MINNESOTA DEPARTMENT OF TRANSPORTATION
Engineering Services Division
Technical Memorandum No. 06-24-T-06
July 25, 2006

FOR HISTORICAL REFERENCE ONLY

To: Distribution 57, 612, 618, and 650

From: Richard Stehr
Division Director, Engineering Services

Subject: Guideline for the Application of Tubular Markers and Weighted Channelizers for Temporary Traffic Control

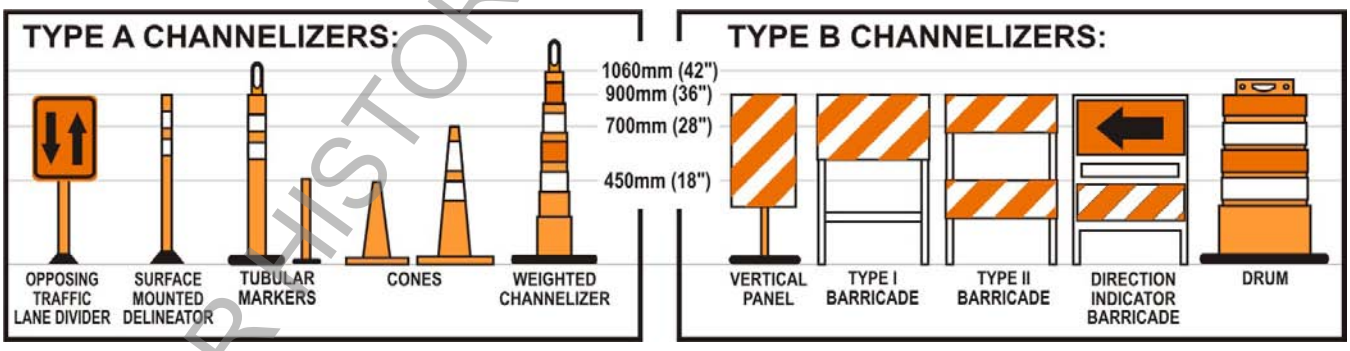
Expiration
This is a new Technical Memorandum. The provisions of this technical memorandum shall remain in force until June 25, 2011 or until this information is included in the Traffic Engineering Manual.

Implementation
The provisions of this technical memorandum shall be implemented on all construction projects let after September 1, 2006. All maintenance operations shall comply with the requirements of this technical memorandum as soon as practical, but no later than January 1, 2007.

This guideline applies to Mn/DOT operations only. Local road authorities are encouraged to assess their needs and establish practices appropriate to their operations.

Introduction
The MN MUTCD contains specific standards and guidelines for the design and application of Channelizing Devices. These standards and guidelines are based on the ability of various devices to provide proper guidance and warning to drivers and pedestrians.

Sections 6F.58 through 6F.67 of the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) contain specific standards and application guidelines for all channelizing devices. Channelizing devices are further divided into 2 basic types, Type A and Type B as shown in the figure below:



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Type A and Type B channelizers are typically deployed as follows:

Duration of Channelizer Deployment	Channelizer Use		
	Delineate		Mark Locations
	Transition Areas (tapers and shifts)	Tangent Areas	
Long Term (3 calendar days or more)	B	B	B
Intermediate Term (more than one shift but less than 3 calendar days)	B	B	B
Short term night (1 shift or less)	B	A or B	A or B
Short term day (1 shift or less)	A or B	A or B	A or B

Purpose
The purpose of this technical memorandum is to clarify the standards as found in the MN MUTCD and establish a guideline for Mn/DOT maintenance and construction projects related to the application of Tubular Markers and Weighted Channelizers.

There have been many questions on the proper application of tubular markers and weighted channelizers for specific situations. The primary issue is the use of these channelizing devices in place of drums or other Type B channelizers in tapers and to delineate the travel path through a work zone.

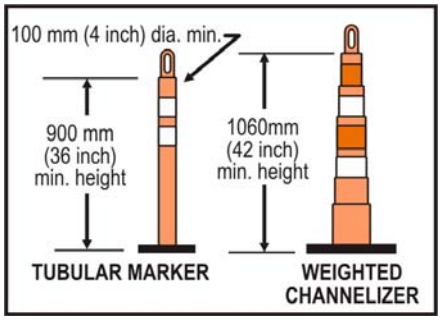
Guideline

Temporary traffic control plans and/or special provisions shall specify the channelizer type required for all applications on a project. Typically long term and intermediate term applications use Type B channelizers.

The standards and guidelines for the application of tubular markers and weighted channelizers are contained in the MN MUTCD which provides for the following:

The primary purpose of tubular markers and weighted channelizers is to effectively divide opposing lanes of road users or to divide motor vehicle traffic lanes when two or more lanes are kept open in the same direction.

Tubular markers and/or weighted channelizers may be used in place of Type B channelizers under the following conditions only:



1. Weighted channelizers may be used in place of the Type B channelizers for delineation in non-transition areas where Type B channelizers cause a localized sight restriction.
2. Weighted channelizers may be used in place of the Type B channelizers to delineate the edge of a pavement drop off of 100mm (4 inches) or less where there is inadequate space for Type B channelizing devices.
3. 900mm (36 inch) tubular markers may be used in place of the Type B channelizers to delineate the edge of a pavement drop off of 100mm (4 inches) or less where there is inadequate space for Type B channelizing devices on a rural highway.
4. Weighted channelizers may be used to mark specific locations for isolated maintenance repairs.

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For the purpose of this guideline:

- Inadequate space for Type B channelizing devices is defined where the presence of the device will cause the lane to be less than 3m (10 feet) wide or will cause the driver to leave his travel lane.
- Localized sight restriction is where Type B Channelizing devices block drivers' sight of traffic, pedestrians or roadway geometry.
- Rural highway is a type of roadway normally characterized by lower volumes, higher speeds, less visual clutter, fewer conflicting light sources at night, reduced access points, and fewer turning, merging and pedestrian conflicts.

Typical Special Provisions
If the traffic control plan does not have a channelizer type specified or there is no traffic control plan layout for the project, the following typical special provisions shall be used for the construction project:

(1404) GENERAL REQUIREMENTS:
This language will give the Districts the ability to designate which operations will be allowed to utilize the Type A channelizers.

On _____ operations, weighted channelizers (Type A) may be used in place of drums (Type B) for delineation in non-transition areas and also to delineate the edge of a pavement drop-off of 100mm (4 inches) or less.

On _____ operations, 900mm (36 inch) tubular markers (Type A) may be used in place of drums (Type B) for delineation in non transition areas or to delineate the edge of pavement drop-off of 100mm (4 inches) or less.

S-1 MILLING, SEAL COATING, AND PAVING OPERATIONS

Optional paragraph:

On milling, paving, and seal coating operations, weighted channelizers (Type A) may be used in place of drums (Type B) for delineation in non-transition areas and also to delineate the edge of a pavement drop-off of 100mm (4 inches) or less.

Optional paragraph for rural highways only:

On milling, paving, and seal coating operations, 900mm (36 inch) tubular markers (Type A) may be used in place of drums (Type B) for delineation in non transition areas or to delineate the edge of pavement drop-off of 100mm (4 inches) or less.

Exceptions
The guidance contained in this technical memorandum for the application of tubular markers and weighted channelizers include all of the uses of these devices allowed in the MN MUTCD. Section 1A.10 "Interpretations, Experimentations, Changes, Interim Approvals and Minnesota Conditions Use" of the MN MUTCD requires that all "Design, application and placement of traffic control devices other than those adopted in the Manual shall be prohibited unless the provision of this Section are followed." Therefore, any other application of these devices must follow MN MUTCD procedures by requesting to experiment, in writing to the State Traffic Engineer. The Office of Traffic, Security and Operations will then coordinate the proper procedure for the requested experimentation.

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Questions

For information on the technical contents of this memorandum, please contact Marv Sohlo, State Work Zone Engineer at (651) 634-5431. Any questions regarding the publication and distribution of this Technical Memorandum should be referred to Sophia Wicklund, Design Standards Unit at 651-296-3190, or Michael Elle, Design Standards Engineer at 651-296-4859. All active Memoranda and a list of historical Technical Memoranda can be viewed at http://www.dot.state.mn.us/tecsup/tmemo/index.html.

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