more than two frames makes it difficult for drivers to read the entire message sequence twice. Do not flash any part of a message.

It is recommended that the first frame describe the traffic condition or problem ahead, which the motorist *may* encounter. The second frame would be used to advise the driver of an appropriate action. Examples are:

1st Frame
ROAD
CLOSED
2 MILES

2nd Frame
USE
EXIT
#394

See the message list that follows for more examples.

MESSAGE EXAMPLES

EVENT	PANEL 1	PANEL 2	PANEL 1 Example	PANEL 2 Example	Duration	Reference
Project Prewarn (Long term)	ROAD WORK BEGINS	XXXXDAY XX/XX	ROAD WORK BEGINS	MONDAY 4/10	1 week prior	
Road Closure Prewarn (Long term)	ROAD TO CLOSE	XXXXDAY XX/XX	ROAD TO CLOSE	TUESDAY 10/8	1 week prior	L28
Freeway Closure Prewarn(Overnight)	FREEWAY TO CLOSE	XXXXDAY XXPM- XXAM	FREEWAY TO CLOSE	WED 11PM-9AM	3 days prior	
Bridge Closure Prewarn(Long term)	BRIDGE CLOSED BEGINS	XXXXDAY XX/XX	BRIDGE CLOSED BEGINS	THURS 6/1	1 week prior	
Rolling Closures Prewarn(Overnight)	ROLLING CLOSURES	XXXXDAY XXPM- XXAM	ROLLING CLOSURES	FRIDAY 11PM-4AM	3 days prior	
Ramp Closure Prewarn (Long term)	RAMP CLOSED BEGINS	XXXXDAY XX/XX	RAMP CLOSED BEGINS	SAT 9/12	1 week prior	
Ramp Closure (Overnight)	RAMP TO CLOSE	XXXXDAY XXPM- XXAM	RAMP TO CLOSE	SUNDAY 8PM-6AM	3 days prior	L67, L68, 15c2 15D16, 15d49
System Ramp Closed	HWY XX RAMP CLOSED	USE ALT ROUTE	HWY 67 RAMP CLOSED	USE ALT ROUTE	During work	15D49
Moving Work	MOVING LANE CLOSURES	NEXT XX MILES	MOVING LANE CLOSURES	NEXT 8 MILES	During work	L37, L45, L47, 15d43
Bridge Deck Curing	BRIDGE DECK CURING	DRIPPING WATER				
Concrete Repair	CONCRETE CURING	LANE REOPENS XX/XX	CONCRETE CURING	LANE REOPENS 7/3	During work	
Shoulder work	SHOULDER WORK AHEAD	NEXT XX MILES	SHOULDER WORK AHEAD	NEXT 10 MILES	During work	L7
2-way Left Turn Lane Closure	CENTER LANE CLOSED	NEXT XX MILES	CENTER LANE CLOSED	NEXT 1/4 MILE	DURING WORK	L32
New Traffic Pattern	NEW TRAFFIC PATTERN	LANES SHIFT (LEFT/RIGHT)	NEW TRAFFIC PATTERN	LANES SHIFT LEFT	Up to 1 week after	
New Traffic Pattern	NEW TRAFFIC PATTERN	LANES NARROW			Up to 1 week after	
New Traffic Pattern	NEW TRAFFIC PATTERN	AHEAD XX MILES	NEW TRAFFIC PATTERN	AHEAD 3 MILES	During work	L36
New Traffic Signal	NEW TRAFFIC SIGNAL	BE PREPARED TO STOP			Up to 2 weeks after	
New Stop Sign	NEW STOP SIGN	STOP AHEAD			Up to 2 weeks after	
Straddle Rumble Strips	LANE SHIFT (LEFT/RIGHT)	STRADDLE RUMBLE STRIPS	LANE SHIFT RIGHT	STRADDLE RUMBLE STRIPS	Up to 2 weeks after	
Lane Closures (Overnight)	NIGHTLY LANE CLOSURES	BEGIN XXXXDAY XXPM-XAM	NIGHTLY LANE CLOSURES	BEGIN MONDAY 8PM-7AM	1 week prior	

Lane Closures (Weekly)	WEEKLY LANE CLOSURES	BEGINS XXXXDAY XX/XX	WEEKLY LANE CLOSURES	BEGINS SUNDAY 5/19	1 week prior	
Lane Closure	(LEFT/RIGHT) LANE CLOSED	AHEAD XX MILES	RIGHT LANE CLOSED	AHEAD 2 MILES	During work	L35, L38, L39, L41
Freeway Closure	FREEWAY CLOSED	EXIT AHEAD			During work	15d42
Roundabout Flagging	ONE LANE ROAD AHEAD	BE PREPARED TO STOP			During work	L82
Night Flagging	FLAGGER AHEAD	BE PREPARED TO STOP			During night work only	
Multilane Closure	2 (LEFT/RIGHT) LANES CLOSED	AHEAD XX MILES	2 RIGHT LANES CLOSED	AHEAD 4 MILES	During work	L54
Oversize Vehicles	OVERSIZE TRUCKS	MUST EXIT			During work	
Ramp Closed	RAMP CLOSED AHEAD				During work	L48, L49, L50
Detour (Overnight)	HWY XX (DIRECTION) CLOSED	USE (ROUTE) XXX	HWY 60 EAST CLOSED	USE HWY P SOUTH	During work	
Detour Routing (Overnight)	HWY XX DETOUR TRAFFIC	USE (ROUTE)	HWY 60 DETOUR TRAFFIC	USE SHERMAN RD EB	During work	
End Detour (Overnight)	HWY XX DETOUR END	HWY XX AHEAD	HWY 60 DETOUR END	HWY 60 AHEAD	During work	
Dynamic Late Merge #1	STOPPED TRAFFIC AHEAD	USE BOTH LANES			During speeds 0 to 39 mph	15d12c
Dynamic Late Merge #2	STAY IN LANE	DO NOT MERGE			During speeds 0 to 39 mph	15d12c
Dynamic Late Merge #3	MERGE HERE	TAKE TURNS			During speeds 0 to 39 mph	15d12c
Queue Warning System	STOPPED TRAFFIC AHEAD	EXPECT DELAYS			During speeds 0 to 19 mph	15d12e
Queue Warning System	SLOW TRAFFIC AHEAD	PREPARE TO STOP			During speeds 20 to 39 mph	15d12e

When creating messages for state or county highways, it is recommended that the abbreviation HWY is used. For interstates either I-XX or HWY XX maybe used.

The Reference column lists either the Standard Detail Drawing or the Work Zone Field Manual Layout number the message is currently used on.