

VIRGINIA DEPARTMENT OF TRANSPORTATION

TRAFFIC ENGINEERING DIVISION

MEMORANDUM

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| GENERAL SUBJECT: SPEED LIMITS, ADVISORY SPEEDS, SIGNS | NUMBER: TE-374.1 |
| | SUPERSEDES: TE-374.0 |
| SPECIFIC SUBJECT: Pole Mounted Speed Display Signs: Requirements | DATE: April 26, 2013 |
| | SUNSET DATE: Upon inclusion in the Virginia Supplement to the MUTCD |
| DIRECTED TO: District Administrators Regional Operations Directors Residency Administrators District Land Use Engineers Regional Traffic Engineers Regional Operations Maintenance Managers | SIGNATURE: State Traffic Engineer <i>Raymond J. Khoury</i> |

Background & Need

Pole Mounted Speed Display (PMSD) signs are installed to provide a real-time, dynamic display of a driver’s vehicular speed. PMSD signs, referred to as “changeable message signs displaying approach speeds,” are allowed under Part 2 of the MUTCD (Section 2B.13 in the 2009 version) where general guidance for their use is provided. These signs are installed in conjunction with regulatory speed limit (R2-1) or advisory speed signs in order to provide drivers with immediate confirmation of their actual speed in relation to the posted speed limit or advisory speed.

These signs provide a mechanism to reduce vehicle speeds at locations where driving the posted speed limit or advisory speed is particularly critical, such as; in residential and other pedestrian-oriented areas; or, at locations where there are speed-related safety concerns. Some reports on the application of these signs indicate they can promote a reduction in vehicle speeds up to 5 mph, however the actual results achieved at any particular location may be substantially less.

This document is presented to establish implementation requirements and guidance with regard to PMSD signs (future version of the Virginia Supplement to the MUTCD will reference these signs as R2-VP2). Portable Speed Trailers utilize changeable message signs to display approach speeds signs similar to PMSD signs; however, since they are much more portable, their use is less prescriptive and is not addressed in this document.

Requirements

Roadway Conditions

The roadway is state-maintained having a speed limit or advisory speed appropriately established and posted for the roadway conditions in accordance with VDOT practice and either of the following applies;

1. The roadway is residential and/or pedestrian oriented with no more than two lanes (one lane per travel direction) with a posted speed limit of 40 mph or less where the 85th percentile speed exceeds the posted speed limit by at least 10 MPH for the travel direction(s) and time period of concern or (see note below);
2. Other non-residential locations deemed appropriate by the Regional Traffic Engineer such as to encourage compliance for advisory speed conditions (at a curve etc.) or to address locations with identified, speed-related safety concerns.

Note: A residential roadway that qualifies for traffic calming and where VDOT is participating in funding shall be referred to VDOT's traffic calming process, which provides that a PMSD sign can be considered as part of an overall traffic calming plan that likewise considers the usage of other measures and devices, using the process outlined in VDOT's "Traffic Calming Guide for Residential Streets."

Sign

- The sign shall use a yellow legend on a black background or the reverse of those colors and be incorporated with the posted regulatory speed limit sign (R2-1) or, where used for advisory speed conditions, with a posted warning sign (e.g. W1-1, W1-2, W1-5, W1-11, W1-15 etc.) that indicates an advisory speed (e.g. W13-1P etc.). **See Figure 1 below for PMSD sign conforming to the 2009 MUTCD.**
- PMSD signs and sign support assembly and installation shall meet the requirements for crash-worthiness defined in AASHTO's Manual for Assessing Safety Hardware (MASH) or in the National Cooperative Highway Research Program (NCHRP) Report 350.
- If the sign is installed and maintained by a locality, identification and contact information for the locality shall be displayed on the PMSD sign, but not on the side that faces approaching traffic.

Placement

- A single PMSD sign should be placed at the location and in the travel direction(s) approaching the area where there is a speeding issue.
- The PMSD sign should be used at locations where a longer-term need is identified. Speed trailers are typically used for short-term applications.

Installation

- The PMSD sign should be mounted on the same pole and directly below, the speed limit (R2-1) sign or a warning sign (e.g. W1-1, W1-2, W1-5, W1-11, W1-15 etc.) indicating an advisory speed (e.g. W13-1P etc.). **See Figure's 2 & 3 below for PMSD sign applications.**

- Installer should confirm that the retroreflectivity of the R2-1 or warning sign / advisory speed plaque is sufficient for the motorist to appropriately perceive the regulatory or warning /advisory conditions at nighttime in conjunction with the PMSD sign installation.

Operation

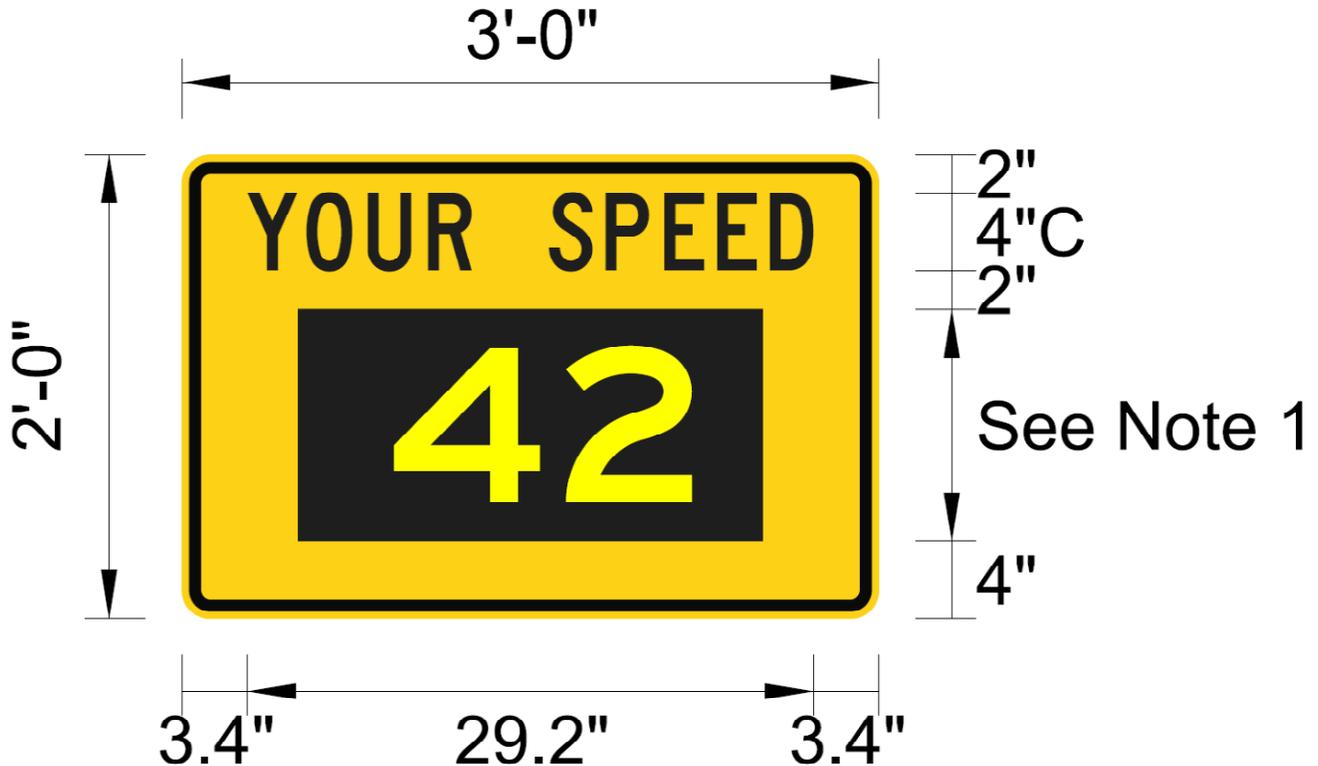
- When installed to reinforce a speed limit reduction that is active for a certain time of day, the PMSD signs shall operate only when the reduced speed limit is in effect, and at other times shall display two dashes indicating the system is not operating.
- The changeable display shall be programmed to go blank/no display when the vehicle exceeds the posted speed limit by 20 mph or more.
- Other than the speed display, the PMSD sign shall not incorporate animation, flashing, or any dynamic elements.

Approval

- The Regional Traffic Engineer or designee shall approve the PMSD signs to be used as well as the intended installation and placement.

Figure 1

Pole Mounted Speed Display (PMSD) Supplemental Sign (R2-VP2)



Notes:

1. 8" E text in a rectangle 12 inches in height is shown for this illustration. The dimensions for both the variable text and the rectangle are minimums.
2. Overall sign and/or text dimensions may vary, depending on manufacturer specifications.

Figure 2

Speed Limit sign (R2-1) with PMSD sign (R2-VP2)



Figure 3

Warning Sign (W1-2) with Advisory Speed Plaque (W13-1p) and PMSD sign (R2-VP2)



References

- FHWA's Manual on Uniform Traffic Control Devices (MUTCD)
- Virginia Supplement to the MUTCD
- VDOT Road & Bridge Standards
- VDOT Road & Bridge Specifications

CC: Mr. Greg Whirley
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Mr. Garrett Moore
Mr. Mohammed Mirshahi
Regional Traffic Engineers
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