

MINNESOTA COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES
SEPT 20, 2017 MEETING MINUTES
WATERS EDGE ROOM 403

Members				Guests	
Janelle Anderson	X	Mark Sehr		Ken Johnson	
Chris Byrd		Tom Sohrweide	X	Ted Ulven	
Diane Colton	X	Will Stein	X		
Joe Gustafson	X	Josie Tayse	X		
Jon Krieg	X	Scott Thompson	X		
Heather Lott	X				
Tim Plath					
Scott Poska	X				
Howard Preston	X				

Explained Absence:

Chris Byrd
 Mark Sehr
 Tim Plath

Unexplained Absence:

cc: Kristi Sebastian

Introductions

Corrections/Updates to the Minutes

Announcements

Business from the Floor

Old Business

1. FHWA UpdatesWill Stein

- No news on update of the MUTCD
- Overhead Arrow Sign
 - Nice from a driver standpoint
 - Length of the arrows should be considered.
 - Example of sign at 494/94 split in Maple Grove
- St. James Mini Roundabouts
 - Nearly finished. An example with back-in parking. Video timeline can be found here: <https://app.oxblue.com/open/srf/signaltoconversion>
- Anoka has the first 5-legged intersection to have a mini-roundabout installed. The pavement markings are non-compliant.



2. **Requests for Experimentation UpdateJanelle Anderson**

There have been no new requests since February. Reminder that part of the agreement is to provide progress reports to the FHWA every 6 months for the duration of the experiment. There is a possibility that a request could be rescinded if reporting requirements aren't met.

New Business

1. **Ken Johnson**

- **Road Closures for Low Volume Residential Applications** (attachment 1)
New language was presented for 6F.8, 6F.20, and 6F.68.
 - It was agreed that “residential” should be changed to “local”.
 - In 6F.20, “with speed limits of 30 mph or less” was added.

The committee agreed with the changes.

- **Should retroflective pants be required for flaggers during the day?**
After discussion the committee voted to add this as a “shall” requirement.
- **STOP/STOP flagger sign (adult crossing area)**
This item was not discussed – will put on October agenda.
- **6F.50.1 (2C.28) BUMP/DIP language in the MN MUTCD (attachment 2) –Janelle Anderson**
After much discussion it was decided to keep Section 2C.28 language separate from 6F.50.1 language.

Ken provided new language for Section 6F.0.1.

After discussion revisions were made – see attachment for changes. **Ken will rewrite.**

Janelle will rewrite section 2C.28 – some of it was missing/incorrect from the last rewrite of the MN MUTCD.

- **BUMP/DIP Field Manual Layout** (attachment 3)
- **Device installation and removal language in the Field Manual** (attachment 4)
The committee agreed to the new language.

- **One Direction Large Arrow Sign – new language** (attachment 5)

Much discussion on this topic.

Ken moved to go with proposed new language, Joe 2nd. Motion failed.

Discussion:

Why not take the arrow off the 2nd Type 3 at the end of the taper?

Using two Types 3s with arrows gives a conflicting message.

Remove arrow above 2nd barricade unless the 1st barricade can't be used.

Need to do research into this further.

The Large Arrow is being used for 3 different messages:

Merge

Stay over

Lane closed

Joe moved to adopt the new language striking “*and end*” of the merging taper. Scott 2nd. After discussion Joe withdrew motion.

Discussion continued regarding the use of the arrow to delineate a change in horizontal alignment which is allowed (see pg 2C-12 of [MN MUTCD](#)). What is *considered change in horizontal alignment*? Shifting traffic to another lane?

Will will ask what the feds consider a change in horizontal alignment.

It was noted that Section 6F.69 Direction Indicator Barricades uses the arrow:

6F.69 Direction Indicator Barricades

STANDARD

The Direction Indicator Barricade shall consist of a retroreflective One-Direction Large Arrow (W1-6) sign mounted above a diagonal striped, horizontally aligned, retroreflective rail (see Figure 6F-7).

The One-Direction Large Arrow (W1-6) sign shall be black on an orange background. The stripes on the bottom rail shall be alternating orange and white retroreflective stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. The stripes shall be 4 inches wide. The One-Direction Large Arrow (W1-6) sign shall be 24 x 12 inches. The bottom rail shall have a length of 24 inches and a height of 8 inches.

OPTION

The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.

GUIDANCE

If used, Direction Indicator Barricades should be used in series to direct the driver through the transition and into the intended travel lane.

- **Field Manual review dates**

The rewrite of the Field Manual is underway with a goal of publishing by January 2018. Ken will be asking the committee to review sections of the document as

they become available. The Field Manual Committee would like to have the document ready for printing by late November.

2. MN MUTCD Correction

- 7D.5 Operating Procedures for Adult Crossing Guards (attachment 6) – **Janelle Anderson**

The committee agreed with deleting the sentence “*and shall be used as shown in Section 6K (the Field Manual) of this Manual*” from the second paragraph of 7D.5. The statement should have been removed with the 2010 rewrite.

3. AWARE Work Zone Intrusion System (attachments 7,8) - **Scott Poska**

Ran out of time – to be included in October agenda.

4. Recreational or Cultural Interest Guide and Symbol Signs – Heather Lott

TEO Signing Committee - 2005 MN MUTCD Section 2H.9.1 needs to be placed into the current MN MUTCD Chapter 2M. The 2005 Standard on page 2H.13 regarding costs of signs can be removed (MN MUTCD 2007 CH 2H, attachment 9). Ran out of time – to be included in October agenda.

5. Round Robin

Did not get to this.

6. MCUTCD open positions

Voting results:

Consultant Position

Interested:

Michael Martinez (HDR) – 7 votes

Mike McCurdy (Alliant Engineering) – 3 votes

Urban City position

Interested:

Scott Poska (Minneapolis) – 9 votes

HunWen Westman (St. Paul) – 1 vote

**Next Meeting Oct 11, 2017
Water’s Edge Video Conf Rm 403**

Road Closures for Low Volume Residential Applications (Road Work, Block Parties, etc)

The MN MUTCD is pretty definitive on closing roads – see below (from [MN MUTCD 6F.8](#)):
6F.8 ROAD (STREET) CLOSED Sign

GUIDANCE:

The ROAD (STREET) CLOSED (R11-2) sign should be used when the roadway is closed to all road users except contractors' equipment or officially authorized vehicles. The R11-2 sign should be accompanied by appropriate warning and detour signing.

The ROAD (STREET) CLOSED sign should be installed at or near the center of the roadway on or above a Type III barricade that closes the roadway (see [Section 6F.68](#)).

However, some may consider this excessive for work on a low volume residential street or even a block party for which vehicular traffic is prohibited. There may also be a concern for block parties or other situations where the road is only closed to vehicular traffic, for which this language is too prohibitive (**all road users**). A few thoughts:

- Should other channelization options (suggested: Type II barricades) be allowed for low volume residential streets? [Per previous MCUTCD meeting added option for Type I barricades.](#)
- Should an option be added for which the sign is used to close the road to only vehicular traffic?
- Should an option be added to not require the installation of a ROAD CLOSED AHEAD warning sign prior to a road closure on a low volume residential street? Per existing MN MUTCD language, on a low volume residential street, the warning sign with distance is required just prior to the road closure.

Possible language for consideration by the committee:

Add to [6F.8](#)

OPTION:

The ROAD (STREET) CLOSED (R11-2) sign may be used to close a roadway to vehicular traffic except for officially authorized vehicles.

On low volume local streets, the ROAD (STREET) CLOSED (R11-2) sign may be installed on a Type I or Type II barricade.

Deleted: residential

[In 6F.20](#) (on page 6F-13)

After

GUIDANCE:

The ROAD (STREET) CLOSED AHEAD (W20-3) sign should be used in advance of the point where a highway is closed to all road users, or to all but local road users.

Add the following **OPTION:**

OPTION:

The ROAD (STREET) CLOSED AHEAD (W20-3) sign may be omitted on low volume local streets with speed limits of 30 mph or less.

Deleted: residential

Deleted: .

Road Closures for Low Volume Residential Applications (Road Work, Block Parties, etc)

[In 6F.68](#) (on page 6F-38)

After

GUIDANCE:

Type II or Type III Barricades should be used on freeways and expressways or other high-speed roadways. Type III Barricades should be used to close or partially close a road.

Add the highlighted language to the following OPTION:

OPTION:

Type I or Type II Barricades may be used to close or partially close a low volume local street

Deleted: residential

Type I, Type II or Type III Barricades used at a road closure may be placed completely across a roadway or from curb to curb.

Road Closures for Low Volume Residential Applications (Road Work, Block Parties, etc)

Proposed final language for 6F.8 (added language highlighted in blue):

6F.8 ROAD (STREET) CLOSED Sign (11-2)

GUIDANCE:

The ROAD (STREET) CLOSED (R11-2) sign should be used when the roadway is closed to all road users except contractors' equipment or officially authorized vehicles. The R11-2 sign should be accompanied by appropriate warning and detour signing.

OPTION:

The words BRIDGE OUT (or BRIDGE CLOSED) may be substituted for ROAD (STREET) CLOSED where applicable.

GUIDANCE:

The ROAD (STREET) CLOSED sign should be installed at or near the center of the roadway on or above a Type III barricade that closes the roadway (see Section 6F.68).

STANDARD:

The ROAD (STREET) CLOSED sign shall not be used where road user flow is maintained through the TTC zone with a reduced number of lanes on the existing roadway or where the actual closure is some distance beyond the sign.

OPTION:

The ROAD (STREET) CLOSED (R11-2) sign may be used to close a roadway to vehicular traffic except for officially authorized vehicles.

On low volume local streets, the ROAD (STREET) CLOSED (R11-2) sign may be installed on a Type I or Type II barricade (see Section 6F.68).

Deleted: residential

Proposed final language for 6F.20 (added language highlighted in blue):

6F.8 ROAD (STREET) CLOSED Sign (11-2)

GUIDANCE:

The ROAD (STREET) CLOSED AHEAD (W20-3) sign should be used in advance of the point where a highway is closed to all road users, or to all but local road users.

STANDARD:

The ROAD (STREET) CLOSED sign shall have the legend ROAD (STREET) CLOSED, XX FEET, XX MILES, or AHEAD.

OPTION:

The ROAD (STREET) CLOSED AHEAD (W20-3) sign may be omitted on low volume local streets.

Deleted: residential

For MCUTCD consideration. The existing language in the MnMUTCD related to BUMP and DIP signs has some inconsistencies and didn't incorporate much of the 2009 Federal MUTCD language. This section has been rewritten to include the relevant Federal language and to include language that supports the Field Manual layout. See attached proposed TYPICAL BUMP/DIP SIGNING layout that has been put forth by the Field Manual Update Task Force.

This was written to be included in Section 6F.50.1 and to have language to support the TYPICAL BUMP/DIP SIGNING layout (in TTC applications), thus there is inclusion of:

- *advance warning for advisory speeds*
- *down arrow at the location of the rise or depression*
- *suggested applications of ROUGH ROAD and BUMPS signs*

If placed in 2C.28, some elements should likely be omitted.

There is no DIP AHEAD sign, so the BUMP AHEAD sign is proposed to be used as an equivalent. If the Committee prefers, a DIP AHEAD Minnesota only sign could be an option.

6F.50.1 (or 2C.28) BUMP and DIP Signs (W8-1, W8-2)

GUIDANCE

BUMP (W8-1) and DIP (W8-2) signs should be used to give warning of a sharp rise or depression in the profile of the road.

STANDARD:

The DIP sign (W8-2) shall not be used at a short stretch of depressed alignment that may momentarily hide a vehicle. Such a condition shall be treated as a no-passing zone (see Section 3B-2).

Only one supplemental plaque shall be permitted beneath each sign.

GUIDANCE:

A short stretch of depressed alignment that might momentarily hide a vehicle should be treated as a no-passing zone when center line striping is provided on a two-lane or three-lane road.

When the BUMP (W8-1) or DIP (W8-2) sign is used, the BUMP AHEAD (W8-1a) sign with an Advisory Speed (W13-1P) plaque should be placed an adequate distance in advance of the site(s) to ensure that a motorist has sufficient warning before arriving at the location.

At the site of each bump or dip, a 45 Degree Supplemental Arrow (W16-7mP) plaque should be added below the BUMP (W8-1) or DIP (W8-2) sign to identify the exact location of the bump or dip.

When there are multiple bumps of lesser severity or pavement breaks for a distance in excess of one mile, the ROUGH ROAD sign (W8-8) should be used.

OPTION:

The BUMP AHEAD (W8-1a) sign with an Advisory Speed (W13-1P) plaque may be omitted if the determined advisory speed is 10 mph or less than the regulatory speed limit.

A flashing beacon or orange flag may be used on the BUMP or DIP sign assembly depending on the severity of the bump or dip.

At less severe or multiple bumps, a BUMPS (W8-1b) sign may be placed an adequate distance in advance of the site(s) to ensure that a motorist has sufficient warning before arriving at the location. An appropriate distance plaque, XXX FEET (W20-100P) or NEXT XX MILES (W7-3aP) may be placed below the warning sign.

The NEXT XX MILES (W7-3aP) plaque may be used below the ROUGH ROAD sign (W8-8).

DRAFT

At locations where the cross street does not have a name, the W14-1a or W14-2a signs may be used alone in place of a street name sign.

STANDARD:

The DEAD END (W14-1a) and NO OUTLET (W14-2a) signs shall be horizontal rectangles with an arrow pointing to the left or right.

When the W14-1 or W14-2 sign is used, the sign shall be posted as near as practical to the entry point or at a sufficient advance distance to permit the road user to avoid the dead end or no outlet condition by turning at the nearest intersecting street.

The DEAD END (W14-1a) or NO OUTLET (W14-2a) signs shall not be used instead of the W14-1 or W14-2 signs where traffic can proceed straight through the intersection into the dead end street or no outlet area.

2C.27 Low Clearance Signs (W12-2, W12-2a, W12-X2)



W12-2



W12-2a

STANDARD:

The Low Clearance (W12-2) sign shall be used to warn road users of clearances less than 12 inches above the statutory maximum vehicle height.

GUIDANCE:

The actual clearance should be displayed on the Low Clearance sign to the nearest 1 inch not exceeding the actual clearance. However, in areas that experience changes in temperature causing frost action, a reduction, not exceeding 3 inches, should be used for this condition.

Where the clearance is less than the legal maximum vehicle height, the W12-2 sign with a supplemental distance plaque should be placed at the nearest intersecting road or wide point in the road at which a vehicle can detour or turn around.



W12-X2

STANDARD:

In the case of an arch or other structure under which the clearance varies greatly, the W12-X2 Vertical Clearance sign shall be installed on the structure with the appropriate vertical clearance specified. The arrow shall indicate the location of the height specified on the sign.

GUIDANCE:

Two or more signs should be used as necessary on the structure itself to give information as to the clearances over the entire roadway. Clearances should be evaluated periodically, particularly when resurfacing operations have occurred.

OPTION:

The Low Clearance sign should be installed on and in advance of the structure. If a sign is placed on the structure, it should be a rectangular shape (W12-2a) with the appropriate legend.

2C.28 BUMP and DIP Signs (W8-1, W8-1a, W8-1b, W8-2)



W8-1



W8-1a



~~W8-1a w/arrow~~



W8-1b



W8-2

GUIDANCE:

These signs may be supplemented with an Advisory Speed plaque (see Section 2C.8).

At the site of each severe bump or dip, ~~a arrow may be added to the sign face (W8-1a w/arrow)~~ to identify the exact location of the bump or dip.

2C.19
a 45 degree Supplemental Arrow (W16-7mP) plaque should be added below the BUMP (W8-1) sign
 December, 2011

OPTIONS

Guidance

A flashing beacon or orange flag may be installed on the advance sign assembly depending on the severity of the bump or dip.

At less severe or multiple bumps, a BUMP AHEAD (W8-1a) or BUMPS (W8-1b) sign may be placed in advance of the bump location. An appropriate distance plaque (W7-3a, W16-2P or W16-3P) specifying the distance should be placed below the warning sign.

STANDARD:

The DIP sign shall not be used at a short stretch of depressed alignment that may momentarily hide a vehicle.

GUIDANCE:

A short stretch of depressed alignment that might momentarily hide a vehicle should be treated as a no-passing zone when centerline striping is provided on a two-lane or three-lane road (see Section 3B.2).

2C.29 SPEED HUMP Sign (W17-1)



W17-1

GUIDANCE:

The SPEED HUMP (W17-1) sign should be used to give warning of a vertical deflection in the roadway that is designed to limit the speed of traffic.

If used, the SPEED HUMP sign should be supplemented by an Advisory Speed plaque (see Section 2C.8).

OPTION:

If a series of speed humps exists in close proximity, an Advisory Speed plaque may be eliminated on all but the first SPEED HUMP sign in the series.

The legend SPEED BUMP may be used instead of the legend SPEED HUMP on the W17-1 sign.

SUPPORT:

Speed humps generally provide more gradual vertical deflection than speed bumps. Speed bumps limit the speed of traffic more severely than speed humps. Other forms of speed humps include speed tables and raised intersections. However, these differences in engineering terminology are not well known by the public, so for signing purposes these terms are interchangeable.

2C.30 PAVEMENT ENDS Sign (W8-3)



W8-3

GUIDANCE:

A PAVEMENT ENDS (W8-3) word message sign should be used where a paved surface changes to either a gravel treated surface or an earth road surface.

OPTION:

An Advisory Speed plaque (see Section 2C.8) may be used when the change in roadway condition requires a reduced speed.

2C.31 Shoulder Signs (W8-4, W8-9, W8-17, W8-23, W8-25, W5-X1)



W8-4



W8-9



W8-25



W5-X1



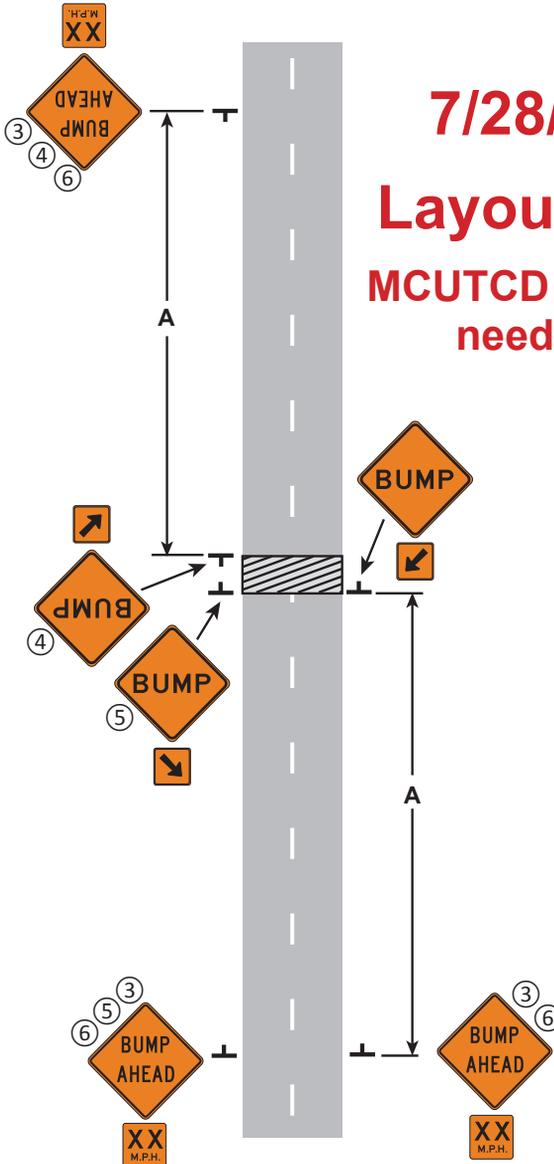
W8-17

MN Rev. 1

MN Rev. 1

NOTES:

1. Multiple bumps should use ROUGH ROAD sign.
2. When a dip, use DIP signs.
- ③ May use STEEL PLATE AHEAD sign (W8-24) when bump is caused by steel plate.
- ④ Use on two-lane, two-way roadways.
- ⑤ For multi-lane divided or one-way road only.
- ⑥ May be omitted if the posted advisory speed is 10 mph or less than the posted regulatory speed.



7/28/16
Layout OK
MCUTCD review
needed

TYPICAL BUMP/DIP SIGNING

Installing the Temporary Traffic Control Zone

Traffic control devices shall be installed in the order that drivers will see them, starting with the sign or device that is furthest from the work space. If traffic in both directions will be affected, such as work in the center lanes, the devices may be placed in both directions at the same time. When one direction of traffic will be directed into the opposing lanes of traffic, all traffic controls for the opposing traffic should be installed first.

A clear lane at least 10 feet wide shall be maintained at all times. After the temporary traffic control zone is in place, it should be inspected by driving through the zone. Motorists' actions and reactions should be noted and any problems encountered should be quickly corrected. Any modifications to the Temporary Traffic Control Plan or standard layouts and the reasons for the modifications should be documented.

During the life of a Temporary Traffic Control zone, maintenance of devices is frequently needed. On short term operations, vehicles may knock over cones which then need to be placed upright. Problems encountered should be corrected immediately and documented.

Removing the Temporary Traffic Control Zone

Traffic control devices should be removed as soon as the work is completed and they are no longer needed. Devices should be removed in the opposite order from which they were installed, especially devices in the Termination, Activity, and Transition Areas. Devices which the driver sees last should be removed first. Devices in the Advance Warning Area may be removed in the order that they were installed. Alternatively, devices may be removed in the order that they were installed if removed utilizing a Mobile Lane Closure.

Crossing Live Lanes of Traffic

Personnel may cross live traffic lanes only if it is safe to do so utilizing a walking pace taking into consideration roadway geometry, traffic volume, and other appropriate factors.

6F.50.3 One-Direction Large Arrow Sign (W1-6)

SUPPORT:

For temporary traffic control applications, the One-Direction Large Arrow sign (W1-6) is intended to indicate horizontal alignment changes and to identify tapers.

OPTION:

A One-Direction Large Arrow (W1-6) sign may be used either as a supplement or alternative to Chevron Alignment signs in order to delineate a change in horizontal alignment.

A One-Direction Large Arrow (W1-6) sign may be used to supplement a Turn or Reverse Turn sign to emphasize the abrupt curvature. An arrow board may be used in lieu of a one direction large arrow for a Temporary Traffic Control Zone.

STANDARD:

For temporary traffic control applications, the One-Direction Large Arrow sign (W1-6) shall be black on orange background.

If used to indicate a horizontal alignment change in temporary traffic control applications, the One-Direction Large Arrow sign shall be installed on the outside of a turn or curve in line with and at approximately a right angle to approaching traffic.

GUIDANCE:

One-Direction Large Arrow signs (W1-6) should be used to identify shifting and merging tapers in temporary traffic control applications.

To identify shifting tapers, a One-Direction Large Arrow sign (W1-6) should be placed on or above a Type III barricade at the end of the shifting taper.

To identify merging tapers, a One-Direction Large Arrow sign (W1-6) should be placed on or above a Type III barricade at the beginning of the merging taper.

Deleted: and end

OPTION:

For low speed temporary traffic control applications, the One-Direction Large Arrow sign (W1-6) and Type III barricade may be omitted at the beginning of a merging taper. Add language something like – if barricade can't fit on the shoulder you can place it at the end of the taper?

Add if 45 mph or greater use flashing arrowboard in lieu of one-direction large arrow.....?

9-11-17
for MCUTCAD mtg

Part 7. TRAFFIC CONTROLS FOR SCHOOL AREAS

7D. Crossing Supervision

7D.1 Types of Crossing Supervision

SUPPORT:

There are three types of school crossing supervision:

- A. Adult control of pedestrians and vehicles by adult crossing guards
- B. Adult control of pedestrians and vehicles by uniformed law enforcement officers, and
- C. Student and/or parent control of only pedestrians with student and/or parent patrols.

Information regarding the organization, administration and operation of a school safety patrol program is contained in "AAA School Safety Patrol Operations Manual" (see Section 1A.11).

7D.2 Adult Crossing Guards

OPTION:

Adult crossing guards may be used to provide gaps in traffic at school crossings where an engineering study has shown that adequate gaps must be created (See Section 7A-3) and where authorized by law.

7D.3 Choice of Adult Guards

SUPPORT:

High standards for selection of adult crossing guards are essential because they are responsible for the safety of and the efficient crossing of the street by schoolchildren within and in the immediate vicinity of school crosswalks.

GUIDANCE:

Adult crossing guards should possess the following minimum qualifications:

- A. Average intelligence;
- B. Good physical condition, including sight, and hearing;
- C. Ability to control a STOP paddle effectively to provide approaching road users with a clear, fully direct view of the paddle's STOP message during the entire crossing movement;
- D. Ability to communicate specific instructions clearly, firmly, and courteously;
- E. Ability to recognize potentially dangerous traffic situations and warn and manage students in sufficient time to avoid injury.
- F. Mental alertness;
- G. Neat appearance;
- H. Good character;

I. Dependability; and

J. An overall sense of responsibility for the safety of students.

K. Completion of an official training program.

7D.4 Uniform of Adult Crossing Guards

STANDARD:

Law enforcement officers performing school crossing supervision and adult crossing guards shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-2004 standard performance for Class 2 as described in Section 6E.2.

Compliance Date: December 31, 2011

7D.5 Operating Procedures for Adult Crossing Guards

STANDARD:

Adult crossing guards shall not direct traffic in the usual law enforcement regulatory sense. In the control of traffic, they shall pick opportune times to create a sufficient gap in the traffic flow. At these times, they shall stand in the roadway to indicate that pedestrians are about to use or are using the crosswalk, and that all vehicular traffic must stop.

Adult crossing guards shall use a STOP paddle. The STOP paddle shall be the primary hand-signaling device and shall be used as shown in Section 6K (the Field Manual) of this Manual.

The STOP (R1-1) paddle shall be an octagonal shape. The background of the STOP face shall be red with at least 6-inch series upper-case white letters and border. The paddle shall be at least 18 inches in size and have the word message STOP on both sides. The paddle shall be retroreflectORIZED or illuminated when used during hours of darkness.

OPTION:

The STOP paddle may be modified to improve conspicuity by incorporating white or red flashing lights on both sides of the paddle. Among the types of flashing lights that may be used are individual LEDs or groups of LEDs.

This statement was supposed to be removed as per 2010 re-write