13-5-6 Temporary Traffic Control Zones — February 2018

BACKGROUND

Speed limit reduction for temporary traffic control zones is discussed in Part 6 of the MUTCD. Excerpts from Section 6C.01 of the MUTCD state:

"Reduced speed limits *should* be used only in the specific portion of the temporary traffic control zone where conditions or restrictive features are present."

"A temporary traffic control plan *should* be designed so that vehicles can travel through the temporary traffic control zone with a speed limit reduction of no more than 10 mph."

"Reduced speed zoning (lowering the regulatory speed limit) *should* be avoided as much as practical because drivers will reduce their speeds only if they clearly perceive a need to do so."

"Research has demonstrated that large reductions in the speed limit increase speed variance and the potential for crashes. Smaller reductions in the speed limit of up to 10 mph cause smaller changes in speed variance and lessen the potential for increased crashes. A reduction in the regulatory speed limit of only up to 10 mph from the normal speed limit has been shown to be more effective."

The MUTCD guidance corresponds with conclusions of research titled, "Work Zone Speed Limit Procedure," documented in Transportation Research Record Volume 1657 and National Cooperative Highway Research Program Digest 192. Conclusions of the report include:

1. Motorists reduce their speed in temporary traffic control zones even with no speed limit reduction.
2. Where temporary traffic control zone speed limits are posted, motorists reduce their speed but not to the posted limit.
3. If a reduced speed limit is posted, compliance and crash prevention benefit are best if the speed limit is reduced no more than 10 mph.
4. There is commonly more variance in speed in temporary traffic control zones than in non-zones.
5. Where all work activity is on or beyond the shoulder, there are no benefits from reducing speed limits.
6. Interviews with motorists show that they resent arbitrary, inappropriate speed limits.
7. If a reduced speed limit is posted, the reduced limit must be removed where no activity is present.

To be consistent with the MUTCD and documented research, reductions in speed limits for temporary traffic control zones *should* be evaluated according to the criteria in this procedure.

There is often less need for reduced speed limits in temporary traffic control zones on rural conventional highways. The main reason is that on rural conventional highways, drivers do not have the same expectation for free-flowing traffic as they do on rural freeways. With driveway access and crossing movements on conventional highways, drivers tend to be alert to such movements and other similar conflicts even without reduced speed limits.

Changes in alignment such as crossovers and transitions, or work activities that occupy a short work area, *should not* be posted with short sections of regulatory speed limit signs. If a lower operating speed is necessary, warning signs with advisory speed plaques are more appropriate.

AUTHORITY

Authority to approve and establish temporary traffic control zone speed limits has been delegated to the Regional Work Zone Engineer. This conditional delegation effectively retained BTO Work Zone Operations Engineer approval authority for ~~for 65-mph and 70-mph highways.~~all interstates and facilities with a normal posted speed of 65 mph or greater.

POLICY CRITERIA

Engineering judgment must be used when determining appropriate speed zones. This procedure is intended to assist with the development of an appropriate work zone speed limit. Contact the region work zone engineer or the Bureau of Traffic Operations for assistance with applying this policy.

The majority of drivers operate their vehicles at a speed they deem appropriate for conditions. A posted speed that is close to what most drivers consider appropriate is more likely to yield uniform speeds. Consistent speeds improve safety for the travelling public and highway construction workers.

Speed zones provide drivers an indication of what is considered a reasonable speed for that section of roadway. Proximity to construction activities, drop offs, lane closures, narrow lanes/shoulders and pavement condition all influence the driver's determination of a reasonable speed. The type of construction work, project length, area type (i.e. urban vs. rural), facility type, occurrence of night work and traffic mix (e.g. commuter, recreational, truck percentages) all impact driver expectations and the determination of what is a reasonable speed. The policy criteria described below *should* only be used for ~~freeways and expressways~~facilities during intermediate-term and long-term work activities as defined in Part 6 of the MUTCD.

Speed reductions in segments without active work lead to disregard of the posted speed. When there is no work activity, ~~or~~ traffic control devices are pulled back and lanes re-opened, the temporary speed limit **sh**all~~*ould*~~ be removed. Work with your project manager to incorporate standard special provisions for removing temporary speed zones. ~~when there is no work activity.~~

~~Tables 1 and 2 and Figure 1 *should* be used~~Policy criteria 1 through 6 should be evaluated, along with engineering judgment, to develop an appropriate work zone speed limit. The most restrictive work zone impact *should* be used as the determining condition.

All reduced work zone speed limits **shall** be approved prior to approval of the 90% Transportation Management Plan (TMP).

1. Interstates and Expressways with 70 or 65-MPH speed limit:

- If ~~B~~bi-~~D~~directional ~~T~~traffic ~~S~~separated by ~~T~~tubular ~~M~~markers, then reduce to 55 MPH
- If ~~W~~workers ~~P~~present within 12 feet of live traffic without positive protection then reduce to 55 MPH
- If w~~W~~ork zone is less than or equal to 0.5 miles in length with lane shifts or narrowed travel lanes and positive protection, then post warning signs with an advisory speed plaque
- If w~~W~~ork zone less than or equal to 0.5 miles in length with no lane shifts or narrowed travel lanes and positive protection, then do not lower the speed limit
- If w~~W~~ork ~~zones with work~~ is taking place outside the clear zone, then do not lower the speed limit
- All other work zones **shall** be reduced to 60 MPH (70 to 60 MPH or 65 to 60 MPH)

~~**Table 1.** Temporary Traffic Control Zone Speed Limit Conditions~~

~~Work Zone Condition~~	~~Original Posted Speed Limit (mph)~~	~~Speed Limit Reduction (mph)~~
~~Lane width less than 12 ft.~~	~~65 - 70~~	~~Up to 10~~
	~~≤ 55~~	~~0~~
~~Lane shift to shoulder or temporary pavement~~	~~65 - 70~~	~~Up to 10~~
	~~≤ 55~~	~~0~~
~~Lane closure without positive protection~~	~~65 - 70~~	~~Up to 15~~
	~~≤ 55~~	~~0~~
~~Shoulder width less than 8 ft.~~	~~65 - 70~~	~~Up to 10~~
	~~≤ 55~~	~~0~~

During periods of no work activity when devices are pulled back and lanes re-opened ~~or when workers are not present~~, restore speed limit to normal posted speed. Such speed limit reduction **shall** be subject to documented approval by the BTO Work Zone Engineer. When a reduced work zone speed limit is recommended in the Transportation Management Plan (TMP), a temporary speed zone declaration **shall** be completed and sent to BTO for approval.

2. Expressways and other multi-lane highways with 55 or 50-MPH speed limit:

Reduce to 45 MPH only in ~~severe~~ situations that have a combination of extreme lane shifts, narrowed lanes, bi-directional traffic or milled surfaces.~~where lanes are narrowed and lane shifts require a reduction in speed to negotiate the shift.~~

~~During periods of no work activity when devices are pulled back and lanes re-opened or when workers are not present, restore speed limit to original.~~ Restore speed limit to normal posted speed when reduction criteria are not present.

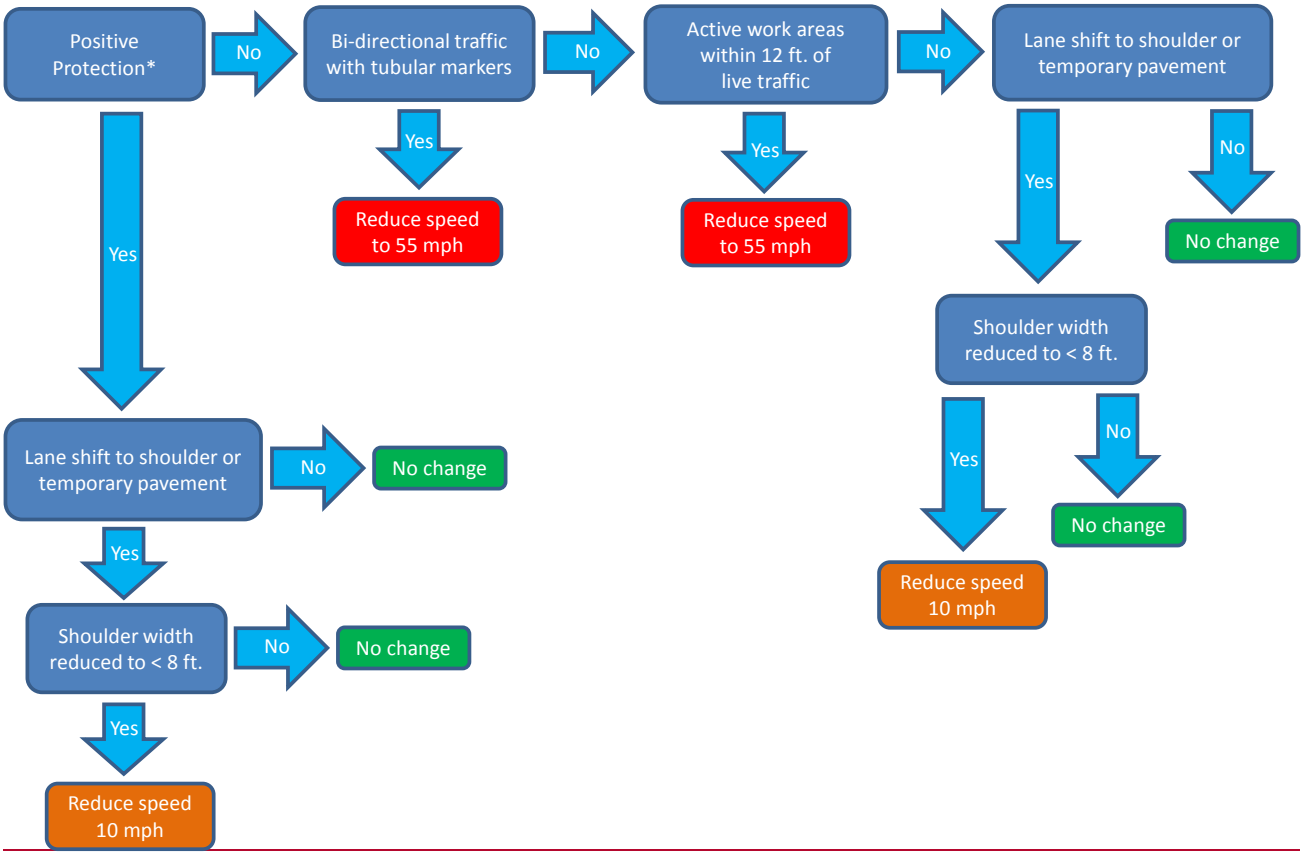
3. Multi-lane highways with 45-MPH speed limit – Reduce speed limit to 35 MPH only in situations that have a combination of extreme lane shifts, narrowed lanes, bi-directional traffic or milled surfaces.~~in severe situations with lane shifts.~~

4. Two~~2~~-lane rural highways with 55-MPH speed limit – Reduce to 45 MPH only in situations that have a combination of extreme lane shifts, narrowed lanes or milled surfaces. ~~when lanes are narrowed, lane shifts require a reduction in speed to negotiate the shift, or the roadway surface is temporarily degraded (e.g., gravel surface).~~ Flagging operation in and of itself would typically not warrant a reduced speed limit since motorists are controlled by the flagging devices.

5. ~~2~~Two-lane rural roadways with speed limit of 45 MPH of less – typically no reduction in speed limit. *May* consider a speed reduction up to 10 mph in increments of 5 mph~~ if~~ in situations that have a combination of extreme lane shifts, narrowed lanes or milled/gravel surfaces.~~lanes are narrowed, lane shifts require a reduction in speed to negotiate the shift, or the roadway surface is temporarily degraded (e.g., gravel surface).~~

6. Two~~2~~-lane urban roadways with speed limit of 40 MPH or less – no change in speed limit except reduction to 35 MPH *may* be considered in situations that have a combination of extreme lane shifts, narrowed lanes or milled/gravel surface. ~~when on temporary roadway or gravel surface, or in severe situations where lanes are narrowed or lane shifts require a reduction in speed to negotiate the shift.~~

~~**Figure 1.** Temporary Traffic Control Zone Speed Limit Chart~~



*Positive protection is defined by FHWA as a temporary precast concrete barrier that contains or redirects vehicles and separates workers from the active travel lanes.

Table 2. Example Temporary Traffic Control Zone Scenarios

	Bi-directional traffic separated by flexible tubular markers
	Active work areas within 12-ft. of live traffic without ~~positive protection~~positive protection
	Lane shift to shoulder or temporary pavement
	Lane closure without ~~positive protection~~positive protection
	~~Shoulder width less than 8 ft.~~

SPEED ZONE DECLARATIONS

Reduced speed limits in temporary traffic control zones are subject to documented approval by the State Traffic Engineer or their delegate's approval identified as "Reviewer" on the Speed Zone Declaration. A Speed Zone Declaration **shall** be submitted through the Department's Speed Zone Application (Figure 1~~2~~) found at the following link:

https://webapp.dot.state.wi.us/speedzones/

Requests for access to the Speed Zone Application should be sent to the ~~State~~ BTO ~~Traffic Safety~~Work Zone Operations Engineer ~~in the Bureau of Traffic Operations~~.

The temporary speed zone requestor **shall** include justification for the speed zone request, supporting documentation including, but not limited to, temporary traffic control plans, construction project ID associated with the speed zone and an explanation of any exceptions to the policy criteria described above.

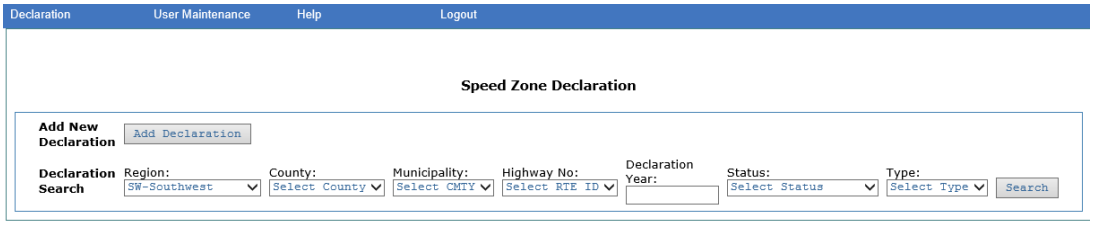
Where speed limit reductions in temporary traffic control zones are determined to be appropriate, the declaration *should* be written to indicate its association with the appropriate project so that a follow-up declaration to rescind is not necessary. A suggested format is:

> *Interstate Highway 94*
>
> *( ). Fifty-five miles per hour from a point one mile west of County Trunk Highway "X" in Jefferson County, to a point 0.5 miles east of the roadway structures of State Trunk Highway 26 for the duration of construction of Project 1234-56-78. This speed limit declaration **shall** be effective only when workers are unprotected, there is active work within 12-ft. of live traffic, and the speed limit is posted by regulatory signing.*

For long-term work zones that overlap construction years, the Region **shall** denote the time period of the speed limit reduction during the appropriate construction year(s). Example:

> *This declaration is valid from the commencement of the active construction operations to the final conclusion of active construction operations during calendar year (CY) 2016 within WisDOT construction project ID XXXX-XX-XX.*

Figure ~~2~~1: Speed Zone Application



Adding Speed Zone Declaration

CORRESPONDENCE/MEMORANDUM

Declaration Type: ◉ Permanent Speed Zone Declaration ○ Temporary Speed Zone Declaration

Region: SW-Southwest | County:** Select County | Municipality: Select CMTY

Declaration ID: SZ - - - 2015 ** - 35 (SZ - County Code - Highway No - Year - Two Digit Sequence No)

Submitter: SILVERSON, EMILY S | Status: In Process | Update User:

STUDY LOCATION

Rescind Speed Zone Declaration:

Highway/Street Name:*

Add New Segment

Total Segment Length (mi):

School Zone: ☐

Reason(s) for Speed Limit Change:

REQUEST FOR APPROVAL OF DECLARATION

BTO Approval Required:* ○ Yes ○ No

Permanent Declaration:

The following information supporting the recommendation is enclosed with this request:

☐ Map showing limits ☐ Speed Study data

☐ Crash history data ☐ Aerial/site location photo(s)

☐ Documents of public interest ☐ Highway log files

Other (please specify):

Additional comments that may be significant or noteworthy:

Reasoning for omission of any information requested:

Back Save Cancel Submit

** fields required for saving the declaration;

CORRESPONDENCE/MEMORANDUM

Back Amend Print

Permanent/Temporary Speed Study Worksheet

Declaration Type: ○ Permanent Speed Zone Declaration ◉ Temporary Speed Zone Declaration

Region: NC-North Central | County: 37-MARATHON | Municipality: T-KRONENWETTER | Highway No: 039

Project ID: 1160-01-77

Other:

Submitter: BRUNNAN JR, DANIEL J | Status: Approved | Update User: SCHOON, ERIN M

STUDY LOCATION

Highway/Street Name: IH 39

Proposed Speed Limit: (a) 55 | 55

From: 0.7 miles north of STH 153 | To: Maple Ridge Road overpass

Municipality: | County:

Segment Length (mi): 1.17

Total Segment Length (mi): 1.17

School Zone: ☐

Reason(s) for Speed Limit Change: It is proposed to install a polymer overlay treatment to the surface of structure B-37-0417.

Anticipated Start Date: 07/15/2019 | Anticipated End Date: 07/26/2019

REQUEST FOR APPROVAL OF DECLARATION

BTO Approval Required: ◉ Yes ○ No

Temporary Declaration:

Criteria and description of work zone justification: Lane(s) closed and workers present and active in proximity to the roadway without positive protection in all stages. (Up to 15 mph reduction)

Information supporting the recommendation is enclosed ☑

Discussion (Including explanation of the exception(s)): Reduced speed limit will only be in place when a lane is closed and workers are present without positive protection.

Additional comments that may be significant or noteworthy:

Reasoning for omission of any information requested:

Approved/Denied by: SCHOON, ERIN M | Approved/Denied date: 03/14/2018

COMMENTS required if denying the declaration:

Attachment Request Amend