April 12th, 2016

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SUBJECT: Recommendations for Consideration by the Minnesota Committee on Uniform Traffic Control Devices to Revise the Minnesota Manual on Uniform Traffic Control Devices for Temporary Traffic Controls on Low Volume Streets and Highways

Dear Ms. Anderson,

The Minnesota Local Road Research Board (LRRB) recently established a Technical Advisory Panel to address the concerns of local agencies regarding temporary traffic control guidelines outlined in the Minnesota Manual on Uniform Traffic Control Devices Field Manual. A goal of the TAP was to make recommendations to the Minnesota Committee on Uniform Traffic Control Devices to revise the Field Manual, specifically *Part K Temporary Traffic Control Zone Layouts*. The recommendations are aimed to assist local agencies in providing improved and safer temporary traffic controls for their maintenance operations.

The TAP has determined that many layouts within the manual contain unnecessary and sometimes excessive requirements for applications — specifically for lower volume local road systems with unique design and traffic characteristics. In addition, the temporary traffic control layouts contained in the manual are biased toward the experience and needs of MnDOT, focusing on high volume, high speed Trunk Highways. While it is necessary to address the various temporary traffic control needs for a statewide transportation system, it results in a difficult and time consuming effort for local road authority field operations personnel to determine the appropriate layouts and standards that are needed for their project.

The TAP would appreciate the MCUTCD to consider revisions to the MN MUTCD and Temporary Traffic Control Zone Layouts, Field Manual. These include:

- Application of channelizing devices on low volume roads.
- Refining requirements and device spacing on low volume low speed residential streets.
- Providing a new section in the Field Manual for low volume rural highways.

## Application of Channelizing Devices

The guidance and standards for the application of channelizing devices in the MN MUTCD are applicable to all roadways and all temporary traffic control zones regardless of traffic speed, traffic volume, and roadway design. The LRRB Task Force recommends that the MCUTCD consider developing guidance for inclusion in PART 5. TRAFFIC CONTROL DEVICES FOR LOW VOLUME ROADS, Chapter 5G. Temporary Traffic Control Zones that allow for the completion of short-term work (up to 12 hours) on low volume (<400 ADT) roadways without channelizing devices where the work space is short, vehicle paths are clearly visible, work space is frequently moving, and risk to workers and the traveling public is not compromised.

To accomplish this the following language is recommended for inclusion in **Chapter 5G.3 Channelization Devices**:

> Option: (existing language)
>
> To alert, guide and direct road users through temporary traffic control zones on low volume roads, tapers may be used to move a road user out of the traffic lane and around the work space using the spacing of devices that is described in Section 6F.58.
>
> Option: (new language)
>
> Short-term daylight hour maintenance operations that typically have short work spaces, clearly visible vehicle paths and offer limited risk to workers and road users may omit the routine use of channelization devices. Channelization devices may also be omitted if flaggers give specific instructions to drivers on how to proceed through the work zone.
>
> Guidance: (new language)
>
> Channelization devices should be used if road users should be guided in a clear and positive manner while approaching and within construction, maintenance, and utility work areas.

## Low Volume Low Speed Residential Streets

- The MN MUTCD defines Roadway as, "that portion of a highway improved, designed, or ordinarily used for vehicular travel and parking lanes, but exclusive of the sidewalk, berm, or shoulder even though such sidewalk, berm, or shoulder is used by persons riding bicycles or other human-powered vehicles. In the event a highway includes two or more separate roadways, the term roadway as used in this Manual shall refer to any such roadway separately, but not to all such roadways collectively." This definition results in parking lanes being a portion of the roadway where shoulders are not. It is recommended that the MCUTCD consider revising Layout 3 of the Field Manual to include Note 1 from Layout 2 that,"All signs, barricades and channelizing devices may be omitted when the work occupies

an isolated parking lane location for less than one hour and it has little or no interference with traffic."

- The values used in the Temporary Traffic Control Distance Charts for low speed roadways are far greater than those contained in the federal MN MUTCD. For example, advance sign spacing in the Minnesota charts for a 30 mph speed limit is 250 feet while the federal MUTCD uses 100 feet. The MN MUTCD allows 100 foot spacing but requires the use of engineering judgement to apply this value. The Minnesota chart value is difficult to apply in an urban situation where block lengths are 200-400 feet. Also, there are not many situations included that provide guidance on how to adjust sign spacing and location or taper length or placement based on the vicinity of intersections, entrances or pedestrian or bike facilities often present in urban environments. In addition, Part 5G of the MN MUTCD includes the use of 100 feet minimum spacing for 30 mph roadways, but excludes built up urban areas and residential streets from using this value.

  The following is recommended for inclusion in the Temporary Traffic Control Distance Charts contained in the Field Manual of the MN MUTCD:

<table>
<tr><td colspan="2">Posted Speed Limit Prior to Work Starting<br>(mph)</td><td colspan="2">Advance Warning Sign Spacing<br>(A)<br>feet</td></tr>
<tr><td rowspan="2">0-30</td><td rowspan="3">G = 25 ft</td><td>< 400 ADT</td><td>100</td></tr>
<tr><td>All Other Roads</td><td>250</td></tr>
<tr><td>35-40</td><td colspan="2">325</td></tr>
</table>

- Layout 71 contains the note, "the signs should be no more than 3 miles from the work vehicle." This is essentially a rural, high-speed highway requirement; however, it applies to all roadways. This is based on the signs not being more than 3 minutes away; however, in a residential environment, this time may be inappropriate and too long due to visual clutter and other distractions in the urban environment. It is recommended that the MCUTCD consider revising note 4 to read:

  > 4. When advance warning signs are used, the signs should be no more than 3 miles from the work vehicle on high-speed roadways and no more than 1 mile on low-speed roadways. The location of the signs should be determined by the sources of traffic, such as major cross roads.

- Layout 81 appears to apply to higher volume, higher speed roadways and the number of devices and personnel needed for a short 15 minute closure on a low volume low speed residential street is excessive. Consideration by the MCUTCD of allowing a reduction of devices, personnel and requirements for these residential streets is recommended. It is recommended to include the following note on Layout 81:

  > 5. For streets with speeds 30 mph or less, less than 400 ADT, and few businesses or commercial development, the flagger ahead sign may be omitted and for night closures, the changeable message sign in each direction and law enforcement officers may be omitted.

- The LRRB Task Force recommends that the MCUTCD consider providing reduced spacing requirements for urban environments in the distance charts and to also consider inclusion of more layouts to provide guidance for adjusting temporary traffic controls to meet the needs for local agencies while deploying adequate temporary traffic controls. This guidance should include adjustments for work zones in the vicinity of intersections and entrances, presence of pedestrian and bicycle facilities and traffic, and street classification and use, i.e. collector, residential, etc.

### Low Volume Rural Highways

The applications and layouts for low volume rural highways are scattered throughout the Field Manual. To facilitate use by local authorities, the Task Force recommends including a separate section in the Field Manual for low volume rural highways. This section would contain the existing Layouts 8, 9, 10, 11, 20, 21, 23, and 72. Since most of these rural highways have statutory speed limits of 55 mph and many are not posted, the Task Force also recommends showing distances directly on the layouts rather than referring to the device spacing charts. It is further suggested that all optional devices be removed from the layouts. Figure 1 shows these recommendations applied to the existing layouts 9 and 10.

Questions regarding these requests and recommendations may be directed to Mark Vizecky, MnDOT State Aid Safety Engineer, 651-366-3839, or mark.vizecky@state.mn.us .

Sincerely,

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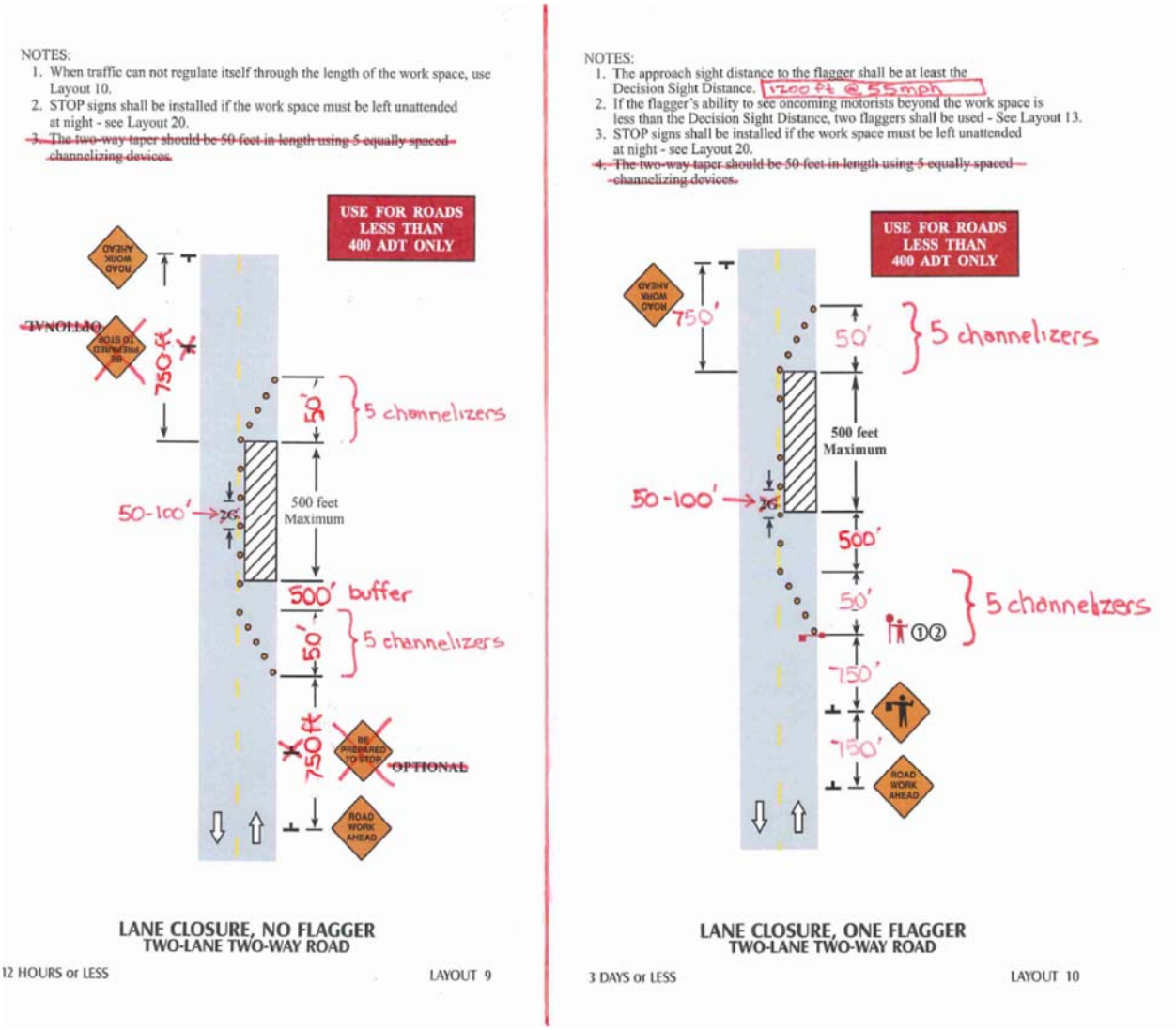


*Figure 1 – Recommendation Examples*