

# New Jersey Turnpike Authority

## GUIDELINE FOR USE OF VMS SYSTEMS FOR CONSTRUCTION



MARCH 2012

PREPARED BY



**Dewberry**<sup>®</sup>

AND

**GPI**

Greenman-Pedersen, Inc.  
Engineering and Construction Services

## TABLE OF CONTENTS

I. PURPOSE OF GUIDELINE .....	2
II. OVERVIEW OF VARIABLE MESSAGE SIGNS .....	2
A. Permanent Variable Message Signs .....	2
B. Portable Variable Message Signs .....	4
C. Types of Messages .....	5
III. APPLICATION FOR USE .....	6
A. Days Prior to Construction Work .....	6
B. Days During Construction Work.....	8
C. Design – Guidance and Procedures .....	9
APPENDIX A:       Acceptable Abbreviations	

## I. PURPOSE OF GUIDELINE

The “Guideline for Use of VMS Systems for Construction” has been developed in order to:

- Acquaint the design consultant and Authority staff with the various types of Variable Message Sign(s) (VMS) present on the New Jersey Turnpike (Turnpike) and the Garden State Parkway (Parkway).
- Supplement the Manual for Traffic Control in Work Zones Section 4.5 on Variable Message Sign (VMS) Systems with further recommendations on course of action for the use of VMS in advance of and during construction work.
- Elaborate on design recommendations for VMS placement especially during High Intensity Construction Cycles (HICCs), which are not covered in the Authority’s Standard Drawings.

This document is not intended to be a standard, but rather a guideline for use. Traffic control methods and use of VMS for each project should be consistent with the general provisions of this Guideline, the Authority’s Design Manual, Standard and Supplementary Specifications, the Manual for Traffic Control in Work Zones, and the Manual for Uniform Traffic Control Devices (MUTCD).

This guideline is not intended to restrict or dictate any one situation. Evaluation of the site-specific constraints and construction procedures shall be performed by the design consultant according to the various Authority documents referenced above.

Presented herein are the following: types of variable message signs; types of messages; application for usage; and design procedure - general guidance and procedures. Included in Appendix A are acceptable abbreviations for words used on VMS. The user should refer to the most current version of the Authority’s Standard Drawings, which can be found at: [www.state.nj.us/turnpike/standard-drawings.html](http://www.state.nj.us/turnpike/standard-drawings.html).

## II. OVERVIEW OF VARIABLE MESSAGE SIGNS

Care must be taken when using VMS so as to adequately inform the motorist, but not serve as a distraction. Therefore, messages shall be kept short and simple, and not display complex information the motorist would need to decipher.

VMS are used by roadway owners to convey safety and transportation related information to the traveling public and aid them in making decisions. There are two (2) types of VMS installations: Permanent and Portable (PVMS). Both are currently used along the Turnpike and Parkway roadways and are described as follows:

### A. Permanent Variable Message Signs

There are four (4) types of Permanent VMS currently installed along the Turnpike and the Parkway roadways; they are: “Reduce Speed” VMS, Changeable Message Signs, Electronic VMS, and Variable Speed Limit VMS.

The existing Permanent VMS are to be regarded as supplemental signs and are not to be factored into the design of the contract’s MPT, or in lieu of any PVMS / other early warning signs that are required per NJTA Standards. At the request of the Engineer, these signs may be utilized if available and at the discretion and approval of the Operations Department.

### 1) “Reduce Speed” VMS

One of the first permanent VMS successfully used in the country was along the Turnpike. These familiar “Reduce Speed” signs with neon lettering have been providing information to the travelling public for many years. A disadvantage is that the messages are limited to the following: reduce speed - construction, accident, congestion, ice, fog, and/or snow X miles ahead. This hinders the flexibility for dynamic changes in traffic conditions to be expressed to the travelling public. These signs are being replaced along the Authority’s roadways. See Figure 1.



Figure 1. “Reduce Speed” VMS

### 2) Changeable Message Signs (CMS)

These signs consist of pre-determined messages on rotating drums that can be changed remotely. Typically, CMS can be seen in the mixing bowl areas as well as along the NS-95, SN-95, NS-80, and SN-80 Roadways. Changeable Message Signs cannot be utilized for Construction Notification messages, but can be used for closing roadways and diverting truck and bus traffic. The signs are not to be revised by any contractor; only the State Traffic Management Center (STMC) can change the sign messages. The typical message should be included on the plans. See Figure 2.



Figure 2. Changeable Message Signs

### 3) Electronic VMS

The Authority is adding electronic overhead VMS along both the Turnpike and Parkway roadways as part of the 10 year Capital Program. Overhead electronic VMS are remotely controlled by the State Traffic Management Center (STMC), which are capable of providing complete and up to the minute information, and can be utilized to provide detailed construction notification messages. See Figure 3.



Figure 3. Electronic VMS

### 4) Variable Speed Limit – Emergency Speed Warning signs (VSL/ESW)

VSL/ESW signs consist of a speed limit sign with a variable speed limit display and an Emergency Warning Speed sign with fixed messages that can be lit in varying combinations. These signs are capable of being remotely controlled, by the STMC only, and can be utilized to reduce speed limits within the work zone, if necessary. If VSL/ESW boards fall within the limits of a lane closing, the speed limit displayed should reflect the value signed within the limits of the closing. These signs are regulatory in nature and the speed limits displayed on the VSL/ESW signs are enforceable. See Figure 4.



Figure 4. Speed Limit VMS

## B. Portable Variable Message Signs

PVMS allow for a great amount of flexibility and are especially convenient when used in construction projects with multiple closing locations, such as in Bridge Deck Repair and Rehabilitation projects. In addition to their portability, these signs have added flexibility of being remotely controlled.



Figure 5. Portable VMS

PVMS are a Category IV crashworthy device. It shall not be permitted within the clear zone unless protected by an existing (or provided) positive protection roadside device(s) as illustrated on the Authority's Standard Drawing No. TP-21. Where positive protection cannot be provided or is not available, or a flat area beyond 30 feet of the travel way is not possible, the device shall be delineated similar to a Standard Shoulder Closing.

Screen display options include continuous line matrix (the screen has three set lines, but not a set number of characters), full matrix (no set number of lines or characters), and modular screen (screen has three lines with eight characters each). The modular screen, as shown in Figure 5, is most commonly used on the Turnpike and Parkway. Therefore, messages on PVMS are typically limited to a maximum of three lines of eight characters per flash.

Typically no more than two flashes are recommended for use; however, the number of flashes should be reviewed with design guides and travel speeds. Since the number of characters is limited, abbreviations are necessary. New abbreviations shall not be created; standard abbreviations as shown in Appendix A shall be used to maintain consistency and to ensure that the message is not misinterpreted by the travelling public. The consultant should be aware that Appendix A is subject to revision by MUTCD and FHWA; such revisions should be adhered to when designing PVMS displays.

PVMS may be used as part of a "Smart Work Zone System" (SWZS). This system uses sensors, cameras, and programming to calculate the average travel time between points. The information presented to the public is automatically updated on the PVMS assemblies based on preset user defined criteria. Additionally, these systems record information regarding travel times, vehicle classifications and volumes, and density for future evaluation of the success of a closing. See Figure 6.



Figure 6. Camera and Solar Panel for "Smart Work Zone System."

All PVMS must be compatible with the software used at the STMC, located in Woodbridge, NJ. This is to allow operation of the PVMS by Authority personnel if deemed necessary. Compatibility with the software must be coordinated and established two (2) weeks prior to the placement of each PVMS.

Further information on PVMS can be found through the FHWA at <http://www.fhwa.dot.gov/publications/research/infrastructure/pavements/itpp/reports/03066/#intro>.

## **C. Types of Messages**

The three (3) common uses of VMS with regard to construction projects are: construction notification, supplemental information, and alternative route notifications, which are described as follows:

### **1. Construction Notification**

The purpose of Construction Notification messages is to alert the travelling public of future or current construction activities that may cause traffic delays or congestion. Please note that the standard drawings call for this VMS to be placed two (2) miles prior to the work area, but in some instances, the taper point for the associated lane or shoulder closing is farther than two (2) miles from the work area. Therefore, these signs are typically placed one (1) to two (2) miles prior to the taper point of the closing at the design engineer's judgment with approval from the Authority's Operations Department.

These signs may be installed within long-term MPT that involves lane closures / shifts as well as for HICCs involving lane closures / shifts or ramp detours that may result in congestion. As not all long-term closings and HICCs require VMS, the locations shall be verified with NJTA Operations Department to ensure that the traveling public does not become desensitized through overuse.

Construction Notification Signs are to be placed at least six (6) days in advance of the actual stage for long-term work zones and on the Monday prior to the closing for HICCs. Long-term work is defined as work closings in place for longer than three (3) days per the Manual for Traffic Control in Work Zones. It is important to note that construction notification VMS are not required if the construction MPT consists only of a shoulder closing, but may be necessary (after consultation with Operations during design Phase revIESW) with a reduction in the number and/or width of lanes, or a shift during HICCs and long-term closings.

These signs allow motorists to plan for the upcoming construction activities by allowing more time for planning of alternate routes and thereby assist in diverting a portion of the traffic from the work zone. During the closing, these signs are left in place to inform motorists of upcoming conditions such as lane shifts or lane closures.

### **2. Supplemental Information**

The purpose of Supplemental Information signs is to provide additional information than just the static signs within the MPT. The location of and message for these signs are to be included within the approved MPT plans. Many times they alert the motorist to sudden changes in the roadway / lane alignment or condition, or of an exit ahead. These signs are typically positioned when the closing is installed, are typically not moved, and the message broadcast is typically not changed throughout the duration of the closing. The Supplemental Information signs shall be removed at the end of the stage.

### **3. Alternate Route Notification**

Alternate Route Notification signs inform the motorist that it may be desirable to consider leaving the roadway and detour onto alternative routes to avoid potential congestion. These signs may be used with any long-term MPT that involves lane or ramp closures / shifts, as well as for HICC MPT involving lane closures / shifts that may result in congestion after consultation with Operations during design Phase revIESW. Ramp closures will also require alternate route notification through use of VMS and static detour signs. These signs shall be provided approximately two (2) miles upstream of the decision point (location where motorist must decide to take another route).

The intent is to direct motorists that are familiar with the surrounding roadway network to exit the roadway prior to the work zone, thereby reducing potential congestion. In addition to VMS, the motorist is alerted to construction via traffic bulletins on the radio and internet, and local nESWpapers as per the Authority's press release procedures document.

## **III. APPLICATION FOR USE**

VMS are used during two (2) different distinct timeframes; the first is in advance of construction and the second is during construction. Recommended messages for the long-term closings can be found on NJTA Standard Drawings, but HICCs are not covered on the Standard Drawings. Therefore, sample messages for the HICCs are presented herein.

The use of PVMS will be determined/finalized during standard Phase revIESW by Operations in cooperation with Engineering and the Design Engineer. During standard design Phase revIESW, Operations may eliminate, add, or otherwise modify use of PVMS, including but not limited to use, location, messages, etc.

Most situations require two (2) messages per VMS to convey the information clearly. Examples of VMS messages during the different applications are as follows:

### **A. Days Prior to Construction Work**

#### **1. Construction Notification**

The Construction Notification Signs shall be placed six (6) days prior to the actual construction work for long-term stages and the Monday prior to the work for HICCs. These signs shall be located one (1) to two (2) miles prior to the closing so as not to conflict with the pre-warning signs shown on the Standard Drawings. Location of sign installation shall take into consideration any supplemental closings and shall be such that VMS does not have to be relocated to accommodate such closings.

These VMS shall have two flashes outlining the work to be performed as follows. Exact messages to be used shall be in accordance with the latest Standard Drawings for long-term stages and as approved by Operations for HICCs and long-term stages.

	First Message	Second Message (Long-term stages)	Second Message (HICC stages)
<b>Ramp Closing</b>	EXIT XXX TO CLOSE	STARTING **DAY** **TIME**	**TIME**DAY** THROUGH **TIME**DAY**
<b>Mainline Work</b>	ROAD WORK	STARTING **DAY** **TIME**	**TIME**DAY** THROUGH **TIME**DAY**
<b>Lanes to Shift</b>	LANES SHIFT	STARTING **DAY** **TIME**	**TIME**DAY** THROUGH **TIME**DAY**

Acceptable abbreviations for \*\*DAY\*\* are SUN, MON, TUE, WED, THR, FRI, and SAT. Acceptable abbreviations for \*\*TIME\*\* are the numeral followed by AM or PM without a space such as 6AM. Acceptable abbreviations for \*\*TIME\*\*DAY\*\* is the day as noted above and the time as noted above such as 6AM MON. Punctuation is not permitted except for the solidus of a fraction.

## 2. Supplemental Information

Supplemental Information Signs display further information regarding specific unique closing conditions to the motorists. As no closing is in place at this time, no Supplemental Information Signs are necessary in the days prior to construction work.

## 3. Alternate Route Notification

Alternate Route Notification signs are typically placed significantly upstream of the work zone (typically two miles prior to the aforementioned motorist decision point) and are activated during the actual construction period only. However, in work zones closely interconnected with multiple outside agencies, these agencies shall be coordinated with and may request additional Alternate Route Notification signs be installed several days prior to the closing along their roadways.

These signs should be provided based on the recommendations of the design engineer and with approval / concurrence from the Authority's Engineering and Operations Departments and / or governing agencies (if outside NJTA jurisdiction).

	First Message	Second Message (Long-term stages)	Second Message (HICC stages)
<b>Extraordinary Closures</b>	ROADWORK SOUTH OF EXIT XX	STARTING **DAY** **TIME**	**TIME**DAY** THROUGH **TIME**DAY**

## B. Days During Construction Work

### 1. Construction Notification

During the construction work, the two-phase signing shall describe the condition in the first flash and provide motorist instruction in the second flash. Exact messages to be used shall be per the latest NJTA Standard Drawings and as approved by NJTA Operations.

	First Message	Second Message
<b>Ramp Closing</b>	EXIT XXX CLOSED 2 MI	FOLLOW DETOUR
<b>Lanes to Shift</b>	LANES SHIFT 2 MI	STAY IN LANE AHEAD
<b>Lane Closed</b>	RT LANE CLOSED 2 MI	MERGE LEFT AHEAD

### 2. Supplemental Information

VMS for supplemental information shall be used sparingly and only where deemed absolutely necessary. It is preferred to use VMS only when static signs do not suffice. These signs bring attention to unique circumstances in order to aid motorists within the actual closing. Exact messages to be used shall be per the latest Standard Drawings. Examples of Supplemental Information signs are:

	First Message	Second Message
<b>Bump Ahead</b>	ROAD WORK 1/2 MI	BUMP ALL (LEFT,CENTER, RIGHT) LANE(S)
<b>Rough Road</b>	ROUGH SURFACE 1/2 MI	ALL (LEFT,CENTER, RIGHT) LANE(S)
<b>Exit</b>	EXIT 11 1/2 MI	KEEP RIGHT

### 3. Alternate Route Notification

During construction work zones for long-term or HICC closings, Alternate Route Notification Signs can be utilized to inform the motorists of the upcoming work and provide an alternative route around the work zone. These signs shall be used with closings that reduce the capacity of the roadway and at locations where congestion is anticipated due to the type of work and MPT. Examples of signs are:

	<b>First Message</b>	<b>Second Message</b>
<b>Mainline Work</b>	ROADWORK SOUTH OF EXIT 13	ALT RTE USE RT 1/9S

### C. Design – Guidance and Procedures

The Authority's Operations Department continuously strives to implement proper and measured action to reduce the impact of construction on the travelling public. To that end, use of PVMS and all PVMS messages are subject to the approval of the Authority's Engineering and Operations Departments.

When preparing a set of contract documents, the design engineer must take the proper steps to ensure that the Operations Department has a full understanding of the scope, duration, and impact that each construction phase will have on the travelling public. As such, the contract plan development and presentation must meet certain minimum requirements.

The following list presents a summary of the information provided on the Authority's Standard Drawing TP-21 and additional pertinent information for the design engineer. The outlined procedure shall be followed on all projects with concurrence from the Authority's Project Engineer:

#### 1. Design Procedures

Design of VMS for construction purposes shall conform to the following:

- a. The latest MUTCD, AASHTO Roadside Design Guide, and NJTA Specifications and Manual for Traffic Control in Work Zones.
- b. If applicable, messages shall be per Authority's Standard Drawing TP-21. Other messages shall adhere to guidance provided in the latest edition of the MUTCD. All messages are subject to approval from the Authority's Engineering and Operations Departments.
- c. Design engineer shall provide plans depicting the location of the VMS and the associated MPT.
- d. Consideration shall be given to the use of standard abbreviations to avoid misinterpretation by the travelling public. See Appendix A.

## **2. Design Consideration**

Depending on the purpose of the VMS message, the installation process varies. The design engineer should consider the following when determining the location and installation timeframe of the VMS:

- a. *Construction Notification Signs placed in advance and prior to the start of construction* shall be in place and operational six (6) days prior to the beginning of construction for long-term stages. Weekend HICC shall have signs placed on the Monday prior to the closing.

*Construction Notification Signs placed in advance and during construction stages* shall be positioned one (1) to two (2) miles upstream of the work zone. These signs shall be placed in the same location for both timeframes; the message will be changed but the location shall not.

- b. *Supplemental Information* signing shall be in place and operational at the start of and during the closing. Location shall be such that drivers are given ample time to read the message and react prior to the condition or maneuver is encountered.
- c. *Alternate Route* signing is typically not installed for any length of time prior to a long-term closing. However, alternate route signing may be placed up to two (2) weeks in advance of the long term closing at the discretion of the design engineer for extraordinary circumstances and with approval from the Authority Operations Department.

For HICCs, the Alternate Route Notification Sign shall be in place and operational on the evening of the HICC (typically Friday night). The VMS must be located far enough upstream of the upstream exit, or crossover, to allow the motorist to comfortably make a decision whether or not to leave the roadway. It is recommended that two (2) VMS be placed with identical messages, the first located one (1) mile upstream and the second located two (2) miles upstream of the upstream exit. Any permanent VMS usage shall be coordinated through the Authority's Operations Department and the controlling outside agencies where applicable. Reliance on the use of existing permanent VMS cannot be expected in any case.

Note: The locations of Alternate Route Notification and Construction Notification VMS shall be reviewed to ensure they are not in conflict with each other.

Additionally, the design engineer shall perform the following tasks:

- d. The design engineer shall identify the locations of any existing permanent VMS on plans and coordinate appropriately with the Authority's Operations Department or other outside agencies regarding their use within the contract. Permanent VMS are not to be used in lieu of PVMS, as required by design. The existing, permanent VMS are to be regarded as supplemental signs. They are not to be factored into the design of the contract's MPT, or in lieu of any PVMS or other early warning signs that are required per NJTA Standards. At the request of the engineer, these signs may be utilized if available and at the discretion and approval of the Operations Department.

There will be no reliance on NJTA's supervisors to program and display the contractor's messages. This responsibility lies solely with the engineer and contractor.

- e. The design engineer shall verify the proposed location of each PVMS in the field during design. Presence of an excessive embankment cross-slope or large elevation differentials shall be noted. If necessary, blocking shall be incorporated to provide a level surface on which to place the sign.
- f. Based on field review, all PVMS not placed behind guide rail, or other existing positive protective devices, shall be adequately protected as shown within Standard Drawing No. TP-21 ([www.state.nj.us/turnpike/standard-drawings.html](http://www.state.nj.us/turnpike/standard-drawings.html)).
- g. All HICC construction zones shall be reviewed to determine if detours upstream of the closing are available and whether placement of additional Alternate Route Notification Signs is warranted.

### **3. Document Preparation**

The contract documents shall include the following general information:

- a. Within the contract plans, location of all proposed PVMS and existing Permanent VMS in the vicinity shall be shown. If blocking is necessary for PVMS due to large elevation differentials, indicate this information with a note. Depict the protection of the VMS trailer, whether cones, barrier, guide rail, or other.
- b. Within the contract plans, proposed messages for VMS not covered in the Standard Drawings shall be presented within the plans by the MPT Submission (i.e. HICCs and unique situations). A note can be provided for any messages that mostly comply but need slight modification from the Standard Drawings (i.e. replacing one (1) Mile callout with two (2) Miles). Additionally, a note indicating that all messages are subject to change at the discretion of the Engineer and approval by the Authority's Operations Department shall be included on all plan sheets that include VMS.
- c. Within the contract plans, duration of each sign's installation shall be clearly identified (i.e. 6 days prior to closing). A note specifying that "all VMS shall be removed at the conclusion of stage" shall be added.
- d. Within the Specifications, agency contact information, if other than the NJTA, for the use of permanent VMS or the installation of PVMS. Said contact information shall be acquired by the design engineer during the project's design phase.

**Appendix A:**  
***Acceptable Abbreviations***

This Appendix has been replicated from the  
FHWA's Manual on Uniform Traffic Control Devices (MUTCD)

**Table 1A-1. Acceptable Abbreviations**

Word Message	Standard Abbreviation
Afternoon / Evening	PM
Alternate	ALT
AM Radio	AM
Avenue	AVE, AV
Bicycle	BIKE
Boulevard	BLVD*
Bridge	(See Table 1A-2)
CB Radio	CB
Center (as part of a place name)	CTR
Circle	CIR*
Civil Defense	CD
Compressed Natural Gas	CNG
Court	CT*
Crossing (other than highway-rail)	X-ING
Drive	DR*
East	E
Electric Vehicle	EV
Expressway	EXPWY*
Feet	FT
FM Radio	FM
Freeway	FRWY, FWY*
Friday	FRI
Hazardous Material	HAZMAT
High Occupancy Vehicle	HOV

Word Message	Standard Abbreviation
Highway	HWY*
Hospital	HOSP
Hour(s)	HR, HRS
Information	INFO
Inherently Low Emission Vehicle	ILEV
International	INTL
Interstate	(See Table 1A-2)
Junction / Intersection	JCT
Lane	(See Table 1A-2)
Liquid Propane Gas	LP-GAS
Maximum	MAX
Mile(s)	MI
Miles Per Hour	MPH
Minimum	MIN
Minute(s)	MIN
Monday	MON
Morning / Late Night	AM
Mount	MT
Mountain	MTN
National	NATL
North	N
Parkway	PKWY*
Pedestrian	PED
Place	PL*

Word Message	Standard Abbreviation
Pounds	LBS
Road	RD*
Saint	ST
Saturday	SAT
South	S
State, county, or other non-US or non-Interstate numbered route	(See Table 1A-2)
Street	ST*
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Terrace	TER*
Thursday	THURS
Thruway	THWY*
Tons of Weight	T
Trail	TR*
Tuesday	TUES
Turnpike	TPK*
Two-Way Intersection	2-WAY
US Numbered Route	US
Wednesday	WED
West	W

\*This abbreviation shall not be used for any application other than the name of a roadway.

**Table 1A-2. Abbreviations That Shall be Used Only  
 on Portable Changeable Message Signs**

Word Message	Standard Abbreviation	Prompt Word That Should Precede the Abbreviation	Prompt Word That Should Follow the Abbreviation
Access	ACCS	—	Road
Ahead	AHD	Fog	—
Blocked	BLKD	Lane	—
Bridge	BR*	[Name]	—
Cannot	CANT	—	—
Center	CNTR	—	Lane
Chemical	CHEM	—	Spill
Condition	COND	Traffic	—
Congested	CONG	Traffic	—
Construction	CONST	—	Ahead
Crossing	XING	—	—
Do Not	DONT	—	—
Downtown	DWNTN	—	Traffic
Eastbound	E-BND	—	—
Emergency	EMER	—	—
Entrance, Enter	ENT	—	—
Exit	EX	Next	—
Express	EXP	—	Lane
Frontage	FRNTG	—	Road
Hazardous	HAZ	—	Driving
Highway-Rail Grade Crossing	RR XING	—	—
Interstate	I-*	—	[Number]
It Is	ITS	—	—
Lane	LN	[Roadway Name]*, Right, Left, Center	—
Left	LFT	—	—
Local	LOC	—	Traffic
Lower	LWR	—	Level
Maintenance	MAINT	—	—
Major	MAJ	—	Accident
Minor	MNR	—	Accident
Normal	NORM	—	—
Northbound	N-BND	—	—
Oversized	OVRSZ	—	Load
Parking	PKING	—	—
Pavement	PVMT	Wet	—
Prepare	PREP	—	To Stop
Quality	QLTY	Air	—
Right	RT	Keep, Next	—
Right	RT	—	Lane
Roadwork	RDWK	—	Ahead, [Distance]
Route	RT, RTE	Best	—
Service	SERV	—	—
Shoulder	SHLDR	—	—
Slippery	SLIP	—	—
Southbound	S-BND	—	—
Speed	SPD	—	—
State, county, or other non-US or non-Interstate numbered route	[Route Abbreviation determined by highway agency]**	—	[Number]
Tires With Lugs	LUGS	—	—
Traffic	TRAF	—	—
Travelers	TRVLRS	—	—
Two-Wheeled Vehicles	CYCLES	—	—
Upper	UPR	—	Level
Vehicle(s)	VEH, VEHS	—	—
Warning	WARN	—	—
Westbound	W-BND	—	—
Will Not	WONT	—	—

\* This abbreviation, when accompanied by the prompt word, may be used on traffic control devices other than portable changeable message signs.

\*\* A space and no dash shall be placed between the abbreviation and the number of the route.

**Table 1A-3. Unacceptable Abbreviations**

<b>Abbreviation</b>	<b>Intended Word</b>	<b>Common Misinterpretation</b>
ACC	Accident	Access (Road)
CLRS	Clears	Colors
DLY	Delay	Daily
FDR	Feeder	Federal
L	Left	Lane (Merge)
LT	Light (Traffic)	Left
PARK	Parking	Park
POLL	Pollution (Index)	Poll
RED	Reduce	Red
STAD	Stadium	Standard
WRNG	Warning	Wrong