



Guidelines



on Improving
Work Zone Safety
Through
Public Information
and
Traveler Information

This document summarizes available guidance on public information and traveler (or motorist) information. Agencies are encouraged to consider these two types of traffic control measures as required by Subpart K and as part of an overall transportation management plan (TMP) that must be developed and implemented for all significant projects as required by 23 CFR 630 Subpart J. The document describes effective strategies and techniques that can be used to implement these control measures and offers recommended practices.

This document is organized into the following sections:

- Program-Level and Project-Level Public Information
 - Table 1. Methods for Disseminating Program-Level and Project-Level Public Information
- Traveler Information
 - Table 2. Methods for Disseminating Traveler Information
- Additional Portable Changeable Message Sign (PCMS) Safety Considerations
 - Table 3. PCMS Message Design Factors
- Examples of Good Practices
 - Texas Department of Transportation PCMS Guidance
 - Minnesota Department of Transportation Traveler Information System for Work Zone Access/Egress Locations
 - Arizona Department of Transportation Use of Social Media
 - Missouri Department of Transportation Use of Social Media

Refer to <http://www.workzonesafety.org> for a copy of this document.



Guidelines on Improving Work Zone Safety Through Public Information and Traveler Information

Background

The national *Manual on Uniform Traffic Control Devices* (MUTCD) contains standards and guidance on the design and application of signs, channelizing devices, and other traffic control devices required to guide travelers effectively in and through work zones. Although the MUTCD requirements help ensure that work zones are designed and operated in a safe manner, some work zones present unique safety challenges that require additional vigilance and efforts by agencies. Therefore, federal regulations (23 CFR 630 Subpart K) encourage state highway agencies to give appropriate consideration to the use of other traffic control measures that can help reduce work zone crashes and improve worker and traveler safety.

Public information and traveler (or motorist) information are two types of traffic control measures that agencies are encouraged to consider as required by Subpart K. Although the two measures are similar, a distinction has been made for purposes of this document. Traveler information strategies focus on disseminating time-dependent information, whereas public information strategies strive to improve public awareness and preparedness in accommodating work zones in general or a specific high-profile work zone in particular.

Agencies are required to consider public information and traveler information needs as part of an overall transportation management plan (TMP) that must be developed and implemented for all significant projects (as required by 23 CFR 630 Subpart J). Guidance has been developed on the use of public information and outreach strategies in work zones (See resources at the end of this document.). The provision of public information and traveler information helps improve work zone safety and mobility by:

- reducing vehicle exposure in work zones by encouraging travelers to use alternative routes and travel modes;
- reducing traffic congestion (which leads to a reduction of rear-end and sideswipe crashes) in work zones by diverting motorists to alternate routes, to times when traffic demands are lower, or to alternative travel modes; and
- increasing driver awareness and expectations of overall delays (e.g., 10 Min Delay Ahead) or hazardous conditions in work zones (e.g., Uneven Pavement), which reduces driver frustration and road rage-type aggression and may also lead to safer driving behaviors.

Program-Level and Project-Level Public Information

Public information consists of both program-level strategies and project-level strategies. Program-level public information strategies raise general awareness regarding motorist and worker safety issues in a region and encourage increased vigilance at all times while driving through work zones. The National Work Zone Awareness Week that occurs each year is an example of a general program-level public information initiative. Many state agencies have also developed their own campaigns, such as the Slow for the Cone Zone program in California. Disseminating information about recently passed work zone safety laws in a state is yet another example (See Table 1, page 2.).



The purpose of project-level public information is to raise awareness of the special safety and mobility challenges that will be faced in a specific work zone as well as to provide suggestions on how to cope with those challenges. Project-level strategies can target a variety of audiences (e.g., commuters, freight operators, business owners, local residents, emergency response agencies, the media, etc.) and provide a wide range of information (e.g., general locations and schedule of construction, available alternative routes in the corridor, transit routes and schedules in the corridor, project hotlines to call for problems or complaints, etc.). As Table 1 illustrates, a variety of mechanisms are commonly used to disseminate work zone-related public information.

The decision about which mechanism(s) to use for a given program or specific project depends on the target audience(s), message(s) to be communicated, available budget, existing agency resources and expertise with these strategies, and other factors.

Table 1. Methods for Disseminating Program-Level and Project-Level Public Information

Strategies	Benefits	Implementation Factors to Consider
Project web site	<ul style="list-style-type: none"> • Can be fairly easy to update • Can control content and timing of information presented 	<ul style="list-style-type: none"> • Requires significant effort to inform the public of website's existence • Very high demands for information can overload the computer system
Smart phone and smart tablet applications (apps)	<ul style="list-style-type: none"> • Easy to distribute and update • Relatively inexpensive 	<ul style="list-style-type: none"> • Outreach limited to those who download and use the app • Appropriate warnings not to access while driving should be included
Press releases	<ul style="list-style-type: none"> • Able to reach a large audience relatively inexpensively 	<ul style="list-style-type: none"> • Message may only reach local motorists • Media ultimately decides if information will be disseminated
Brochures and mailers	<ul style="list-style-type: none"> • Easy to distribute • Can be a fairly low-cost activity although printing and postage costs can be significant for very large distributions 	<ul style="list-style-type: none"> • Information must be presented in an informative, but interesting, manner to attract attention • Information is static • Often only possible to target local travelers
Paid advertisements (TV or radio)	<ul style="list-style-type: none"> • Can reach large numbers of local travelers • Can control content and timing of information presented 	<ul style="list-style-type: none"> • Costly to implement • May not reach long-distance, out-of-town travelers
Giveaways (e.g., bumper stickers)	<ul style="list-style-type: none"> • Can create positive relations with the target audience 	<ul style="list-style-type: none"> • Works best when the project or work zone issue has been "branded"
Legislative briefings	<ul style="list-style-type: none"> • Important for maintaining political goodwill 	<ul style="list-style-type: none"> • Information provided must be kept very brief and to the point
Features in agency magazine	<ul style="list-style-type: none"> • Allows for more in-depth presentation of information 	<ul style="list-style-type: none"> • Likely to reach only a limited audience
Social media	<ul style="list-style-type: none"> • Low cost • Easy to distribute 	<ul style="list-style-type: none"> • May not reach entire target audience (i.e., those without access to the internet or social media)

Continued on page 3.

Table 1. Methods for Disseminating Program-Level and Project-Level Public Information (Continued)

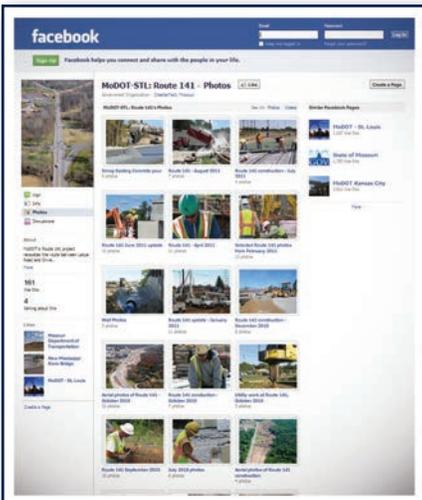
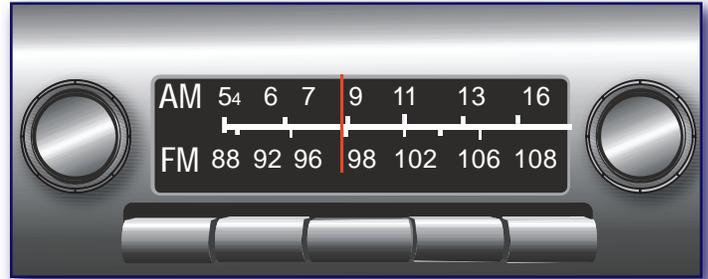
Strategies	Benefits	Implementation Factors to Consider
Information centers	<ul style="list-style-type: none"> • Can provide in-depth information • Easy to distribute • Can be a fairly low-cost activity 	<ul style="list-style-type: none"> • Dissemination mostly limited to non-local travelers who stop for information
Public meetings/events	<ul style="list-style-type: none"> • Good exposure for the agency • Opportunity to raise credibility with the public • Give the public a chance to voice concerns 	<ul style="list-style-type: none"> • Must be on guard against making “empty promises” • Can be difficult to achieve good attendance levels
Community task forces	<ul style="list-style-type: none"> • Good exposure for the agency • Good for direct local-level interactions 	<ul style="list-style-type: none"> • Must be careful not to provide “empty promises”
Billboards	<ul style="list-style-type: none"> • Provide information directly to travelers influenced by a work zone • Can direct travelers to other information sources 	<ul style="list-style-type: none"> • Message can be lost in the overall sign clutter
Press kits	<ul style="list-style-type: none"> • Aid media in putting together an informative news story about the project or event 	<ul style="list-style-type: none"> • Actual information disseminated is not under agency controls
Newsletters	<ul style="list-style-type: none"> • Allow more in-depth presentation of information • Can cover several topic areas at once 	<ul style="list-style-type: none"> • Important to target correct audience • Message must be presented in an informative, but interesting, manner
Project model displays	<ul style="list-style-type: none"> • Provide an excellent way to communicate visually with the public 	<ul style="list-style-type: none"> • Time consuming to create • Can be challenging to move to different venues for presentations • Will generally have limited exposure to most travelers

Traveler Information

The intent of providing traveler information is to increase traveler awareness and use of time-dependent information about work zone conditions to affect motorists’ choices regarding which route to take, departure time, and mode of transportation as well as to improve driver awareness and behavior. Although this information is often available in real-time, motorists should not be encouraged to access the information while driving to avoid being distracted. Instead, access to real-time information should be encouraged during pre-trip planning whenever possible.

Methods of disseminating traveler information include:

- dynamic message signs (DMSs) and portable changeable message signs (PCMSs);
- highway advisory radio stations;
- news media outlets;
- 511 traveler information recordings;
- real-time access to alerts and travel times via project websites;
- email alerts;
- text messages, and
- social media sites (Facebook©, Twitter™).



Examples of the types of time-dependent information that can be provided via these methods include:

- advance notice of when and where lanes will be temporarily closed;
- advance notice of major changes and traffic switches that will alter the travel path through the work zone;
- advance notice of changes to transit service;
- current travel times, delays, and speeds through the work zone or on alternate routes;
- location and length of queues that have developed;
- current lane closure locations (and lane that is closed);
- current ramp or intersection closures;
- current incident locations (and lanes that are blocked); and
- warnings when and where construction vehicles are entering or exiting the travel lanes.



Although there are many ways to get real-time information to the public, the key to influencing the public effectively is to ensure that the information is credible. Credible real-time information must be accurate, relevant, timely, and desired by the traveler.

Table 2 on page 5 summarizes the benefits and implementation

factors to consider in each of the traveler information dissemination strategies listed above.

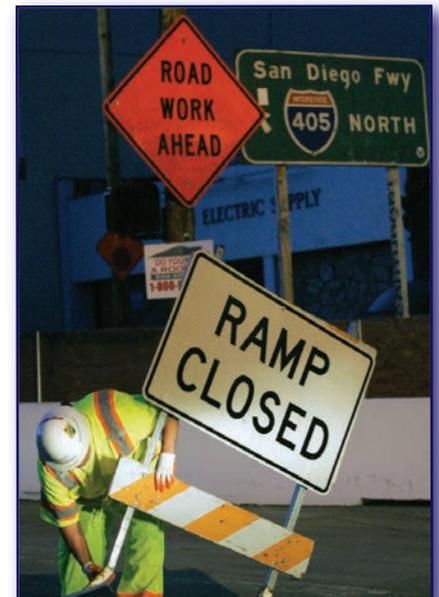


Table 2. Methods for Disseminating Traveler Information

Strategies	Benefits	Implementation Factors to Consider
Dynamic Message Signs/Portable Changeable Message Signs	<ul style="list-style-type: none"> • Can provide real-time information directly to driver while en route • Highly valued by motorists 	<ul style="list-style-type: none"> • Amount of information that can be disseminated is limited • Proper message design is critical
Highway Advisory Radio	<ul style="list-style-type: none"> • Can provide real-time information directly to driver while en route • Can provide more information than is possible with DMSs/PCMSs 	<ul style="list-style-type: none"> • Proper message design is critical” • Requires motorists to seek out information
Media Alerts	<ul style="list-style-type: none"> • Easy to distribute • Low-cost activity 	<ul style="list-style-type: none"> • May only reach local travelers • Agency does not have total control over information presented
511 Traveler Information Telephone	<ul style="list-style-type: none"> • Allows information to be accessed whenever it is needed • Can allow feedback by travelers to be recorded if desired 	<ul style="list-style-type: none"> • Audience must be informed of the system’s existence • System is not available in all areas
Traffic Updates to GPS Navigational Devices	<ul style="list-style-type: none"> • Can provide information directly to driver 	<ul style="list-style-type: none"> • Service is not available in all areas • Will reach only those travelers who subscribe to service
Project Website	<ul style="list-style-type: none"> • Easy way to provide current conditions to those planning travel • Mobile access via smartphone applications 	<ul style="list-style-type: none"> • May not reach entire target audience (i.e., those without access to the internet)
Real-Time Traffic Information Through Public Website (e.g., Google Map)	<ul style="list-style-type: none"> • Easy to distribute • Low cost 	<ul style="list-style-type: none"> • May not be accessed by entire target audience • Warning not to access while driving should be included
Email Alerts	<ul style="list-style-type: none"> • Very low cost • Easy to distribute 	<ul style="list-style-type: none"> • Requires audience to sign up to receive information, or for the agency to seek out email addresses • Criteria must be established as to when alerts will be sent
Text Messages	<ul style="list-style-type: none"> • Very low cost • Easy to distribute 	<ul style="list-style-type: none"> • Amount of information that can be disseminated is limited
Social Media	<ul style="list-style-type: none"> • Low cost • Easy to distribute 	<ul style="list-style-type: none"> • May not reach entire target audience (i.e., those without access to the internet or social media)

As with the public information strategies, the choice of which method(s) to employ for traveler information depends heavily on the target audience(s), information to be conveyed, existing infrastructure, past experiences and expertise with any of the methods, agency preferences, and project and site characteristics.

Additional PCMS Safety Considerations

PCMSs are commonly used in work zones to convey real-time information to drivers, as well as to call additional attention to hazards identified by static warning signs. A PCMS draws the attention of the motorist; however, this effect can be diminished if the device is overused. The PCMS cannot replace any of the static signing detailed in the MUTCD, and should not be used if standard traffic control devices adequately provide the information the motorist needs to travel safely. In the extreme, the misuse of PCMSs can actually degrade work zone safety.

For PCMS messages to be valuable to drivers, five message design factors must be properly addressed for each sign used. These are summarized in Table 3 below.

Table 3. PCMS Message Design Factors

Factor	Description	Guidance
Content	Type of information displayed	The information should answer these driver questions: <ul style="list-style-type: none"> • What are the conditions or hazards ahead? • Where are the conditions/hazards located? • What should I do?
Load	Number of phrases (or units of information) in a message	Maximum of four units of information (or phrases)
Length	Number of words and panels	Maximum of two phases Maximum of three lines (of eight characters each) per phase
Character Size	Height, width, and stroke width of characters	Speed > 45 mph = 18 inch height minimum Speed ≤ 45 mph = 12 inch height minimum
Format	Order and arrangement of phrases	Only one unit of information per line Each phase should be understood alone

One of the most common mistakes made by agencies and highway contractors is to present too much information on PCMSs. As indicated in the MUTCD, no more than two phases should be displayed on a PCMS. Three-or-more phase messages take too long to read, which causes drivers to slow down and can lead to rear-end crashes and/or vehicle intrusions into the work zone as vehicles swerve to avoid slower-moving traffic. If more information must be presented than can fit onto a two-phase PCMS message, additional PCMSs must be used. Multiple PCMSs must be spaced at least 800 feet apart, and should not be placed where they compete with static signs or other features that demand immediate driver attention.

When PCMS are used to improve work zone safety, it is important that the signs themselves not be a hazard. Whenever possible, PCMS should be installed behind guardrail or concrete barrier, making sure that the

barrier or guardrail does not block the view of the sign message. If guardrail or barrier protection is not appropriate, the sign should be delineated with channelizing devices to maximize visibility of the trailer at night. If the PCMS is not being used, it should be moved out of the roadway clear zone.

Examples of Good Practice

Texas Department of Transportation PCMS Guidance

One way that agencies can help ensure that PCMS messages are appropriately designed and displayed in work zones is to incorporate basic PCMS message guidance into work zone traffic control standards. As an example, the Texas Department of Transportation developed a field guide to basic PCMS operation and typical messages. This guidance was ultimately incorporated into that agency's traffic control plan standard sheets Barricade and Construction Standard BC(6)-07. The incorporation of the guidelines into the agency's standard drawings ensures that it becomes a part of the contract documents that are readily available to field personnel who typically make decisions about what messages to put on the signs and how those messages should be formatted. (See the Texas DOT examples on pages 8 and 9.)

Minnesota Department of Transportation Traveler Information System for Work Zone Access/Egress Locations

The Minnesota Department of Transportation established guidelines on the use of work zone intelligent transportation systems (ITS) on projects under its jurisdiction. One of the more innovative applications outlined is the use of real-time warnings of construction vehicles entering and exiting the work space. By providing advance information of these locations to motorists, it is hoped that the frequency of collisions between the public and construction vehicles is reduced. In addition, the system is designed to reduce the potential of motorists blindly following a construction vehicle turning into a work space. Examples of how the technology is deployed and used are provided in the figures that follow. (See the Minnesota DOT examples on pages 10 and 11.) To be effective, these systems must be highly reliable and accurate to develop credibility with the motoring public over time. Training and monitoring of truck drivers on the proper activation and use of the system should occur on a regular basis throughout the project.

Arizona Department of Transportation Use of Social Media

Recognizing the growth in social media and networking, the Arizona Department of Transportation used Facebook[®] and Twitter[™] as mechanisms for disseminating information to the public on various projects, including the reconstruction of US 93. (See the Arizona DOT example on page 12.)

Missouri Department of Transportation Use of Social Media

The Missouri Department of Transportation developed a public information campaign for the Route 141 Improvement Project that used many new technologies and social media outlets as a means of providing current information about the project to the public. The newer technologies included:

- a project-specific website;
- a project-specific Facebook[®] page; and
- a blog that included an opportunity for the public to comment on the project.

(See the Missouri DOT examples on pages 13 and 14.)

ACCEPTABLE PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

Application Guidelines	Phase 1: Problem Lists																																										
	Road/Lane/Ramp Closure List	Other Problem List	Other Problem List																																								
<ul style="list-style-type: none"> ▪ Only 1 or 2 phases are to be used on a PCMS ▪ The 1st phase (or both) should be selected from the <i>Road/Lane/Ramp Closure List</i> and the <i>Other Problem List</i> (front of this sheet) ▪ A 2nd phase can be selected from the <i>Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists</i> (back of this sheet) ▪ A Location Phase is necessary only if a distance or location is not included in the first phase selected ▪ If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves ▪ If a phase that is needed is not shown, consult the <i>TxDOT DMS Message Design and Display Manual</i> for guidance on appropriate message content and design <p><u>Wording Alternatives:</u></p> <ul style="list-style-type: none"> ▪ The words RIGHT, LEFT, and ALL can be interchanged as appropriate ▪ Roadway designations IH, US, SH, FM, RM, and LP can be interchanged as appropriate ▪ EAST, WEST, NORTH, and SOUTH (or abbreviations E, W, N, and S) interchanged as appropriate ▪ Highway names and numbers replaced as appropriate ▪ ROAD, HIGHWAY, and FREEWAY interchanged as needed ▪ AHEAD may be used instead of distances if necessary ▪ FT and MI, and MILE interchanged as appropriate ▪ AT, BEFORE, and PAST interchanged as needed ▪ Distances or AHEAD can be eliminated from the message if a location phase is used 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">FREEWAY CLOSED X MILE</td> <td style="text-align: center;">FRONTAGE ROAD CLOSED</td> <td style="text-align: center;">ROADWORK XX FT</td> <td style="text-align: center;">ROAD REPAIRS XX FT</td> </tr> <tr> <td style="text-align: center;">ROAD CLOSED AT SH XX</td> <td style="text-align: center;">SHOULDER CLOSED XX FT</td> <td style="text-align: center;">FLAGGER XX FT</td> <td style="text-align: center;">LANE NARROWS XX FT</td> </tr> <tr> <td style="text-align: center;">ROAD CLSD AT FM XXXX</td> <td style="text-align: center;">RIGHT LN CLOSED XX FT</td> <td style="text-align: center;">RIGHT LN NARROWS XX FT</td> <td style="text-align: center;">TWO-WAY TRAFFIC XX MILE</td> </tr> <tr> <td style="text-align: center;">RIGHT X LANES CLOSED</td> <td style="text-align: center;">RIGHT X LANES OPEN</td> <td style="text-align: center;">MERGING TRAFFIC XX FT</td> <td style="text-align: center;">CONST TRAFFIC XX FT</td> </tr> <tr> <td style="text-align: center;">CENTER LANE CLOSED</td> <td style="text-align: center;">DAYTIME LANE CLOSURES</td> <td style="text-align: center;">LOOSE GRAVEL XX FT</td> <td style="text-align: center;">UNEVEN LANES XX FT</td> </tr> <tr> <td style="text-align: center;">NIGHT LANE CLOSURES</td> <td style="text-align: center;">I-XX SOUTH EXIT CLOSED</td> <td style="text-align: center;">DETOUR X MILE</td> <td style="text-align: center;">ROUGH ROAD XX FT</td> </tr> <tr> <td style="text-align: center;">VARIOUS LANES CLOSED</td> <td style="text-align: center;">EXIT XXX CLOSED X MILE</td> <td style="text-align: center;">ROADWORK PAST SH XX</td> <td style="text-align: center;">ROADWORK NEXT FRI-SUN</td> </tr> <tr> <td style="text-align: center;">EXIT RAMP CLOSED</td> <td style="text-align: center;">RIGHT LN TO BE CLOSED</td> <td style="text-align: center;">BUMP XX FT</td> <td style="text-align: center;">US XX EXIT X MILES</td> </tr> <tr> <td style="text-align: center;">MALL DRIVEWAY CLOSED</td> <td style="text-align: center;">X LANES CLOSED TUE - FRI</td> <td style="text-align: center;">TRAFFIC SIGNAL XX FT</td> <td style="text-align: center;">LANES SHIFT</td> </tr> <tr> <td style="text-align: center;">XXXXXXXXXX BLVD CLOSED</td> <td></td> <td></td> <td></td> </tr> </table>	FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED	ROADWORK XX FT	ROAD REPAIRS XX FT	ROAD CLOSED AT SH XX	SHOULDER CLOSED XX FT	FLAGGER XX FT	LANE NARROWS XX FT	ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XX FT	RIGHT LN NARROWS XX FT	TWO-WAY TRAFFIC XX MILE	RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XX FT	CONST TRAFFIC XX FT	CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XX FT	UNEVEN LANES XX FT	NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XX FT	VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XX	ROADWORK NEXT FRI-SUN	EXIT RAMP CLOSED	RIGHT LN TO BE CLOSED	BUMP XX FT	US XX EXIT X MILES	MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XX FT	LANES SHIFT	XXXXXXXXXX BLVD CLOSED				<p>✓ LANES SHIFT problem phase must be used in conjunction with STAY IN LANE action to take phase on next page</p>	
FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED	ROADWORK XX FT	ROAD REPAIRS XX FT																																								
ROAD CLOSED AT SH XX	SHOULDER CLOSED XX FT	FLAGGER XX FT	LANE NARROWS XX FT																																								
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XX FT	RIGHT LN NARROWS XX FT	TWO-WAY TRAFFIC XX MILE																																								
RIGHT X LANES CLOSED	RIGHT X LANES OPEN	MERGING TRAFFIC XX FT	CONST TRAFFIC XX FT																																								
CENTER LANE CLOSED	DAYTIME LANE CLOSURES	LOOSE GRAVEL XX FT	UNEVEN LANES XX FT																																								
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XX FT																																								
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE	ROADWORK PAST SH XX	ROADWORK NEXT FRI-SUN																																								
EXIT RAMP CLOSED	RIGHT LN TO BE CLOSED	BUMP XX FT	US XX EXIT X MILES																																								
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XX FT	LANES SHIFT																																								
XXXXXXXXXX BLVD CLOSED																																											

ACCEPTABLE PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

Phase 2: Possible Component Lists					
Checklist	Action to Take/Effect on Travel List		Location List	Warning List	Advance Notice List
✓ Only 1 or 2 phases are used on each PCMS	MERGE RIGHT	FORM X LINES RIGHT	AT FM XXXX	SPEED LIMIT XX MPH	TUE-FRI XX AM – X PM
✓ Each phase is displayed for at least 2 seconds	DETOUR NEXT 2 EXITS	USE XXXXXXXX RD EXIT	BEFORE RAILROAD CROSSING	MAXIMUM SPEED XX MPH	APR XX-XX XPM-XAM
✓ Phase does not scroll across sign nor flash	USE EXIT XX	USE EXIT I-XX NORTH	NEXT X MILES	MINIMUM SPEED XX MPH	BEGINS MONDAY
✓ At least one phase is selected from the Problem Lists	STAY ON US XX SOUTH	USE I-XX E TO I-XX N	PAST US XX EXIT	ADVISORY SPEED XX MPH	BEGINS MAY XX
✓ Correct lanes, highways, exit numbers, days, dates, and/or times are displayed	TRUCKS USE US XX N	TRUCKS USE RIGHT LN	XXXXXXX TO XXXXXXX	RIGHT LANE EXIT	MAY X-X XX PM – XX AM
✓ Once work is within seven days, calendar dates are replaced with days of the week	WATCH FOR TRUCKS	EXPECT DELAYS	US XX TO FM XXXX	USE CAUTION	NEXT FRI-SUN
✓ PCMS is visible from at least 1000 ft away	EXPECT MAJOR DELAYS	PREPARE TO STOP		DRIVE SAFELY	XX AM TO XX PM
✓ If 2 PCMS are used, they are separated by at least 1000 ft and are on same side of road	REDUCE SPEED 500 FT	END SHOULDER USE		DRIVE WITH CAUTION	NEXT TUE AUG XX
✓ The PCMS should be turned off when the condition no longer applies.	USE OTHER ROUTES	WATCH FOR WORKERS			TONIGHT XX PM – XX AM
✓ PCMS message, display characteristics, and dates and times of display are documented in the project diary	STAY IN LANE				

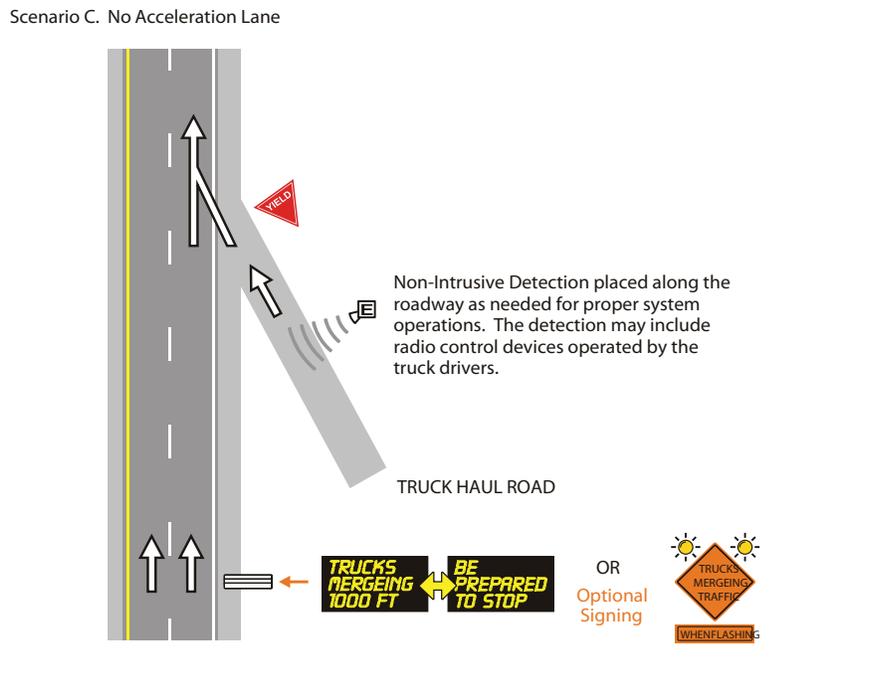
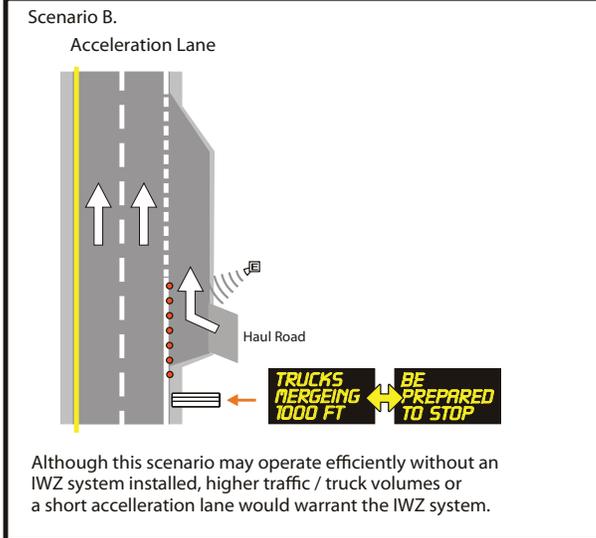
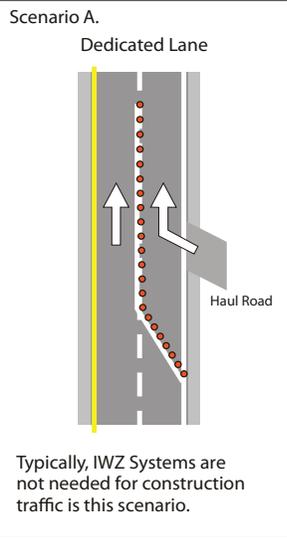
WARRANTS

- The trucks must utilize the mainline roadway to accelerate.
- A truck merge lane can not be provided on the project.
- The haul road entrance is visibly obscured to drivers.
- The ADT on the roadway is above the level where truck drivers can easily find a gap in traffic and accelerate within the traffic lane without causing traffic to suddenly adjust speed or change lanes.

BENEFITS

- The system should alert drivers of a slowly accelerating truck entering the faster moving traffic lane.
- The system should provide sufficient time for drivers to react appropriately, such as slowing down or changing lanes.

Layouts are NOT drawn to scale.



OPTIONS

- A variation of this system may be used to detect work vehicles in the vicinity which may create a traffic hazard. The example shown below warned the motorists when snow plows were clearing the roadway in a restricted section. The signs were activated by radio communications from the plow trucks.



NOTES

- Advance warning signs and other standard temporary traffic control devices have not been shown on this figure. Refer to the MN MUTCD including the 2007 Field Manual or the TTC Layout Templates for typical layout examples.
- All IWZ Guide Signs and CMS should be reviewed by the Mn/DOT Office of Traffic, Safety, & Operations for design and message approval.
- Approved CMS messages should be listed in the Special Provisions, and approx CMS locations should shown on the TTC plans. All CMS displays should be blank when messages are not warranted.
- Refer to the Toolbox Definitions Section for graphic symbols and terms.



VEHICLE
RESPONSIVE

TRUCKS MERGING TRAFFIC WARNING

Last
Revision
Date: 04-29-08

WARRANTS

- The trucks must utilize the mainline roadway to decelerate, and
- The roadway volume is above the level where the traffic must suddenly adjust speed or change lanes.

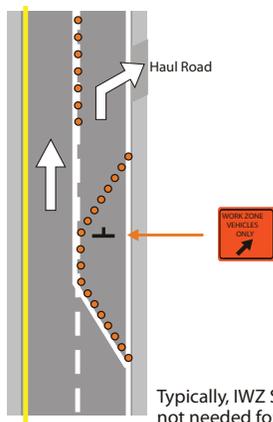
BENEFITS

- The system should alert drivers of a decelerating truck exiting the faster moving traffic lane.
- The system should provide drivers sufficient time to react appropriately, such as slow down or change lanes if possible.

Layouts are NOT drawn to scale.

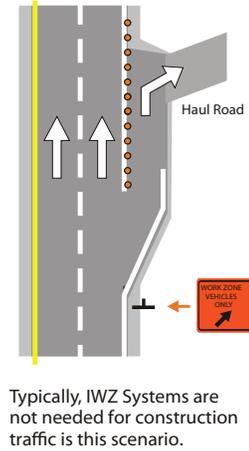
Scenario G

Dedicated Lane

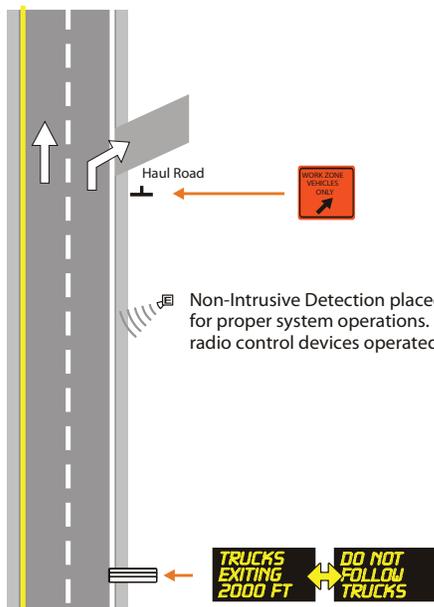


Scenario H

De-acceleration Lane



Scenario I. No De-acceleration Lane



OPTIONS



NOTES

- Advance warning signs and other standard temporary traffic control devices have not been shown on this figure. Refer to the MN MUTCD including the 2007 Field Manual or the TTC Layout Templates for typical layout examples.
- All IWZ Guide Signs and CMS should be reviewed by the Mn/DOT Office of Traffic, Safety, & Operations for design and message approval.
- Approved CMS messages should be listed in the Special Provisions, and approx CMS locations should be shown on the TTC plans. All CMS displays should be blank when messages are not warranted.
- Refer to the Toolbox Definitions Section for graphic symbols and terms.



VEHICLE RESPONSIVE

TRUCKS EXITING TRAFFIC WARNING

Last Revision Date: 04-29-08



ARIZONA'S US 93 CORRIDOR NEWSLETTER

"The Arizona Department of Transportation continues an aggressive campaign to upgrade the US 93 Corridor through northwestern Arizona. These improvements to US 93 will provide a faster and safer drive for travelers throughout the region."

— Michael Kondelis, P.E., ADOT Kingman District Engineer

Past and Continued Success

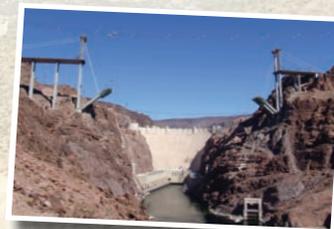
Over the past 11 years, more than 40 miles of US 93 have been transformed into a four-lane highway surrounded by an environmentally unique terrain.

The past and continued success of the US 93 Corridor is based on the solid teamwork and coordination of the Arizona Department of Transportation, Federal Highway Administration, the Bureau of Land Management, National Park Service, U.S. Bureau of Reclamation, Arizona Game & Fish, Department of Public Safety, statewide officials, contractors, designers and many dedicated project teams.



US 93, Hoover Dam Bypass Project

Construction of the Colorado River Bridge is advancing with construction of the 1,060 foot twin-rib concrete arch. The Colorado River Bridge is the central portion of the Hoover Dam Bypass Project. Construction on the nearly 2,000 foot long bridge began in late January 2005 and the completion of the entire Hoover Dam Bypass Project is expected in December 2010. When completed, this signature bridge will span the Black Canyon (about 1,600 feet south of the Hoover Dam), connecting the Arizona and Nevada Approach highways nearly 900-feet above the Colorado River. For more information and to view the live webcam please visit: www.hooverdambypass.org.



A New Era of Public Outreach, Incorporating Social Media

The Arizona Department of Transportation is breaking ground on the way construction alerts and travel information are issued to motorists. ADOT has chosen to implement social media outlets Twitter and Facebook on the \$ 71.3 million US 93 Project between Hoover Dam and milepost 17.

Twitter and Facebook are popular, free social networking tools that allow users to receive information and communicate with others in short text messages exchanged on their cell phones or by logging on to the Web – both of which can be done in a mobile environment.

"Free public social networking tools like Twitter and Facebook help us stay connected to the traveling public with real-time information about detours and restrictions," explained Michele Beggs, public information officer for the ADOT Kingman District. The Project Team will issue notifications when there are travel delays, construction impacts, holiday travel information and completed major milestones.

"This will allow our customers a new way of receiving information, it is a tool of convenience they can incorporate into their already busy lives," said Beggs, "ADOT believes it will be extremely useful to those traveling to and from Las Vegas from Arizona so they can alter their route or plan for possible arrival delays if necessary."



Travelers who wish to receive updates on the US 93 Project via Twitter or Facebook:



www.facebook.com and join group **Arizona US 93 Corridor**.



www.twitter.com/us93corridor

Want ADOT project information delivered to you?

Sign-up for your favorite way to receive project updates:

- **Call us!** (888) 887-0565
- **Website:** www.us93corridor.com
- **Twitter:** www.twitter.com/US93Corridor
- **E-mail:** info@us93corridor
- **Facebook:** www.facebook.com, search Group "Arizona US 93 Corridor"
- **GovDelivery** - ADOT's News Releases delivered to your inbox: For info on this and all other statewide ADOT construction projects go to www.azdot.gov/CCPartnerships/News



Post a Comment Missouri DOT in St. Louis

Ground rules and disclaimer

Please feel free to ask questions, express concerns or offer suggestions. MoDOT will make a concerted effort to offer a reply to all reasonable comments to the blog. Comments will be screened by MoDOT, and those comments which do not meet up with MoDOT's [blog use policy](#) will not be posted.

TUESDAY, MARCH 16, 2010

➔ Missouri's largest ARRA project starts

Yesterday, MoDOT and local politicians got together to launch the last section of a project that has been in the works for about 40 years -- the final section of Route 141.

Route 141, between Ladue and Olive Boulevard is still a three lane road (one lane in each direction with a turn lane). Often, during the spring or heavy rainfall, the section of Route 141 there has to be closed due to flooding. Also, anyone who has driven through the area during morning or evening rush hours can expect to be backed up for some time at Parkway Central or as Route 141 goes from a four lane divided highway to a three lane road.

This \$44.5 million project is paid for by American Recovery and Reinvestment Act money will pull Route 141 above the flood plain and improve the traffic flow on the route. Not only that, but by relocating the new route to the east, a great deal of through traffic from Route 141 (people accessing the Maryland Heights Expressway and Route 364 to St. Charles County) will be removed from a roadway that services two schools, a school bus depot and a number of businesses and subdivisions.

This project will make the roadway safer and move traffic more efficiently. Work on the project starts this month and work should be completed by summer 2010.

Posted by MoDOT- Andrew Gates at 8:21 AM



Labels: [ARRA](#), [funding](#), [Missouri](#), [MoDOT](#), [transportation](#)

1 comments:

雅琪雅琪 said...

TAHNKS FOR YOUR SHARING~~~VERY NICE.....

April 2, 2010 11:36 PM

About MoDOT in St Louis

- ➔ [crsmodot](#)
- ➔ [MoDOT- Andrew Gates](#)
- ➔ [MoDOT_LindaWilson](#)

Blog Archive

- ▶ 2011 (1)
- ▼ 2010 (3)
 - ▶ December (1)
 - ▶ July (1)
 - ▼ March (1)
 - [Missouri's largest ARRA project starts](#)
- ▶ 2009 (12)
- ▶ 2008 (15)

Slideshow



Photos above are from construction around St. Louis.

MoDOT links in St. Louis

- ➔ [Gateway Guide](#)
- ➔ [Mississippi River Bridge Web Site](#)
- ➔ [MoDOT - St. Louis region](#)
- ➔ [St. Louis Traveler Information Map](#)
- ➔ [The New I-64 Project](#)

Screen Shot of Web Page on MoDOT Website

[Sign Up](#) Facebook helps you connect and share with the people in your life.



MoDOT-STL: Route 141 Photos [Like](#)

Government Organization · Chesterfield, Missouri

[Create a Page](#)

MoDOT-STL: Route 141's Photos

See All: [Photos](#) · [Videos](#)

Similar Facebook Pages



Smog-Easting Concrete pour
6 photos



Route 141 - August 2011
7 photos



Route 141 construction - July 2011
4 photos



MoDOT - St. Louis
1,107 like this



State of Missouri
1,785 like this



MoDOT Kansas City
2,912 like this

[More >](#)

- Wall
- Info
- Photos**
- Discussions

About

MoDOT's Route 141 project relocates the route between Ladue Road and Olive...

[More](#)

161
like this

4
talking about this

- Likes
- Missouri Department of Transportation
 - New Mississippi River Bridge
 - MoDOT - St. Louis

[Create a Page](#)



Route 141 June 2011 update
10 photos



Route 141 - April 2011
11 photos



Selected Route 141 photos from February 2011
13 photos



Wall Photos
3 photos



Route 141 update - January 2011
11 photos



Route 141 construction - December 2010
8 photos



Aerial photos of Route 141 - October 2010
10 photos



Route 141 construction - October 2010
7 photos



Utility work at Route 141, October 2010
3 photos



Route 141 September 2010
15 photos



July 2010 photos
6 photos



Aerial photos of Route 141 construction
4 photos

Screen Shot of MoDOT Facebook Page

How Can I Locate More Information Regarding This Topic?

Mallett, W.J., J. Torrence, and J. Seplow. Work Zone Public Information and Outreach Strategies. Report No. FHWA-HOP-05-067. FHWA, U.S. Department of Transportation, Washington, DC. November 2005. Accessible at http://www.ops.fhwa.dot.gov/wz/info_and_outreach/public_outreach_guide.pdf

Barricade and Construction Portable Changeable Message Sign Standard. BC(6)-07. Traffic Operations, Texas Department of Transportation. September 2007. Accessible at <ftp://ftp.dot.state.tx.us/pub/txdot-info/cmd/cserve/standard/traffic/bc07.pdf>

Minnesota IWZ Toolbox: Guideline for Intelligent Work Zone System Selection. Minnesota Department of Transportation, Minneapolis, MN. 2008. Accessible at <http://www.dot.state.mn.us/trafficeng/workzone/iwz/MN-IWZToolbox.pdf>

Arizona Department of Transportation Facebook page. Accessible at <http://www.facebook.com/AZDOT>

US 93 Project Team Twitter page. Arizona Department of Transportation. Accessible at <http://twitter.com/#!/us93corridor>

Route 141 Improvement Project. Missouri Department of Transportation. Accessible at http://www.modot.mo.gov/stlouis/major_projects/rte141improvementproject.htm

Post a Comment, Missouri DOT in St. Louis. Missouri Department of Transportation. Accessible at <http://www.modot-stl.blogspot.com/>

Slow for the Cone Zone. California Department of Transportation. Accessible at <http://www.dot.ca.gov/hq/conezone/>





Developed By: The Roadway Safety Consortium

202-628-5465
www.workzonesafety.org



Laborers' International Union of North America
Laborers' Health and Safety Fund of North America
LIUNA Training and Education Fund
American Road and Transportation Builders Association
National Asphalt Pavement Association
International Union of Operating Engineers
American Association of State Highway
and Transportation Officials
Texas Transportation Institute
FOF Communications



U.S. Department of Transportation
Federal Highway Administration



This material is based upon work supported by
the Federal Highway Administration
under Grant Agreement No. DTFH61-06-G-00007.

Any opinions, findings and conclusions or recommendations expressed in
this publication are those of the author(s) and do not necessarily reflect
the view of the Federal Highway Administration. This publication does not
constitute a national standard, specification or regulation.