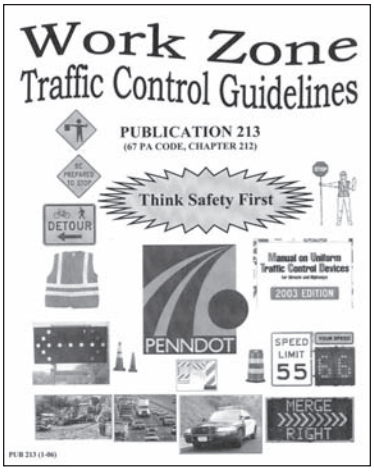
PennDOT LTAP
technical
INFORMATION
SHEET #133
SUMMER 2007

Work Zone Traffic Control—Using Publication 213

Work zone traffic control is essential to the safety of motorists, workers, and pedestrians. Unfortunately, as motorists encounter construction zones on our roadways, frustration and the inherent need to reach a destination quickly overshadow the fact that work zones are necessary if our roadways and infrastructure are to be maintained. Generally, the number of vehicle miles traveled each year is growing at a faster rate than miles of roadway. As this increase takes place, the need to repair our aging infrastructure is amplified. Effectively managing work zones for mobility and safety will be a constant challenge for years to come.

To address the aforementioned issues, on September 9, 2004, the Federal Highway Administration (FHWA) published the Work Zone Safety and Mobility Rule in the Federal Register (69 CFR 54562). This rule updates and renames the former regulation on "Traffic Safety in Highway and Street Work Zones" in 23 CFR 630 Subpart J. All state and local governments that receive federal-aid highway funding are affected by this updated rule and are required to comply with its provisions no later than October 12, 2007.

As explained in Tech Sheet 126 Summer 2006, on February 4, 2006, PennDOT officially added Chapter 212 to Title 67, The Pennsylvania Code, which formally adopts the Manual on Uniform Traffic Control Devices (MUTCD). Publication 212, Official Traffic Control Devices, and Publication 213, Work Zone Traffic Control, are provided as supplements. The MUTCD and PennDOT Publication 213 now replace PennDOT Publication 203M, Work Zone Traffic Control.



USING PUBLICATION 213

Publication 213 is intended for use as a guide to aid in the development of work zone traffic control measures. The manual provides diagrams (figures) of typical work zone scenarios that show minimum desired applications. The figures provide indication of such things as:

- type, quantity, and spacing of advance warning and regulatory signs;
- taper rates and spacing of channelizing devices;
- minimum distances from tapers to work space;
- location of flaggers; and
- general notes, etc.

The publication is intended as a guide of minimum requirements, and as such, users should keep in mind that additional provisions may be required depending upon the complexity of the situation. As presented in the "Application" page of the publication, "Administration should be based on common sense; engineering judgment; speed and volume of traffic; the duration of the operation; the exposure to potential hazards; the physical features of the highway including horizontal alignment, vertical alignment and the presence of intersections and driveways; and other important factors."

The first step in determining what application or figure is appropriate for your work zone scenario is to use the Reference Guide for Typical Figures. Consider the reference guide as your table of contents for Publication 213. Determine the following information about your work zone, and use it in conjunction with the guide to determine the applicable figure.

- Type of highway where the work is being performed;
- Condition listed in the table that best represents the scenario;
- Whether the operation is a short-term or long-term duration; and
- If the operation is short-term, whether it is stationary or mobile.

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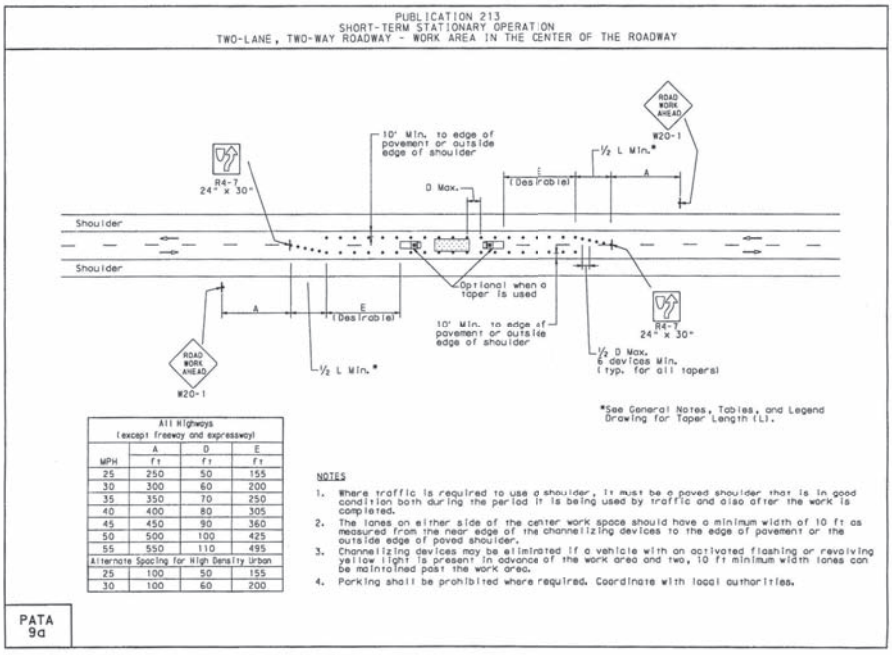
Please note that the page titled "Publication 213, Act 229 Guidelines" (ACT 229) provides additional information and required signage that is common to all PATA standard figures.

As with many guides or methods, the best way to become familiar with its use is by example.

> ***Example**: Work is necessary to repair an area of pavement in the center of a two-lane, two-way facility. The roadway has 12-foot travel lanes, 8-foot paved shoulders, and a posted speed limit of 45 miles per hour.*

Approaching the first column of the guide, the type of highway would be a two-lane, two-way facility. In this case, operation would be short-term and stationary since it involves minor pavement repair. The condition would be "work area in the center of the roadway," thus yielding PATA 9a as the appropriate figure for the condition (see illustration). The figure illustrates what advance warning and regulatory signs (per MUTCD) are necessary, the distance required for advance warning sign placement (A), the maximum distance between channelizing devices (D), the required taper length (L), whether a shadow vehicle or vehicles are required, and what distance (E) is desired between the shadow vehicle and the end of the taper.



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In this case, since the posted speed limit is 45 miles per hour, values for A, D, and E are 450, 90, and 360 feet respectively. In this scenario, a shadow vehicle is optional since a taper is used. The taper length (L) is determined by using Tables 1, 2, or 3 of the "General" pages in the publication. To maximize the work area in this example, the offset in each direction would be 10 feet, thus yielding a 450-foot taper length from Table 2 (maintaining the minimum required 10-foot travel lane per the note on PATA 9a).

However, in the case of the above example, if shoulders were either not present or not of sufficient width or condition, an alternate scenario, perhaps a flagging condition (PATA 10a) or other condition, would be required. Furthermore, it is important to repeat that the guidelines shown represent the minimum desirable traffic control and that good engineering judgment and common sense should always be used.

WHERE CAN I VIEW THESE DOCUMENTS?

The MUTCD can be found at http://mutcd.fhwa.dot.gov/;

Chapter 212 can be found at www.pabulletin.com/secure/data/vol36/36-5/179.html; and

Chapter 213 can be found on PennDOT's Web site at www.dot.state.pa.us. Click on Forms and Publications, PennDOT Publications and Maps, and the link for 213.

You can also order a hard copy of the MUTCD from one of the following organizations:

AASHTO: www.transportation.org/publications/bookstore.nsf/;

ITE: www.ite.org/bookstore/; and

ATSSA: www.atssa.com/store/.