

MINNESOTA COMMITTEE ON UNIFORM TRAFFIC CONTROL DEVICES
APRIL 11, 2018 MEETING MINUTES
WATERS EDGE ROOM 403

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

Explained Absence:

Mike Martinez
 Tim Plath

Unexplained Absence:

cc: Kristi Sebastian

Introductions

Corrections/Updates to the Minutes

Old Business

1. FHWA UpdatesWill Stein

Pedestrian-Actuated Rectangular Rapid-Flashing Beacons (RRFBs) are allowed again.

Minnesota has been granted blanket interim approval. Note that there are some specs that are different – make sure you’re up-to-date on that latest version.

Chevrons around exit loops (e.g. 694/494/94 truck rollover loop)

Regarding [Table 2C.5 Horizontal Alignment Sign Selection](#) which says you can use chevrons and/or one direction large arrow (you are not required to use the arrow).

Discussion:

- Why not just use delineators – cheaper.
- Use larger arrow and delineators.
- Chevrons are only effective on rural curves – there is no evidence that they are effective on urban curves.
- Is there a documented problem of people running off loops?

Will – does the TEO Signing Committee want to discuss this?

Janelle – There is an AASHTO Ballot that proposed to replace Table 2C.5 with a different table. You are still able to use just the one direction large arrow in the new table.

2. Requests for Experimentation UpdateJanelle Anderson

- New request from Scott Poska, City of Minneapolis, regarding advisory bike lanes.
- There may be one coming from a MnDOT office having to do with zig zag pavement markings prior to a crosswalk.
- There is a searchable website that provides information on requests to experiment, requests for changes, etc. located at: <https://mutcd.fhwa.dot.gov/orsearch.asp>.

New Business

MN MUTCD Proposed Language Modifications – Ken Johnson

1. [Section 3B.16 Stop and Yield Lines](#) (see attached)

The original guidance statement did not include ramp meter locations.

*Committee agreed to adopt the new language pending approval from the FHWA.

Proposed content in Minnesota MUTCD (**proposed additional language in red bold font**):

Guidance:

Stop lines should be used to indicate the point behind which vehicles are required to stop in compliance with a traffic control signal.

Option:

A stop line may be omitted on an approach to a traffic control signal if a crosswalk line of at least 24 inches in width is in place for that approach.

Stop lines may be omitted prior to Freeway Entrance Ramp Control Signals.

Stop lines may be used to indicate the point behind which vehicles are required to stop in compliance with a STOP (R1-1) sign, a Stop Here For Pedestrians (R1-5b or R1-5c) sign, or some other traffic control device that requires vehicles to stop, except YIELD signs that are not associated with passive grade crossings.

Discussion:

- Is a stop bar effective? Is there evidence of this?
- A majority of cities prefer not to have to put stop bars in.
- Will – since it's a "should" statement it's ok to let it be an option. Can't have a blanket policy to go against a "should" statement.
- If it's a "should" statement you do it unless you have engineering judgement against not doing it.
- It's a pedestrian safety issue.

2. [Section 6G.20](#) Installation, Maintenance and Inspection of TTC (see attached)

This modification was made based on changes/updates to the Field Manual.

*Committee agreed to adopt the new language.

GUIDANCE

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.

~~The 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. Devices closest to the work space should be removed first.~~ 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.

OPTION

Devices in the advance warning area may be removed in the order they were installed.

The TTC Devices may be removed in the order that they were installed if removed using a Mobile Lane Closure.

3. Sections [6F.8](#), [6F.20](#), [6F.68](#) – Road Closures for Low Vol Residential Applications (see attached)

This modification added the option for Type I barricades on low volume residential streets.

***Committee agreed to adopt the new language.**

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 residential streets, the ROAD (STREET) CLOSED (R11-2) sign may be installed on a **Type I or** Type II barricade.

[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 residential streets.

[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 residential street.

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.

4. Section [6F.59](#) Detour Signs and Markers (see attached)

Issue is that sometimes Type III barricade rails are covered too much when both the Detour Arrow and the Road Closed signs are placed on the same barricade. The modified language allows for sign placement on an adjacent Type III barricade.

***Committee agreed to adopt the new language.**

Proposed content in Minnesota MUTCD (added Option prior to paragraph 08 proposed additional language in red bold font):

Guidance:

The Detour Arrow (M4-10) sign should normally be mounted just below the ROAD CLOSED (R11-2, R11-3a, or R11-4) sign. The Detour Arrow sign should include a horizontal arrow pointed to the right or left as required.

Option:

If the ROAD CLOSED (R11-2, R11-3a, or R11-4) sign is mounted on a Type III barricade, the Detour Arrow (M4-10) sign may be placed on an adjacent Type III barricade.

The END DETOUR (M4-8a or M4-8b) sign may be used to indicate that the detour has ended.

5. Section [6G.16](#) Crossovers (see attached)

Request is to revert to the language found in the MUTCD.

***Committee agreed to adopt the new language.**

Discussion:

- Is there a requirement that crossovers be designed rather than just constructed? MnDOT designs their crossovers.
- Should there be language that crossovers should be designed – especially on high speed roadways? Maybe in the TEM?

Section 6G.16 Crossovers: Would like to change 6G.16 B to match federal language.

6G.16 Crossovers

GUIDANCE:

The following are good guiding principles for the design of crossovers:

- A. Tapers for lane drops should be separated from the crossovers.
- B. Crossovers should be designed for speeds not less than 10 miles per hour below the posted speed prior to work starting. If unusual site conditions require that a lower design speed be used, the signing should reflect an advisory speed determined by engineering judgment or study.
- C. A good array of channelizing devices, delineators, and full-length, properly placed pavement markings should be provide drivers with a clearly defined travel path.
- D. The design of the crossover should accommodate all roadway traffic including trucks and buses.
- E. A clear area should be provided adjacent to the crossover.

SUPPORT:

Temporary traffic barriers and the excessive use of TTC devices cannot compensate for poor geometric and roadway cross-section design of crossovers.

Section 6G.16 Crossovers

Guidance:

- 01 *The following are considered good guiding principles for the design of crossovers:*
- A. *Tapers for lane drops should be separated from the crossovers, as shown in Figure 6H-39.*
 - B. *Crossovers should be designed for speeds no lower than 10 mph below the posted speed, the off-peak 85th-percentile speed prior to the work starting, or the anticipated operating speed of the roadway, unless unusual site conditions require that a lower design speed be used.*
 - C. *A good array of channelizing devices, delineators, and full-length, properly placed pavement markings should be used to provide drivers with a clearly defined travel path.*
 - D. *The design of the crossover should accommodate all vehicular traffic, including trucks and buses.*

Support:

- 02 Temporary traffic barriers and the excessive use of TTC devices cannot compensate for poor geometric and roadway cross-section design of crossovers.

Signing – Josie Tayse

*Committee agreed with changes.

6. Sign code changes (See attached)

The OTST Signing unit is going through all the standard sign designs and are trying to minimize the differences between the FWHA and MnDOT signing codes and designs. If there has to be a difference in codes and designs we want to ensure it is easily identified by the sign code. Below is the proposed guidance on how to assign unique MnDOT sign codes. This guidance will be included in the Standard Signs and Markings Manual as part of the introduction.

Minnesota Only Sign Codes

All Minnesota designs that are a modification of a federal design will be designed with an “M” after the dash. The rest of the code will mirror the federal code.

S3-M2

All Minnesota special designs start with the numbers associated with the sign design and then after the dash place an “X” and start numbering numerically.

R5-X1

If there is another similar sign with a minor word change and it maintains the same basic meaning, add an “a” after the code. If there are multiple codes, change the letter alphabetically.

R12-X2a

If a plaque is associated with that sign code then add a “P” at the end.

R12-X1P

Discussion

- Maybe switch the M for the Minnesota code to the end – easier to understate (this will be done).
- How do other states number their signs?

7. Sign Series X, S and R proposed changes (see attached)

Josie presented a spreadsheet comparing Minnesota and Federal sign codes for X, S, and R series with comments.

8. MN MUTCD [Appendix C](#), Sign Listing

This will need to be updated with the new sign codes.

Round Robin

From: [Johnson, Kenneth \(DOT\)](#)
To: [Anderson, Janelle \(DOT\)](#); william.stein@dot.gov; [Colton, Diane \(DOT\)](#)
Cc: [Buchen, Peter \(DOT\)](#); [Peterson, Ethan \(DOT\)](#); [Johnson, Kenneth \(DOT\)](#)
Subject: Proposed modification to guidance statement for stop lines prior to signals with crosswalks and at ramp meters
Date: Tuesday, February 06, 2018 7:42:09 PM
Attachments: [Guidance statements one pager 3B.16 stop and yield lines.docx](#)
[Minutes July 9 2014.pdf](#)
[Minutes August 13, 2014.pdf](#)
[image001.png](#)
[image002.png](#)
[image003.png](#)

All,

Attached is a proposed language modification to [Section 3B.16 Stop and Yield Lines in the MN MUTCD](#) based on concerns of and suggestions from the Minnesota Committee on Uniform Traffic Control Devices. I've also attached the minutes of those meetings that discussed this issue (thanks, Diane!). Please let me know if you have any questions, comments or concerns.

Take care,
Ken

Ken E. Johnson, PE | State Work Zone, Pavement Marking & Traffic Devices Engineer
Office of Traffic, Safety & Technology | 651-234-7386 | ken.johnson@state.mn.us



Proposed MN MUTCD Modifications for 6G.20 Installation, Maintenance and Inspection of TTC

For MCUTCD consideration. Proposed modifications to 6G.20 to match proposed new language in 2018 Field Manual

6G.20 Installation, Maintenance and Inspection of Temporary Traffic Control

GUIDANCE:

Prior to installing any traffic control device, it should be inspected for condition, reflectorization and standard shape, size, color and message. If the device is not standard or in good condition, it should be replaced immediately. See Section 6K (the Field Manual) for Quality Standards.

Existing signs that do not apply or conflict with temporary traffic control should be removed or covered. If the sign is removed it should be carefully stored for re-installation when the temporary traffic control zone is removed. In addition to the Class 3 requirements listed in the above STANDARD, a high visibility hat in the above colors should be worn.

SUPPORT

When covering a sign, care should be taken not to damage the sign face. When placing another hard material over the sign face, plastic spacers need to be inserted to avoid scratching the sign face. Translucent materials and materials that may become damaged by the weather are not acceptable coverings.

Temporary traffic control zone signs that are installed prior to the start of work also need to be covered, rotated or folded to avoid giving the driver an erroneous message.

STANDARD

When work is not in progress and the hazard no longer exists, devices shall be covered or removed.

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.

OPTION

If traffic in both directions will be affected, such as work in the center lanes, the devices can be placed in both directions at the same time.

GUIDANCE

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.

~~The 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. Devices closest to the work space should be removed first.~~ 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.

OPTION

Devices in the advance warning area may be removed in the order they were installed.

Proposed MN MUTCD Modifications for 6G.20 Installation, Maintenance and Inspection of TTC

The TTC Devices may be removed in the order that they were installed if removed using a Mobile Lane Closure.

SUPPORT

After the temporary traffic control zone is in place, it is helpful to inspect the zone by driving through the zone. Driver's actions and reactions should be noted and if any problems are encountered, they should be quickly corrected.

No changes after this point in Section 6G.20

DRAFT

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 residential streets, the ROAD (STREET) CLOSED (R11-2) sign may be installed on a [Type I or](#) Type II barricade.

[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 residential streets.

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 residential street.

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

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 residential streets.

From: [Johnson, Kenneth \(DOT\)](#)
To: william.stein@dot.gov
Cc: [Anderson, Janelle \(DOT\)](#); [Colton, Diane \(DOT\)](#); [Morey, Jeffrey \(DOT\)](#); [Buchen, Peter \(DOT\)](#)
Subject: Proposed Option statement to modify a Guidance statement - 6F.59 detour signs and markers
Date: Monday, February 12, 2018 11:50:42 AM
Attachments: [Guidance statements one pager 6F.59 detour signs and markers.docx](#)
[image001.png](#)
[image002.png](#)
[image003.png](#)

Will,

Adam Wellner pointed out that sometimes the Type III barricade rails are covered too much with both the DETOUR Arrow and the ROAD CLOSED signs if they are placed on the same Type III barricade. They can be mounted appropriately, but crashworthiness may be brought into question with that many signs placed on a Type III barricade – with the extra height needed. MN MUTCD layouts in Part 6J have shown that the DETOUR Arrow and the ROAD CLOSED signs are placed on adjacent Type III barricades. Part 6F language does not seem to allow it. We'd like to modify Part 6F language to allow this practice.

Attached is a Guidance statement modification request for this situation. Please let me know if you have any questions or need more information.

Take care,

Ken

Ken E. Johnson, PE | State Work Zone, Pavement Marking & Traffic Devices Engineer
Office of Traffic, Safety & Technology | 651-234-7386 | ken.johnson@state.mn.us



Section 6G.16 Crossovers

Would like to change 6G.16 B to match federal language.

6G.16 Crossovers

GUIDANCE:

The following are good guiding principles for the design of crossovers:

- A. Tapers for lane drops should be separated from the crossovers.
- B. Crossovers should be designed for speeds not less than 10 miles per hour below the posted speed prior to work starting. If unusual site conditions require that a lower design speed be used, the signing should reflect an advisory speed determined by engineering judgment or study.
- C. A good array of channelizing devices, delineators, and full-length, properly placed pavement markings should be provide drivers with a clearly defined travel path.
- D. The design of the crossover should accommodate all roadway traffic including trucks and buses.
- E. A clear area should be provided adjacent to the crossover.

SUPPORT:

Temporary traffic barriers and the excessive use of TTC devices cannot compensate for poor geometric and roadway cross-section design of crossovers.

Section 6G.16 Crossovers

Guidance:

- 01 *The following are considered good guiding principles for the design of crossovers:*
- A. *Tapers for lane drops should be separated from the crossovers, as shown in Figure 6H-39.*
 - B. *Crossovers should be designed for speeds no lower than 10 mph below the posted speed, the off-peak 85th-percentile speed prior to the work starting, or the anticipated operating speed of the roadway, unless unusual site conditions require that a lower design speed be used.*
 - C. *A good array of channelizing devices, delineators, and full-length, properly placed pavement markings should be used to provide drivers with a clearly defined travel path.*
 - D. *The design of the crossover should accommodate all vehicular traffic, including trucks and buses.*

Support:

- 02 Temporary traffic barriers and the excessive use of TTC devices cannot compensate for poor geometric and roadway cross-section design of crossovers.

Minnesota Only Sign Codes

All Minnesota designs that are a modification of a federal design will be designed with an "M" after the dash. The rest of the code will mirror the federal code.

S3-M2

All Minnesota special designs start with the numbers associated with the sign design and then after the dash place an "X" and start numbering numerically.

R5-X1

If there is another similar sign with a minor word change and it maintains the same basic meaning, add an "a" after the code. If there are multiple codes, change the letter alphabetically.

R12-X2a

If a plaque is associated with that sign code then add a "P" at the end.

R12-X1P

Minnesota Code	Federal Code	Code Different?	New Code	Design Different?
R1-1	R1-1	No		Yes
R1-2	R1-2	No		Yes
R1-2aP	R1-2aP	No		No
R1-3P	R1-3P	No		No
R1-5b	R1-5b	No		No
R1-5c	R1-5c	No		No
R1-6a	R1-6a	No		No
R1-6c	R1-6c	No		No
R1-9b		NA	R1-M9b	NA
R1-X1	MN SPECIAL	NA		NA
R1-X3	MN SPECIAL	NA	R1-X3P	NA
R2-1	R2-1	No		No
R2-3P	R2-3P	No	Delete	Yes
R2-4b	R2-4a	Yes		Yes
R2-4P	R2-4P	No	Delete	Yes
R2-6bP	R2-6bP	No		No
R2-12	R2-12	No		Yes
R2-X5	MN SPECIAL	NA	Delete	NA
R3-1	R3-1	No		No

R3-2	R3-2	No		No
R3-3	R3-3	No		Yes
R3-4	R3-4	No		No
R3-4a		NA	R3-M4	NA
R3-5 (R or L)	R3-5L, R3-5R	No		Yes
R3-5a	R3-5a	No		Yes
NA	MN SPECIAL		R3-X5	
NA	MN SPECIAL		R3-X5	
R3-6 (R or L)	R3-6L, R3-6R	No		Yes
R3-7	R3-7L, R3-7R	No	R3-7	Yes
NA			R3-M7	
R3-8	R3-8, R3-8a, R3-8b	Yes		Yes
			R3-8KD	
			R3-8KG	
			R3-8LA	
			R3-8LE	
			R3-8MA	
R3-9a	R3-9a	No		No

R3-9b	R3-9b	No		No
R3-9cP and R3-9dP	R3-9cP and R3-9dP	No		No
R3-17	R3-17	No		Yes
R3-17aP and R3-17bP	R3-17a and R3-17b	No		No
R3-18	R3-18	No		Yes
R3-27	R3-27	No		No
R3-33	R3-33	No		No
R3-X3	MN SPECIAL	NA		NA
U Turn arrow ONLY	MN SPECIAL		R3-X5	
U Turn/Thru arrow	MN SPECIAL		R3-X5a	
R4-1	R4-1	No		Yes
R4-2	R4-2	No		Yes
R4-3	R4-3	No		Yes
R4-3a		NA	R4-M3	NA
R4-4	R4-4	No		Yes
R4-5	R4-5	No		No
R4-6	R4-6	No		No
R4-7	R4-7	No		Yes
R4-7c	R4-7c	No		No
R4-8	R4-8	No		Yes

R4-8c	R4-8c	No		No
R4-17a	R4-17	NA	R4-M17	NA
R4-18a	R4-18	NA	R4-M18	NA
R4-X1	MN SPECIAL	NA		NA
R4-X4	MN SPECIAL	NA		NA
R4-X5	MN SPECIAL	NA		NA
R4-X6	MN SPECIAL	NA		NA
R4-X7	MN SPECIAL	NA		NA
R4-X7P	MN SPECIAL	NA		NA
R4-X8	MN SPECIAL	NA		NA
R4-X8a	MN SPECIAL	NA		NA
R5-1	R5-1	No		No
R5-1a	R5-1a	No		No
R5-2	R5-2	No		Yes
R5-3	R5-3	No		Yes
R5-6	R5-6	No		Yes
R5-10d	R5-10a,b,c	NA	R5-M10a	NA
R5-X1	MN SPECIAL	NA		NA
R5-X2	MN SPECIAL	NA		NA
R5-X3	MN SPECIAL	NA		NA

R5-X4	MN SPECIAL	NA		NA
R6-1	R6-1R and R6-1L	No		Yes
R6-2 (R or L)	R6-2R and R6-2L	No		Yes
R6-3 and R6-3a	R6-3 and R6-3a	No		Yes
R6-4	R6-4	No		No
R6-4a	R6-4a	No		No
R6-4b	R6-4b	No		No
R6-6	R6-6	No		No
R6-7	R6-7	No		No
R7-8bP	R7-8a & R7-8b	Yes		Yes
R7-8m		NA	R7-M8	NA
R7-108	R7-108	NA		Yes
R7-X2	MN SPECIAL	NA		NA
R8-3	R8-3	No		No
R8-3mP and R8-3AP		Yes	R8-M3P	Yes
R8-4	R8-4	No		Yes
R8-7	R8-7	No		Yes
R8-8	R8-8	No		No

R8-41	Delete	NA	Delete	NA
R9-3	R9-3	No		Yes
R9-5	R9-5	No		Yes
R9-6	R9-6	No		Yes
R9-7 (R or L)	R9-7	No		Yes
R9-9	R9-9	No		Yes
R9-9a		NA	R9-M9	NA
R9-10	R9-10	No		Yes
R9-11 (R or L)	R9-11	No		Yes
R9-11a	R9-11a	NA		NA
R9-11b		NA	R9-M10	NA
R9-X1	MN SPECIAL	NA		NA
R9-X2	MN SPECIAL	NA		NA
R10-3	R10-3	No		Yes
R10-3b	R10-3b	No		Yes
R10-3d	R10-3d	No		Yes
R10-3e	R10-3e	No		Yes
R10-6 (R or L)	R10-6	No	Remove WAIT	Yes
R10-7	R10-7	No		Yes
R10-7a		NA		NA
R10-10 (R or L)	R10-10R & R10-10L	No		Yes

R10-11b	R10-11b	No		Yes
R10-11c	R10-11c			
R10-12	R10-12	No		Yes
R10-15a (R or L)	R10-15R & R10-15L	Yes	R10-M15	Yes
R10-16	R10-16	No		Yes
R10-X4	Delete	NA	Delete	NA
R10-X6	MN SPECIAL	NA		NA
R10-X7	MN SPECIAL	NA		NA
R10-X12	MN SPECIAL	NA		NA
R10-X13	MN SPECIAL	NA		NA
R11-1	R11-1	No		Yes
R11-2	R11-2	No		Yes
R11-2a	Delete	NA	Delete	NA
R11-3a	R11-3a	No		No
R11-3b	R11-3b	No		Yes
R11-3c	Delete	NA	Delete	NA
R11-4	R11-4	No		No

R11-X1	MN SPECIAL	NA		NA
R12-1a	R12-1	Yes	Delete	Yes
R12-2	R12-2	No		Yes
R12-5	R12-5	No		Yes
R12-5a	Delete	NA	Delete	NA
R12-5 Supplement	MN SPECIAL	NA	R12-X1P	NA
R12-X2	MN SPECIAL	NA		NA
R12-X2a	MN SPECIAL	NA		NA
R12-X3	MN SPECIAL	NA		NA
R12-X3a	MN SPECIAL	NA		NA
R12-X4	MN SPECIAL	NA		NA
R12-X4a	MN SPECIAL	NA		NA
R12-X5	MN SPECIAL	NA		NA
R12-X11	MN SPECIAL	NA		NA
R13-X1	MN SPECIAL	NA		NA
R14-1	R14-1	No		Yes
R15-3P	R15-3P	No		No
R15-7	R15-7	No		No
R15-7a	R15-7a	No		No
R16-4	R16-4	No		Yes

R16-X1	MN SPECIAL	NA		NA
R16-X2	MN SPECIAL	NA		NA
R16-X3	MN SPECIAL	NA		NA
R16-X4		NA	R8-M7	NA
R16-X6	MN SPECIAL	NA		NA
R16-X7		NA	R3-M33?	NA
R16-X9	MN SPECIAL	NA		NA
R16-10	MN SPECIAL	NA		NA
R16-X11	MN SPECIAL	NA		NA
R16-X12		NA	R16-M1?	NA
R16-X13	MN SPECIAL	NA		NA
R16-X15	MN SPECIAL	NA		NA
R16-X16	MN SPECIAL	NA		NA
R16-X33	MN SPECIAL	NA		NA

Details?	MNMUTCD - Comments
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code but delete 24x24 option - Not used in MN. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	There are 2 sizes but no application designated.
Use Federal design and code. Remove from SignCAD MN Standards folder.	
This is not being used. Remove from SSS, SSM, TEM, MUTCD and SignCAD MN Standards folder.	Before deleting bring to MUTCD committee to see if it is ever used.
Use Federal design and code. Remove from SignCAD MN Standards folder.	
This is not being used. Remove from SSS, SSM, TEM, MUTCD and SignCAD MN Standards folder.	Before deleting bring to MUTCD committee to see if it is ever used.
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
This is not being used. Remove from SSS, SSM, TEM, MUTCD and SignCAD MN Standards folder.	Before deleting bring to MUTCD committee to see if it is ever used.
Use Federal design and code. Remove from SignCAD MN Standards folder.	

Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Use federal design and code. Remove from SignCAD MN Standards folder except for the Oversized option. Use MN design for 48x60 and keep in MN Standard folder in SignCAD.	
Use federal design and code. Remove from SignCAD MN Standards folder except for the Oversized option. Use MN design for 48x60 and keep in MN Standard folder in SignCAD.	
This is a new sign to be added for U-Turn ONLY at RCI'S.	
This is a new sign to be added for U-Turn/Left Turn at RCI'S.	
Use federal design and code. Remove from SignCAD MN Standards folder except for the Oversized option. Use MN design for 48x60, update to 2K font and keep in MN Standards folder in SignCAD.	
Use federal design and code for 30x30 option and remove from SignCAD MN Standards. Use MN design for 36x36 and keep in MN Standard folder in SignCAD.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	ALL TRAFFIC MUST TURN
Use R3-8 Lan-Use Control Signs in the SignCAD MN Standard folder and update to 2K font.	
This is a new sign to be added for Roundabout - lt/dot ONLY, thru rt	
This is a new sign to be added for Roundabout - lt/dot ONLY, left thru rt	
This is a new sign to be added for Roundabout - lt/dot thru, rt ONLY	
This is a new sign to be added for Roundabout - lt/dot thru, thru rt arrow	
This is a new sign to be added for Roundabout - lt/dot thru rt, rt ONLY	
Use Federal design and code. Remove from SignCAD MN Standards folder.	

Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code for 24x18 only. MN does not use the other sizes. Remove from SignCAD MN Standards folder	
Use Federal design and code for 24x8 only. MN does not use the other sizes. Remove from SignCAD MN Standards folder	
Use Federal design and code. Remove from SignCAD MN Standards folder. In SSM delete 30x30 option - not used in MN.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Unique to Minnesota. Keep as is and update to 2K font.	
Add to SSS, SSM, TEM, MUTCD and add to SignCAD MN Standards folder. Unique to MN	
Add to SSS, SSM, TEM, MUTCD and add to SignCAD MN Standards folder. Unique to MN	
Use federal design and code. Remove from SignCAD MN Standards folder.	
Use federal design and code. Remove from SignCAD MN Standards folder.	
Use federal design and code. Remove from SignCAD MN Standards folder.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Use federal design and code. Remove from SignCAD MN Standards folder.	
Use federal design and code. Remove from SignCAD MN Standards folder.	
Use federal design and code. Remove from SignCAD MN Standards folder. In SSM delete 36x48 option - not used in MN.	
Use federal design and code. Remove from SignCAD MN Standards folder.	
Use federal design and code. Remove from SignCAD MN Standards folder.	•
Use Federal design and code. Remove from SignCAD MN Standards folder. Use MN design for 12x18, update to 2K font and keep in MN Standard folder in SignCAD.	•

FHWA does not have a design. Keep MN design and update to 2K font. Keep in SignCAD MN Standard folder.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder. Use MN design for 18x18 and keep in MN Standard folder in SignCAD.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	

Unique to Minnesota. Keep as is and update to 2K font.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder. Use MN design for 30x36 and keep in MN Standard folder in SignCAD.	
Use Federal design and code except for 36x30 (delete) which is not used in MN and 24x18 (delete) which is no longer standard and should be upgraded to 30x24. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code. Remove from SignCAD MN Standards folder.	
Use Federal design and code but use blue only. Delete the 18x9 size - Not used in MN	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Unique to Minnesota. Keep as is and update to 2K font.	
Use Federal design and code. Remove from SignCAD MN Standards folder. Use MN design for 30x30, update to 2K font and keep in MN Standard folder in SignCAD.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	

This is not being used. Remove from SSS, SSM, TEM, MUTCD and SignCAD MN Standards folder.	Before deleting bring to MUTCD committee to see if it is ever used.
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	Check w/sign shop if they actually do an R and an L
Use Federal design and code. Remove from SignCAD MN standards folder.	Add 24x12 to sss as minimum and 30x18 CR-SL-ML
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Federal missing "wait" text. Federal missing 36x48. Different arrow dimensions. Wait is not allowed by MUTCD so remove from sss. Use federal and create a 36x48 version for ssm	
Signs are different sizes. Text is different sizes. MNMUTCD calls for 30x30 but federal is 24x24.	No decision until brought to the MUTCD committee.
Could not find in federal version. There is only one in the field but in the mnmuted.	No decision until brought to the MUTCD committee.
Federal design is wrong so keep the MN version in the ssm and update to 2K font.	30x36 is in compliance with both mutcd's.

Minnesota is missing 24 and 30 inch variants. Use federal design for 36x36 only.	
Use federal design and code. Add to SSS	NO TURN ON RED EXCEPT FROM RIGHT LANE
Minnesota has 30x36, 36x48. Federal has 24x30. Federal design is wrong, keep MN designs for the ssm and update to 2K font.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Use federal design and code but 30x36 only. Remove from the SignCAD MN standards folder.	
This is not being used. Remove from SSS, SSM, TEM, MUTCD and SignCAD MN Standards folder.	Before deleting bring to MUTCD committee to see if it is ever used.
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Minnesota does not have 36x48, 48x60. MNMUTCD only allows 24x30. Use federal but 24x30 size only and remove from the SignCAD MN standards folder.	
Federal does not offer "Street" or "Ramp". Keep MN design but update to 2K font. Add Bike Lane, Bridge and Lane as additional alternate legends.	Lane closed may need it's own code, talk to Ken and MUTCD committee
Could not find in federal version. No decision until brought to MUTCD committee. MN created a whole bridge section that is not in the federal MUTCD. Get rid of "out" and add Bridge as another alternate language for R11-2.	Bring to MUTCD committee to approve change before deleting.
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder. Add Closed as an alternate language for R11-3b in the SSS	
This is not being used. Remove from SSS, SSM, TEM, MUTCD and SignCAD MN Standards folder.	Before deleting bring to MUTCD committee to see if it is ever used.
Use Federal design and code. Remove from SignCAD MN standards folder.	

Unique to Minnesota. Keep as is and update to 2K font.	No language in MUTCD or TEM, should there be? Was there ever a tech memo or TEO Topic for guidance/sizes. Same for W3-X6.
This is not being used. Remove from SSS, SSM, TEM, MUTCD and SignCAD MN Standards folder.	Before deleting bring to MUTCD committee to see if it is ever used.
Use Federal design and code. Remove from SignCAD MN standards folder.	
Minnesota missing 30x42. Truck symbols are different. Use Federal but put a line through 30x42 because it is no longer an option in either MUTCD	
This is not being used. Remove from SSS, SSM, TEM, MUTCD and SignCAD MN Standards folder.	Before deleting bring to MUTCD committee to see if it is ever used.
Unique to Minnesota. Keep as is and update to 2K font. Update code	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	
Use Federal design and code. Remove from SignCAD MN standards folder.	

Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.	Ask if it should still be used because feds have R3-33. If kept, code would be changed to R3-M33
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	Discuss with committee. Why do we not offer R16-1 as an option
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	
Unique to Minnesota. Keep as is and update to 2K font.	Add the word "Solid" to the MUTCD
Unique to Minnesota. Keep as is and update to 2K font.	

Proposed Updates, Changes and Additions for Standard Sign Summary, Standard Sign Manual, MNMUTCD and TEM

Minnesota Code	Federal Code	Code Different?	New Code	Design Different?	Comments
X1-1	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X1-2	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X1-3	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X1-5	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X3-1	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X3-2	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X3-3	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X3-4	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X3-6a	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X4-2	OM1-1	yes	OM1-1	no	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-2	OM1-2	yes	OM1-2	no	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-2	OM1-3	yes	OM1-3	no	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-3	OM2-2V	yes	OM2-2V	yes	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-4	OM3-L	yes	OM3-L	no	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-4	OM3-R	yes	OM3-R	no	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-4	OM3-C	yes	OM3-C	no	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-5	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.

Minnesota Code	Federal Code	Code Different?	New Code	Design Different?	Comments
X4-6	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X4-8	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X4-11	OM4-1	yes	OM4-1	no	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-11	OM4-2	yes	OM4-2	no	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-11	OM4-3	yes	OM4-3	no	Use Federal design and code. Remove from SignCAD MN Standards folder.
X4-12a	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X4-13	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X4-24	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X5-1	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
X5-2	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
	MN SPECIAL		X6-1		Would like to add this for Reflective Post Strip 3x72 with a note: "Match background color of primary sign except Yield an Do Not Enter shall be red"

Proposed Updates, Changes and Additions for Standard Sign Summary, Standard Sign Manual, MNMUTCD and TEM

Minnesota Code	Federal Code	Code Different?	New Code	Design Different?	Comments
S1-1	S1-1	No		No	Use Federal design and code. Remove from SignCAD MN Standards folder.
S3-1	S3-1	No		No	Use Federal design and code. Remove from SignCAD MN Standards folder.
S3-2a	S3-2	yes	S3-M2	yes	MN Modified. Update code in manuals, SignCAD MN Standard folder and Sign Library. Update to 2K font.
S3-X1	MN SPECIAL	NA		NA	Unique to Minnesota. Keep as is and update to 2K font.
S4-1P	S4-1P	No		No	No FHWA design, only code. Use MN design updated to 2K font for ssm
S4-2P	S4-2P	No		No	Use Federal design and code. Remove from SignCAD MN Standards folder.
S4-3P	S4-3P	No		No	Use Federal design and code. Remove from SignCAD MN Standards folder.
S4-4P	S4-4P	No		No	Use Federal design and code. Remove from SignCAD MN Standards folder.
S4-5	S4-5	No		No	Use Federal design and code. Remove from SignCAD MN Standards folder.
S4-6P	S4-6P	No		No	Use Federal design and code. Remove from SignCAD MN Standards folder.
S4-7P	S4-7P	No		No	Use Federal design and code. Remove from SignCAD MN Standards folder.
S5-1	S5-1	No		No	Use Federal design and code. Remove from SignCAD MN Standards folder.
S5-2	S5-2	No		Yes	Use Federal design and code. Remove from SignCAD MN Standards folder.
S5-3	S5-3	No		?	This is in MNMUTCD but not in the Standard Sign Summary or Standard Sign Manual. Would like to add to SSS, SSM and Sign Library. Use Federal design, code and 2K font.