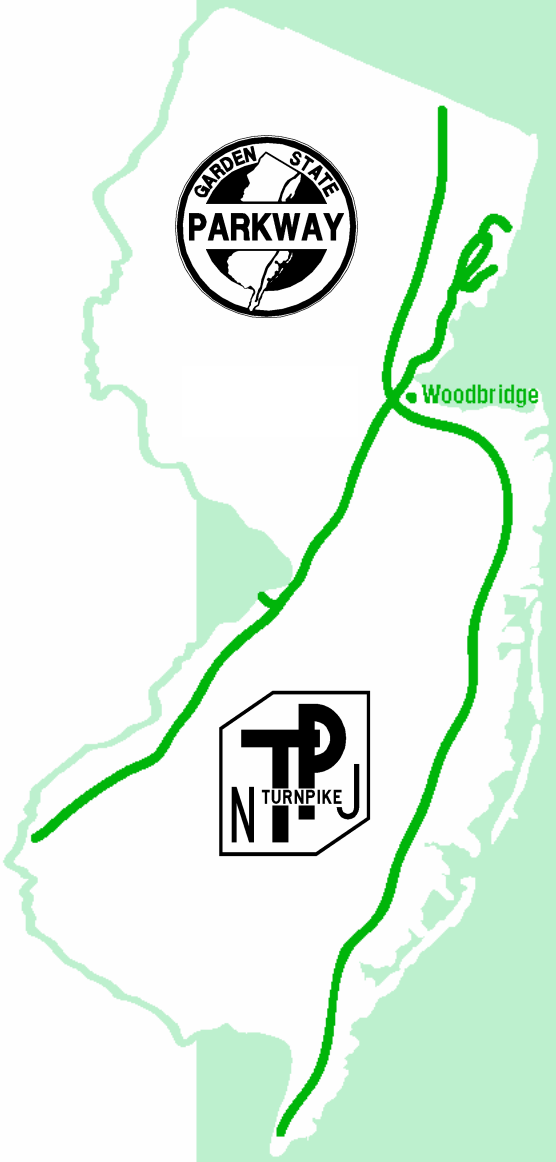
NEW JERSEY TURNPIKE AUTHORITY

GARDEN STATE PARKWAY

NEW JERSEY TURNPIKE



GUIDELINES FOR VMS SYSTEM USE WITHIN CONSTRUCTION WORK ZONES

Revised September 2020

TABLE OF CONTENTS

I. PURPOSE OF GUIDELINE

The "Guidelines for VMS System use within Construction Work Zones" has been developed to:

- Acquaint the design consultant and New Jersey Turnpike Authority (Authority, NJTA) 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 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 on the Authority's Roadways.
- Elaborate on design recommendations for Portable Variable Message Sign (PVMS) placement especially during High Intensity Construction Cycles (HICCs), which are not covered in the Authority's Standard Drawings or Work Zone Manual.

This document is not intended to be a standard, but rather a guideline for use and focuses on both effective messages and location/duration of said messages. 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 Authority's 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: an overview of variable message signs; construction messages; application for usage; and design procedure - general guidance and procedures. Included in Appendix A are acceptable and unacceptable abbreviations for words used on VMS. The user should also refer to the most current version of the Authority's Standard Drawings, which can be found at: https://www.njta.com/doing-business/professional-services/standard-drawings.

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. Improper display designs and operations have a negative impact on public perception of trustworthiness of the signs and therefore should be minimized.

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) manners of VMS installations: Fixed and Portable (PVMS). Fixed (aka permanent installations) and Portable (aka temporary installations) are currently used along the Turnpike and Parkway roadways concurrently and are described as follows:

A. Fixed (aka Permanent) Variable Message Signs

There are three (3) types of Fixed VMS currently installed along the Turnpike and the Parkway roadways; they are: Changeable Message Signs, Electronic VMS, and Variable Speed Limit Signs (VSLS). These signs are often used for urgent communication with the travelling public such as amber alerts, travel times, and incident notification.

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

1) Changeable Message Signs (CMS) and Hybrid Changeable Message Signs (HCMS)

Changeable Message signs consist of pre-determined messages on rotating drums that can be changed remotely. These signs are being replaced with the Hybrid Changeable Message signs. They were typically seen over the theoretical gore of major points of driver decision where the alternative path would enable the driver to reach the same destination. For example, this includes the entrance ramps to the Inner/Outer Roadways or the Express Local Roadways as well as the mixing bowl areas and service area ramps. 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 Statewide Traffic Management Center (STMC) located in Woodbridge, NJ, can change the sign messages. The typical message should be included on the contract plans. See Figure 1.

Figure 1. Changeable Message Signs

Figure 2. Electronic VMS

2) Electronic VMS

The Authority has overhead Electronic VMS along both the Turnpike and Parkway. Overhead Electronic VMS are remotely controlled by the STMC, which are capable of providing complete and up to the minute information and can be utilized to provide detailed messages. See Figure 2.

The Electronic VMS also display typical travel times to certain destinations to inform the travelling public of any anticipated delays.

Figure 3. Stand-alone VSLS

3) Variable Speed Limit Signs (VSLS)

VSLS consist of a speed limit sign with a variable speed limit display and are either stand along signs or are affixed to the Authority's overhead Electronic VMS sign structures.

VSLS 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 VSLS boards fall within the limits of a lane closing, the

Figure 4. Fixed Electronic VMS with adjacent VSLS on overhead sign structure

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 VSLS are enforceable. See Figures 3 and 4.

B. Portable Variable Message Signs (PVMS)

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 Repair and Rehabilitation projects. In addition to their portability, these signs have added flexibility of being remotely controlled.

Figure 5. PVMS

American Association of State Highway and Transportation Officials (AASHTO) has published the Manual for Assessing Safety Hardware (MASH) in 2016. Temporary work zone devices, including portable variable message signs manufactured after Dec. 31, 2019, must have been successfully MASH 2016 tested, installed outside the clear zone or installed behind an existing (or provided) positive protection roadside device (such as barrier or guiderail) as illustrated on the Authority's Standard Drawing for Portable Variable Message Signing.

Screen display options include continuous line matrix (the screen has three (3) set lines, but not a set number of characters), full matrix (no set number of lines or characters), and modular screen (screen has three (3) lines with eight (8) 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 (3) - eight (8) character lines per flash. These screens are typically mounted on an 80" to 85" wide by 110" to 200" long trailer with a hitch, depending on the manufacturer.

Studies have been performed in conjunction with the FHWA to determine message visibility and design. Typically on Authority owned right-of-way, no more than two (2) flashes are recommended for use due to the roadway travel speed and the amount of information a driver can process; since the number of characters is limited, abbreviations are necessary. New abbreviations shall not be created; standard acceptable 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. 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/ltpp/reports/03066/#intro.

III. CONSTRUCTION PVMS USES

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

A. 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 PVMS to be placed 2 miles prior to the work area (a ¼ mile deviation of this location is permitted), but in some instances, the taper point for the associated lane or shoulder closing is farther than 2 miles from the work area. Therefore, these signs are to be placed typically 1 to 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 PVMS may be installed for 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 PVMS, the locations shall be verified with the Authority's Operations Department to ensure that the traveling public does not become desensitized through overuse.

Construction Notification PVMS are to be placed six (6) calendar days in advance of the actual stage for long-term work zones and 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 PVMS are not required if the construction MPT consists only of a shoulder closing, but may be necessary (after consultation with the Authority's Operations Department during design Phase reviews) with a reduction in the number and/or width of lanes, or a shift during HICCs and long-term closings.

These PVMS allow motorists to better prepare for the upcoming construction activities by allowing time for the motorist to review possible planning of alternate routes and thereby assist in diverting a portion of the traffic from the work zone by informing of future potential delays. During the closing, these signs are left in place to inform motorists of upcoming conditions such as lane shifts or lane closures.

B. Supplemental Information

The purpose of Supplemental Information PVMS (also known as advisory messages) is to provide more information than just the static signs within the MPT. This provides the traveling public with information pertaining to a specific situation along their route to allow them to make adequate modifications to their travel speed or path. 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 PVMS 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. Supplemental information should not be displayed when a work zone is not active.

C. Alternate Route Notification

Alternate Route Notification PVMS 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 as determined after consultation with the Authority's Operations Department during design Phase reviews. Ramp closures will also require alternate route notification through use of PVMS and static detour signs. These PVMS and static detour signs shall be provided approximately 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 PVMS, the motorist is alerted to construction via traffic bulletins on the radio, internet, local newspapers, and the SafeTrip NJ App per the Authority's press release procedures document.

IV. APPLICATION FOR PVMS USE DURING CONSTRUCTION

PVMS 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 work zones can be found on the 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 reviews by the Authority's Operations Department in cooperation with Engineering and the design engineer. During standard design Phase reviews, the Authority's Operations Department 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 PVMS to convey the information clearly. Examples of PVMS messages during the different applications are as follows:

A. Days Prior to Construction

1. <u>Construction Notification</u>

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

These PVMS shall have two (2) flashes outlining the work to be performed as follows. Exact messages to be used shall be in accordance with the latest Standard Drawings or as approved by the Authority's Operations Department for HICCs and long-term stages.

	First Message	Second Message (Long-term stages)	Second Message (HICC stages)
Ramp Closing	EXIT XXX TO CLOSE	STARTING **DAY** **TIME**	**DAY**TIME** TO **DAY**TIME**
Mainline Work	ROAD WORK	STARTING **DAY** **TIME**	**DAY**TIME** TO **DAY**TIME**
Lanes to Shift	LANE(S) SHIFT X MI	STARTING **DAY** **TIME**	**DAY**TIME** TO **DAY**TIME**

Acceptable abbreviations for **DAY** are SUN, MON, TUE, WED, THU, FRI, and SAT. It is important to note that these abbreviations are different than the ones listed in Appendix A, but are the Authority's standard. Acceptable abbreviations for **TIME** are the numeral followed by AM or PM without a space such as 6AM. Acceptable abbreviations for **DAY**TIME** are the day as noted above and the time as noted above such as MON 6AM. Punctuation is not permitted except for the solidus of a fraction.

2. Supplemental Information

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

3. Alternate Route Notification

Alternate Route Notification PVMS are typically placed significantly upstream of the work zone (typically 2 miles prior to the aforementioned motorist decision point) and due to distance from work zone, 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 PVMS be installed up to two (2) weeks in advance of the long-term closing along their roadways with approval from the Authority's Operations Department.

These PVMS should be provided based on the recommendations of the design engineer and with approval / concurrence from the NJTA Engineering and Operations Departments and / or governing agencies (if outside Authority jurisdiction). Please note that static signs shall be used to denote any locations of full closure of a local roadway.

	First Message	Second Message (Long-term stages)	Second Message (HICC stages)
Additional Requested Alternate Route PVMS	ROADWORK SOUTH OF EXIT XX	STARTING **DAY** **TIME**	**DAY**TIME** TO **DAY**TIME**

Additional PVMS may be provided at the work zone to notify traveling public about pending construction to take an alternative route, but this is covered under Construction Notification above.

B. During Construction

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 Standard Drawings or as approved by the Authority's Operations Department.

	First Message	Second Message
Ramp Closing	EXIT XXX CLOSED 2 MI	FOLLOW DETOUR
Lanes to Shift (rare applications)	LANES SHIFT 2 MI	STAY IN LANE AHEAD
Lane Closed	RT LANE CLOSED 2 MI	MERGE LEFT

2. Supplemental Information

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

	First Message	Second Message
Shifts with heavy Truck Traffic	ALL LANES THROUGH	TRUCKS KEEP RIGHT
Exit	EXIT 11 1/2 MI	KEEP RIGHT

3. Alternate Route Notification

During construction work zones for long-term or HICC closings, Alternate Route Notification PVMS 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:

	First Message	Second Message
Mainline Work	ROADWORK SOUTH OF EXIT 13	USE ALT ROUTE

V. PVMS 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 Authority's 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 Drawings 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:

A. Design Procedures

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

1. The latest MUTCD, AASHTO Roadside Design Guide, Authority Specifications, and Authority Manual for Traffic Control in Work Zones.

2. If applicable, messages shall be per Authority's Standard Drawings for Portable Variable Message Signing. 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.

3. Design engineer shall provide plans depicting the location of the PVMS and the associated MPT for the Authority's Operations Department review within the MPT Submission or Phase C.

4. Consideration shall be given to the use of acceptable abbreviations and Authority Approved abbreviations (e.g. SUN, MON, etc.) to avoid misinterpretation by the travelling public. See Appendix A for examples of acceptable and unacceptable abbreviations.

B. Design Consideration

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

1. *Construction Notification PVMS placed in advance and prior to the start* of construction shall be in place and operational six (6) calendar days prior to the beginning of construction for long-term stages and HICCs.

   Construction Notification PVMS placed in advance and during construction stages shall be positioned 1 to 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.

2. *Supplemental Information* PVMS 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.

3. *Alternate Route* PVMS 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's Operations Department.

   For HICCs, the Alternate Route Notification Sign shall be in place and operational on the first evening of the HICC. The VMS must be located far enough upstream of the upstream exit, or crossover onto adjacent same direction roadway, to allow the motorist to comfortably make a decision whether to leave the roadway.

Note: The locations of Alternate Route Notification and Construction Notification PVMS shall be reviewed by the design engineer to ensure they are not in conflict with each other. Any Fixed (aka 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 Fixed VMS cannot be expected in any case.

4. The design engineer shall identify the locations of any existing Fixed VMS on plans. Fixed VMS are not to be used in lieu of PVMS, as required by design. The existing, Fixed VMS 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 Authority Standards. At the request of the design engineer, these signs may be utilized if available and at the discretion and approval of the Authority's Operations Department. This usage of Fixed VMS signs is rare, is for very major traffic pattern changes and helps alert the traveling public along with other forms of impact notification. These sign messages may be superseded during implementation if other more critical messages require display (incident notification, amber alerts, etc.).

5. 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. Additionally, the design engineer should note if brush clearing/trimming is required to provide adequate sight distance.

6. 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 for Portable Variable Message Signing (https://www.njta.com/doing-business/professional-services/standard-drawings.).

7. Placement of PVMS can be placed ¼ mile upstream or downstream of 1-mile mark and 2-mile mark if necessary.

8. All HICC work zones shall be reviewed by the Design Engineer to determine if detours upstream of the closing are available and whether placement of additional Alternate Route Notification PVMS is warranted.

9. Using mileposts on the signing in advance and during scheduled work is not permitted.

C. Document Preparation

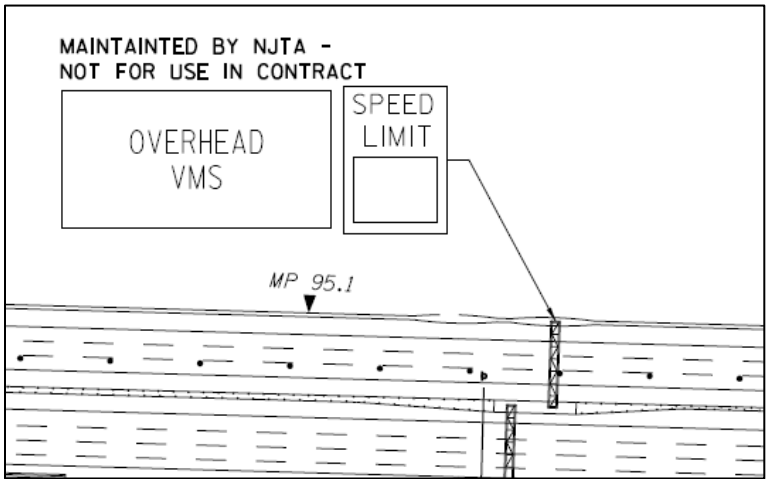
The Contract Documents shall include the following general information:

1. Within the contract plans, location of all proposed PVMS and existing Fixed 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 PVMS trailer, whether cones, barrier, guide rail, or other. Also indicate with a note if brush is required to be cleared to provide visibility.

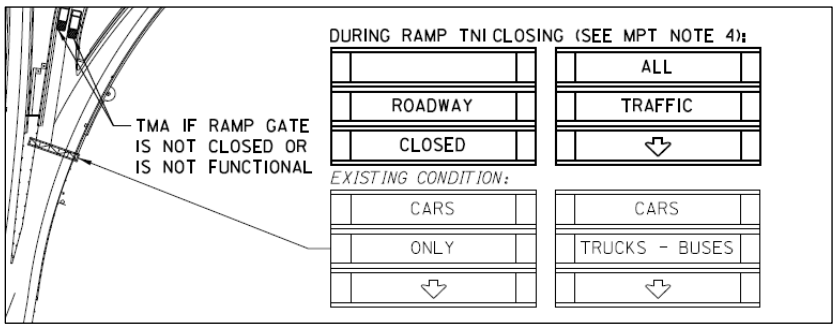
2. Within the contract plans, proposed messages for PVMS not covered in the Standard Drawings shall be presented within the plans by the Phase C Submission (i.e. HICCs and unique situations). A note can be provided for any messages that mostly comply but need slight modification from the Standard Drawings (i.e. replacing 1 Mile callout with 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 PVMS.

3. Within the contract plans, duration of each PVMS installation shall be clearly identified (e.g. six (6) calendar days prior to closing). A note specifying that "all VMS shall be removed at the conclusion of stage" shall be added.

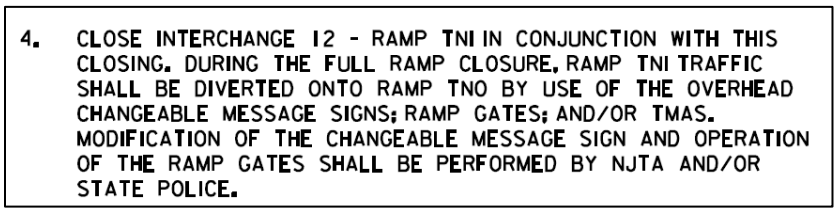
4. Existing overhead Electronic VMS shown on the plans shall be labeled as "Maintained by NJTA – Not for use in Contract" or other similar NJTA Operations Department approved language when device is Authority owned. Other agency owned signs shall be labeled similarly.



5. Existing changeable message signs (CMS) or hybrid changeable message signs (HCMS) shown on the plans shall be labeled with a note similar to "Maintained by NJTA – Not for use in Contract". In the contract documents, these signs shall bear its normal message unless the MPT requires their use to close roadways or to divert traffic. In which case, the normal message (as existing) and "during MPT" message as proposed shall be depicted on the plans. Below is a typical depiction of the CMS signage altered for MPT needs:



6. Notes shall be provided identifying control/operation of devices by NJTA and or state police.



7. Within the Specifications, agency contact information, if other than the Authority, for the use of Fixed VMS or the installation of PVMS. Said contact information shall be acquired by the design engineer during the project's design phase.

Appendix A:

Abbreviations used on Traffic Control Devices

This Appendix has been replicated from the
FHWA's Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition
Design Engineer shall use the most recent edition of the 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

Abbreviation	Intended Word	Common Misinterpretation
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