ALTERNATIVE PROCEDURE FOR THE DETERMINATION OF WORK ZONE SPEED LIMITS

A. INTRODUCTION

One of the fundamental hypotheses for the application of reduced speed limits in work zones asserts that reduced crash rates and less severe accidents could be attained if motorists reduce their vehicle speeds. Under this context, state highway agencies use three general methods for the determination of work zone speed limits (1):

(a) Methods that avoid speed limit reductions whenever possible;

(b) Methods based on blanket speed limit reductions (i.e., speed limits are always or nearly always reduced in work zones); and

(c) Methods in which work zone speed limits are established on the basis of specific set of factors.

Typically, where a speed limit reduction is called for, a 10-mph speed reduction to the normal posted speed is applied in active work zones. Regulatory and/or advisory speed limits signs are the means used by most transportation agencies to convey the speed reduction information to the public. It should be noted, where a reduced speed limit is imposed, the normal limit should be restored during times where there is no work activity or otherwise no need to continue the reduced speed limit.

B. OBJECTIVE

- Reduce the frequency and severity of work zone crashes.

C. LITERATURE REVIEW SUMMARY

C.1. ADVANTAGES

- The relationship between vehicle speed and crash severity is unquestionable and based on the laws of physics. That is, the probability of injury, and the severity of injuries that occur in a crash, increase or decrease as a function of vehicular speed.

C.2. DISADVANTAGES

- In general, drivers do not feel constrained to obey speed limits that they consider unreasonable. If the chosen work zone speeds are too low, drivers will lose respect for the speed control effort, and even active control might not be enough to increase compliance with the posted speed limit.
- Speed limit reductions can reduce roadway capacity and cause localized traffic congestion, which in turn can increase the potential for rear end accidents.
- Regulatory and advisory speed limit signs alone have a minimal impact in reducing traffic speeds in work zones.

C.3. OTHER RELEVANT FINDINGS/ISSUES

- Research has shown that drivers do reduce speeds in work zones, particularly when workers are present, independently of whether speed limit reductions are implemented or not.
- Motorists believe that when work is off the traveled way or when no work is being conducted, the speed limit should not be reduced.
- Speed limit reductions higher than 10 mph below the preconstruction speed limit result in significant speed variance increases.

- To increase compliance with the reduced work zone speed limit, consideration should be given to speed control techniques other than regulatory or advisory speed limits (e.g., police presence, drone radar, etc.).
- As a rule, motorists like to be kept informed, not regulated.

D. GUIDELINES

In addition to the guidelines described herein (transcribed from NCHRP Project 3-41), implementation of reduced work zone speed limits shall conform to guidelines from the Manual on Uniform Traffic Devices for Streets and Highways (section 6C.01).

The current SHA policy for reducing speed limits in work zones is based on an engineering study/judgment. The current policy is located in Appendix A. It should be noted, where a reduced speed limit is imposed, the normal limit should be restored during times there is no work activity, or where otherwise is not need to continue the reduced speed limit.

Appendix B provides a succinct presentation of the recommended NCHRP procedure for the determination of work zone speed limits.

NCHRP Project 3-41 states the following:

- Reduced work zone speed limits should be used only during specific periods and only in the specific portion of the work zone where the engineering factors identified in the work zone speed limit procedure are present.
- Work zone speed limit reductions should be avoided whenever possible, particularly in work zones where all work activities are located in shoulder or roadside areas and when no work activities are under way.
- A 10-mph reduction below the normal speed limit is desirable as a work zone speed limit when: (a) Work takes place on or near the traveled way, particularly

on rural freeways; (b) Personnel are required to work for extended periods in an unprotected position within 10 ft of the edge of the traveled way.

- Blanket policies mandating the reduction of work zone speed limits to a fixed value are not recommended.
- At such locations where work activities are removed from the roadway by 10 ft or more, it is recommended that the work zone speed limit not be reduced.
- Reduced speed limits are generally most appropriate for projects that last at least 24 hours; however, if appropriate, reduced work zone speed limits may be established for projects of shorter duration.
- Where work zone geometrics with reduced design speeds cannot be avoided, the work zone speed limit should not exceed the design speed, even if this requires a work zone speed limit reduction greater than 10 mph.

Disclaimer

The information provided in this section of the Maryland State Highway Administration's Work Zone Safety Tool Box is only to provide guidance. The Work Zone Safety Tool Box supplements current practices and standards provided in the current edition of the following documents:

1) The Manual on Uniform Traffic Control Devices (MUTCD)
2) The Maryland Supplement to the Manual on Uniform Traffic Control Devices
3) Maryland State Highway Administration Standard Sign Book
4) Maryland State Highway Administration Book of Standards and for Highway and Incidental Structures
5) Maryland Department of Transportation State Highway Administration Standard Specifications for Construction and Materials

E. BIBLIOGRAPHY

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2. Maze, T.; Kamyab, A.; Schrock, S. (2000). Evaluation of Work Zone Speed Reduction Measures. CTRE Management Project 99-44. Center for Transportation Research and Education, Iowa State University. Ames, IA.

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APPENDIX A: CURRENT SHA POLICY ON DETERMINING WORK ZONE SPEED LIMITS

SPEED CONTROL

Maryland Department of Transportation
State Highway Administration

Parris N. Glendening
Governor
John D. Porcari
Secretary
Parker F. Williams
Administrator

MEMORANDUM

TO: See Distribution

FROM: Douglas R. Rose
Deputy Administrator
Chief Engineer for Operations

DATE: October 16, 2002

SUBJECT: Work Zones on 65/60 MPH Roadways

This is in reference to guidelines, dated May 4, 1995, regarding mandatory reduction of speed limits in work zones along 65 and 60 MPH roadways. These guidelines stated that any construction, maintenance, or utility work zone along a 65 or 60 MPH highway that involves work activity on the shoulder or roadway shall have a mandatory reduction of speed limit to 55 MPH.

Speed limits in work zones should be very carefully established as it affects safety of motorists/workers, compliance by motorists, and credibility of speed limits in general. Considering the limited law enforcement resources available for highway projects, it is completely unrealistic to assume that it will be possible to force compliance with speed limits that are perceived by the public as being unreasonable or unnecessary. Motorists best respond to positive information regarding driving conditions and not to unrealistic regulations.

Any unrealistic speed limit reduction in work zones will result in high relative speeds which may result in unsafe driving conditions. Accident rates are lowest when speed limits are consistent (approximately 85th percentile) with operating speeds.

Considering above factors, the guidelines are being revised to include the following.

- Work zone traffic controls should be designed to ensure adequate safety and mobility through work zones and provide site conditions consistent with the prevailing operating speeds and driver expectations.
- Where it is necessary to reduce speed limits to improve safety, such reduced speed limits should be based on adequate engineering study/judgment and approved by the District Engineer. The reduced speed limit should be usually 5 MPH less than the normally posted speed limit, but shall be reduced no more than 10 MPH.
- Reduced speed limits must be posted only when the conditions necessitating the reduced speed are actually present. It is essential to cover or remove reduced speed limit signs if work is not actually underway and site conditions do not require a reduced speed limit.

My telephone number is _____

Maryland Relay Service for Impaired Hearing or Speech
1-800-735-2258 Statewide Toll Free

Mailing Address: P.O. Box 717 • Baltimore, MD 21203-0717
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202

Revised guidelines for reduced speed limits on 65 and 60 MPH roadways are attached. If you have any questions, please feel free to contact Mr. Tom Hicks, Director of Traffic and Safety for the State Highway Administration at 410-787-5815 or thicks@sha.state.md.us.

Attachments

cc: Tom Hicks, P.E., Director of Traffic and Safety, State Highway Administration
Mr. Jawad Paracha, Acting Team Leader, State Highway Administration
Mr. Wayne Styles, Acting Assistant Division Chief, State Highway Administration
Mr. Eric Tabacek, Division Chief of Traffic Development and Support Division, State Highway Administration

Work Zones along 60 and 65 MPH Highways

Where it is necessary to reduce speed limits to improve safety in work zones along 65 and 60 MPH roadways, such reduced speed limits should be based on adequate engineering study/judgment and approved by District Engineer. The reduced speed limit should be usually 5 MPH less than the normally posted speed limit, but shall be reduced no more than 10 MPH.

These work zones shall be clearly marked with all appropriate speed reduction and work zone warning signs. This signing shall include the FINES DOUBLE IN WORK AREAS message.

General

- Drivers generally respond more favorably to information about what they are going to encounter as they approach work zones, than they do to any regulatory direction given without explanation.
- Drivers will reduce speed when they perceive a need to do so.
- As set forth in the MUTCD Fundamental Principles, work zones should be designed to operate at normal operating conditions, to the extent possible.
- Work zone traffic controls should be designed to ensure adequate safety and mobility through work zones and provide site conditions consistent with the prevailing operating speeds and driver expectations.
- Reduced speed limits should be posted only when the conditions necessitating the reduced speed are actually present. It is essential to cover or remove reduced speed limit signs if work is not actually underway and site conditions do not require a reduced speed limit. The reduced work zone speed limit is to be displayed only at those times it is needed and removed when no longer needed. The removal of the speed limit signing may be accomplished by folding, covering, turning or physically removing from the highway.
- Use advisory speed limits for spot situations such as sharp alignment changes, or short sections of narrow lanes, etc.
- Advisory speed signing shall not be used with general warning signs (e.g. W20-1), or along sections of the work zone.
- The use of regulatory work zone speed limits should be made in conjunction with State Police usage.
- All traffic control devices are to be placed and maintained in the line with SHA requirements and the MUTCD.
- Work zone speed limit signs shall be placed in accordance with SHA guidelines and standards.

15.0 SIGHT DISTANCE

15.1 Temporary traffic control devices, including drums, barriers, and vertical panels, and construction equipment, shall be placed to ensure that adequate sight distance is not restricted at ramp junctions and intersections. If sight distance restrictions are unavoidable, additional applicable warning signs must be installed. The placement of vertical panels on concrete barrier and the close spacing of approved drums may, in some instances, contribute to restricted sight distance at roadway junctions. For additional guidance on channelizing device placement at intersections, driveways, and/or ramp junctions, see Standard Detail MD 104.01–29.

The following additional criteria should be considered when placing traffic control devices at intersections or ramp junctions:

- TCDs installed at or near intersections, including median openings or driveways, should be designed/installed with adequate corner sight distance (as suggested for intersections in Chapter 9 of AASHTO's "A Policy on Geometric Design of Highways and Streets", 2001 ed.). The area around the intersection should be kept free of obstacles.

- Sight distance along a ramp should be, at a minimum, equal to the safe stopping sight distance based on prevailing speed.

- There should be a clear view of the entire exit terminal, including the exit nose and a section of the ramp roadway behind the gore.

16.0 WORK ZONE SPEED LIMITS ALONG 65 AND 60 MPH ROADWAYS

16.1 Where it is necessary to reduce work zone speed limits along 65 and 60 MPH roadways, such reduced speed limits should be based on adequate engineering study /judgment and approved by the District Engineer. The reduced speed limit should usually be 5 MPH less than the normally posted speed limit, but shall be no more than 10 MPH less than the posted speed. The following guidelines are to be used in consideration of speed limit reduction in work zones:

- Work zone traffic controls should be designed to ensure adequate safety and mobility through work zones and provide site conditions consistent with prevailing operating speeds and driver expectations.

- Where the Engineer is considering reducing the posted speed limits to improve safety, such reduced speed limits should be based on adequate engineering study /judgment and approved by the District Engineer.

- Reduced speed limits should be posted only when the conditions that necessitate the reduced speed are actually present. It is essential to cover or remove reduced speed limit signs if work is not actually underway and site conditions do not require a reduced speed limit.

- Use advisory speed limits for spot situations, such as sharp alignment changes or short section of narrow lanes.

- Advisory speed signing shall not be used with general warning signs (e.g. W20–1), or along sections of the work zone.

- The use of regulatory work zone speed limits should be made in conjunction with State Police usage.

- All traffic control devices are to be placed and maintained in accordance with SHA requirements and the MUTCD.

- Work zone speed limit signs shall be placed in accordance with SHA guidelines and standards (see MD 104.01–06 and MD 104.01–07 for additional information).

17.0 HIGHWAY/RAIL GRADE CROSSINGS

17.1 Where vehicles might be stopped within a highway–rail grade crossing, the limits of which are defined as 15 feet on either side of the outside rail, the following guidelines apply:

- Coordinate with appropriate agency or company having jurisdiction over the affected rail line prior to the start of road work. Do not set up any portion of the work zone within railroad right of way. The OOTS Railroad Coordinator (Phone (410) 787–5867) should be contacted if this information is not known.

- When a two–way flagging operation will result in a queue that extends across the highway–rail grade crossing, an additional flagger shall be provided at the approach to highway–rail grade crossing.

- Consider the railroad gate operation in the placement of traffic control devices.

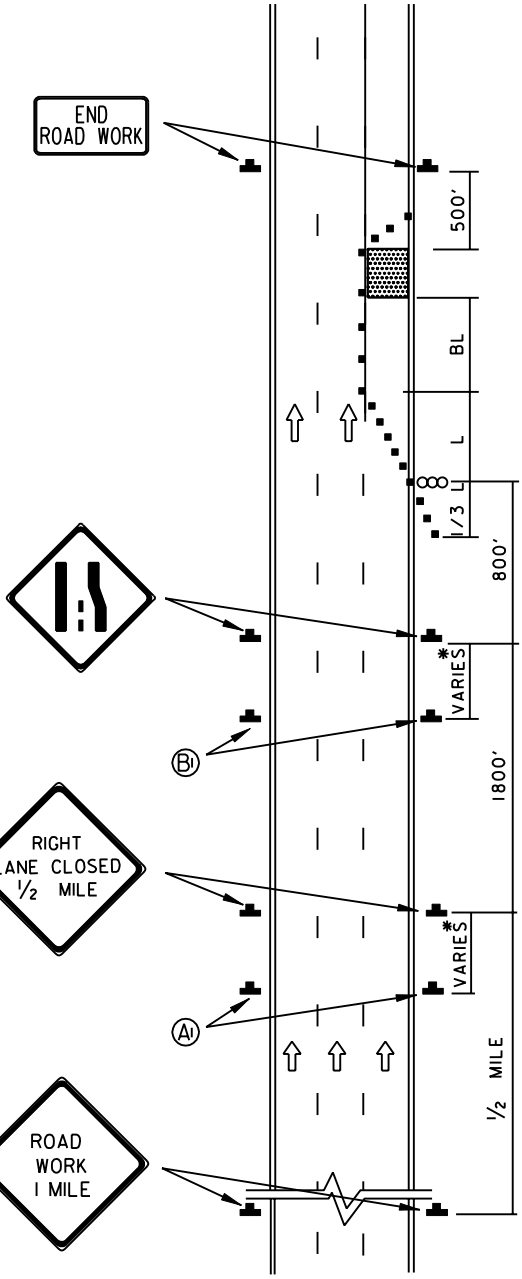
- The DO NOT STOP ON TRACKS sign (design) shall be used on all approaches to a highway–rail grade crossing within the limits of a temporary traffic control zone.

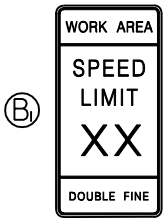
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
PLACEMENT OF REGULATORY SPEED SIGNS
PROJECT EQUAL TO OR LESS THAN 2 MONTHS IN DURATION

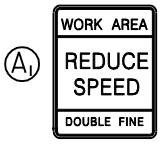
NOTE:
THE PLACEMENT OF THE REGULATORY SPEED SIGNS VARIES AS DIRECTED BY THE ENGINEER.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT
- FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL







NOTE:
A MEMORANDUM OF ACTION (MOA) FOR TEMPORARY SPEED LIMIT REDUCTIONS IN WORK ZONES MUST BE IN EFFECT OR REGULATORY SIGNS ERECTED WITHIN THE WORK ZONE ARE NOT ENFORCEABLE. IN ORDER TO OBTAIN AN MOA FOR A TEMPORARY SPEED LIMIT REDUCTION WITHIN A WORK ZONE, THE FOLLOWING MUST BE COMPLETED:

- A TRAFFIC ENGINEERING STUDY THAT ANALYZES TRAFFIC CONDITIONS DURING CONSTRUCTION.
- A DETERMINATION OF THE CONDITIONS THAT NECESSITATE THE REDUCED SPEED LIMIT.
- A RECOMMENDATION OF THE APPROPRIATE SPEED LIMIT, BASED ON TRAFFIC CONDITIONS.
- A STATEMENT OF THE EXTENT OF THE WORK ZONE WHERE THE TEMPORARY SPEED LIMIT REDUCTION IS TO BE ENFORCED.

THE MOA FOR TEMPORARY SPEED LIMIT REDUCTIONS IS CONSIDERED "IN EFFECT" UPON APPROVAL OF THE DISTRICT ENGINEER.

* MAINTAIN MINIMUM 300' SPACING BETWEEN SIGNS

SPECIFICATION	CATEGORY CODE ITEMS
	SECTION 100

APPROVED _____
DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	**8-20-03**	APPROVAL	**9-23-03**
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

SHA State Highway Administration

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REGULATORY SPEED SIGNS

STANDARD NO. MD 104.01-06

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
PLACEMENT OF REGULATORY SPEED SIGNS
PROJECT GREATER THAN 2 MONTHS IN DURATION

NOTES:

THE PLACEMENT OF THE REGULATORY SPEED SIGNS VARIES AS DIRECTED BY THE ENGINEER.

* ADDITIONAL SPEED LIMIT SIGNS MAY BE REQUIRED AND SPACED AT ABOUT 1000 FT AND ½ MILE FOR LOW AND HIGH SPEED ROADWAYS RESPECTIVELY, AS DIRECTED BY THE ENGINEER.

KEY:

- CHANNELIZING DEVICES
- SIGN SUPPORT / FACE OF SIGN
- DIRECTION OF TRAFFIC
- WORK SITE
- ARROW PANEL

NOTE:

A MEMORANDUM OF ACTION (MOA) FOR TEMPORARY SPEED LIMIT REDUCTIONS IN WORK ZONES MUST BE IN EFFECT OR REGULATORY SIGNS ERECTED WITHIN THE WORK ZONE ARE NOT ENFORCEABLE. IN ORDER TO OBTAIN AN MOA FOR A TEMPORARY SPEED LIMIT REDUCTION WITHIN A WORK ZONE, THE FOLLOWING MUST BE COMPLETED:

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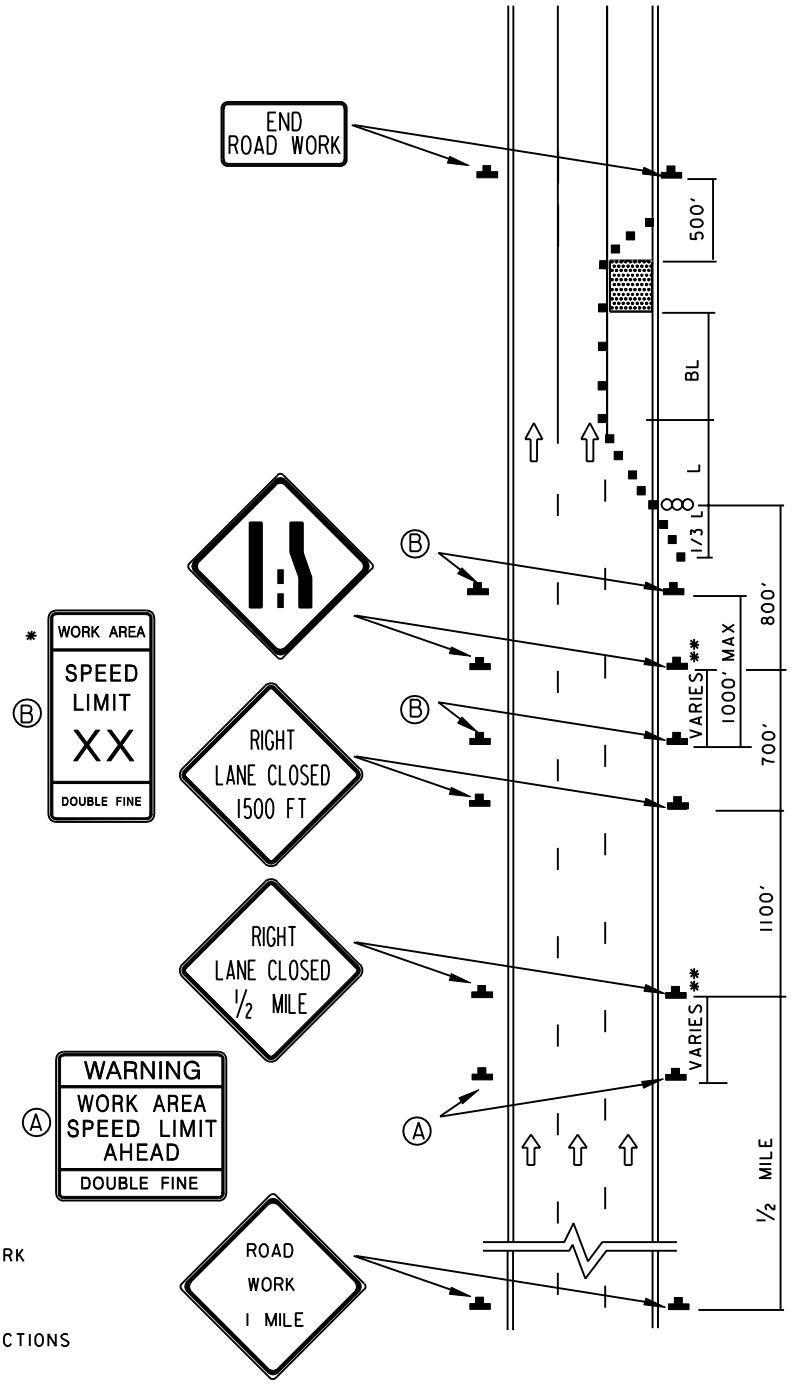
THE MOA FOR TEMPORARY SPEED LIMIT REDUCTIONS IS CONSIDERED "IN EFFECT" UPON APPROVAL OF THE DISTRICT ENGINEER.

* *MAINTAIN MINIMUM 300' SPACING BETWEEN SIGNS



SPECIFICATION	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF TRAFFIC AND SAFETY

APPROVAL • SHA REVISIONS		APPROVAL • FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL	8-20-03	APPROVAL	9-23-03
REVISED		REVISED	
REVISED		REVISED	
REVISED		REVISED	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

REGULATORY SPEED SIGNS

STANDARD NO. MD 104.01-07

APPENDIX B: PROCEDURE FOR DETERMINING WORK ZONE SPEED LIMITS (NCHRP PROJECT 3-41)

Due to the inconsistencies in the methods used to determine work zone speed limits, in 1988 the AASHTO Highway Subcommittee on Traffic Engineering and the Construction and Maintenance Technical Committee of the National Committee on Uniform Traffic Control Devices unanimously concurred that research was urgently needed to establish a uniform procedure for determining work zone speed limits.

As a result, a contract was awarded to Graham Migletz Enterprises, Inc. (GME), who based on a comprehensive literature review, interviews with state and local highway agency officials, surveys of motorists, highway contractors, and insurance carriers, before-and-after speed and accident data collected for sixty-eight (68) work zones deployed in rural and urban environments, on two-lane and multi-lane highways, developed a procedure for determining appropriate work zone speed limits.

The primary basis of this procedure is the classification of work zone situations based on the potential hazard present in the work zone, represented by the location of work activities in relation to the traveled way (i.e., work zone conditions). The procedure is intended to help establish speed limits on the basis of actual conditions in the work zone, rather than the prevailing traffic speeds. Speed limits are determined on a site-by-site basis, and the procedure is applicable to stationary construction zones, maintenance zones, utility operations, intermittent moving operations, and continuous moving operations. The procedure consists of the following steps:

- *Step 1* – Determine the existing speed limit,
- *Step 2* – Determine the work zone condition that applies,
- *Step 3* – Determine which factors for the appropriate condition apply to the specific site, and
- *Step 4* – Select the work zone speed limit.

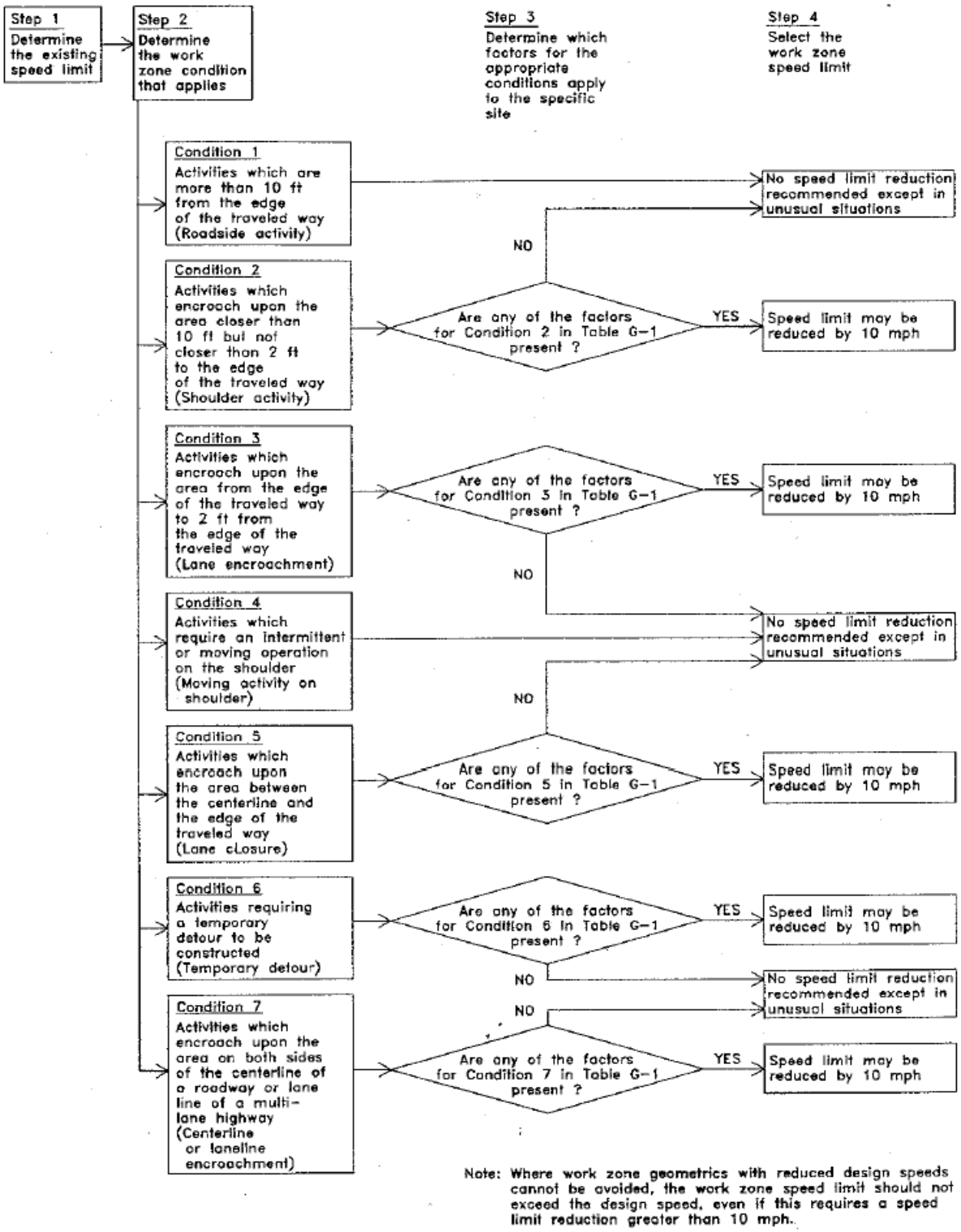


Figure 1. Work zone speed limit procedure flowchart.

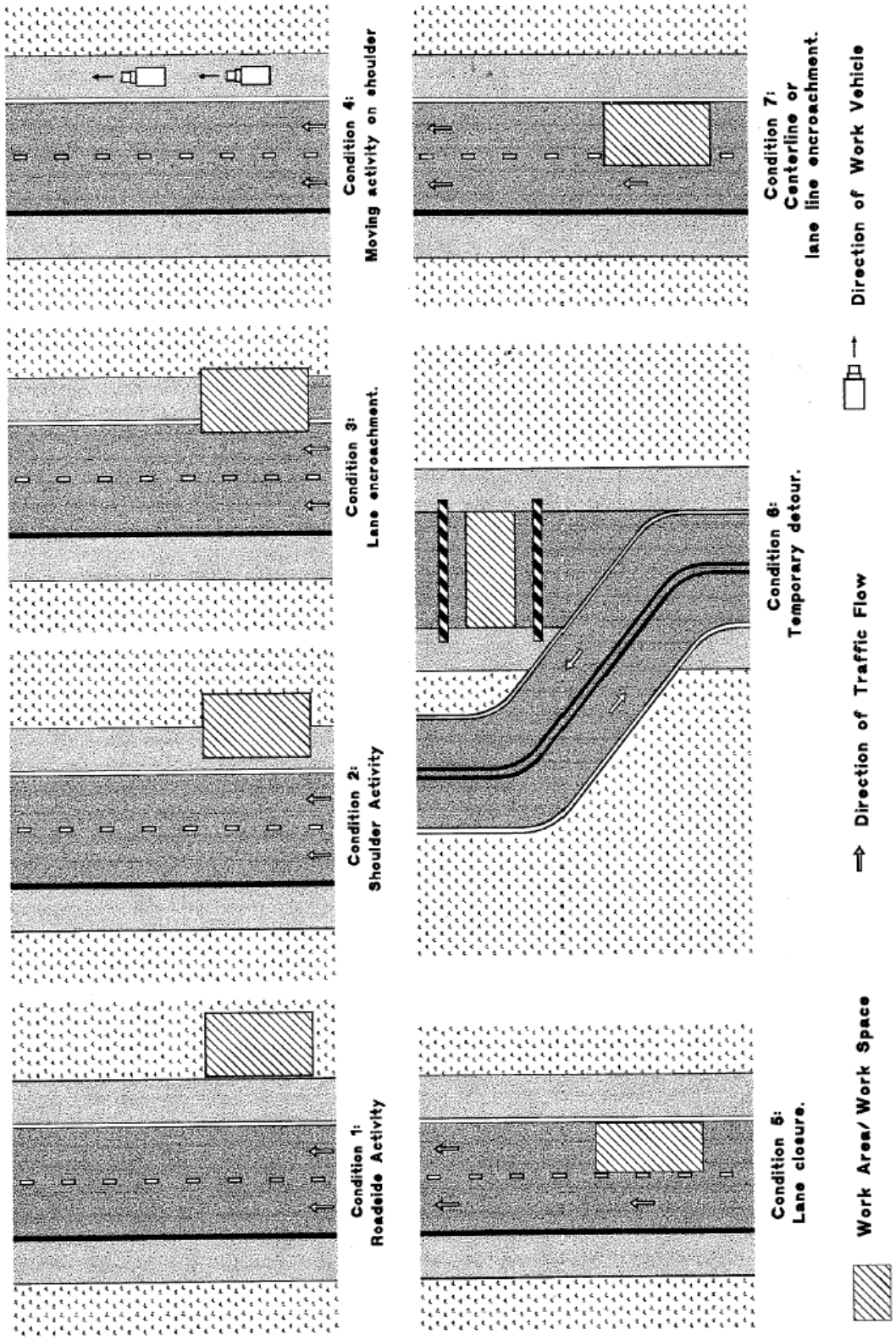


Figure 2. Work zone conditions.

Table 1. Factors to be considered for work zone condition 1.

Condition 1

Activities that are more than 10 ft from the edge of the traveled way (roadside activity)

Typical Applications

Roadway construction
Cleaning drainage
Landscaping work
Structural work
Utility work
Reworking ditches
Fencing work

Reductions to Existing Regulatory Speed Limit

Should not be used*

Suggested Maximum Amount of Speed Reduction

None

Factors

None

The regulatory speed limit shall meet all requirements of the *MUTCD*.

*There should not be a reduction to the existing regulatory speed limit unless unusual situations create hazardous conditions for motorists, pedestrians, or workers.

Table 2. Factors to be considered for work zone condition 2.

Condition 2

Activities that encroach on the area closer than 10 ft but not closer than 2 ft to the edge of the traveled way (shoulder activity)

Typical Applications

Roadway construction
Culvert extensions
Guardrail installation
Cleaning drainage
Reworking ditches
Shoulder work
Utility work
Side slope work
Landscaping work
Structural work
Sign installation

Reductions to Existing Regulatory Speed Limit

May be used where **Factors** exist

Suggested Maximum Amount of Speed Reduction

10 mph

Factors

- Workers present for extended periods within 10 ft of traveled way unprotected by barriers
- Horizontal curvature that might increase vehicle encroachment rate (could include mainline curves, ramps, and turning roadways)

The regulatory speed limit shall meet all requirements of the *MUTCD*.

Table 3. Factors to be considered for work zone condition 3.

Condition 3

Activities that encroach on the area from the edge of the traveled way to 2 ft from the edge of the traveled way (lane encroachment)

Typical Applications

Roadway construction	Utility work
Guardrail installation	Shoulder work

Reductions to Existing Regulatory Speed Limit

May be used where **Factors** exist

Suggested Maximum Amount of Speed Reduction

10 mph

Factors

- Workers present for extended periods within 2 ft of traveled way unprotected by barrier
- Horizontal curvature that might increase vehicle encroachment rate (Could include mainline curves, ramps, and turning roadways.)
- Barrier or pavement edge dropoff within 2 ft of traveled way
- Reduced design speed for stopping sight distance
- Unexpected conditions

The regulatory speed limit shall meet all requirements of the *MUTCD*. Where work zone geometrics with reduced design speeds cannot be avoided, the work zone speed limit should not exceed the design speed, even if this requires a work zone speed limit reduction greater than 10 mph.

Table 4. Factors to be considered for work zone condition 4.

Condition 4

Activities that require an intermittent or moving operation on the shoulder (moving activity on shoulder)

Typical Applications

Roadway construction
Widening
Delineator installation
Shoulder and slope work
Utility work
Guardrail installation
Landscape work

Reductions to Existing Regulatory Speed Limit

Should not be used*

Suggested Maximum Amount of Speed Reduction

None

Factors

None

The regulatory speed limit shall meet all requirements of the *MUTCD*.

*There should not be a reduction to the existing regulatory speed limit unless unusual situations create hazardous conditions for motorists, pedestrians, or workers.

Table 5. Factors to be considered for work zone condition 5.

Condition 5

Activities that encroach on the area between the centerline and the edge of traveled way (lane closure)

Typical Applications

Roadway construction
Pavement repair
Utility work
Widening
Pavement resurfacing
Pavement marking
Bridge repair

Reductions to Existing Regulatory Speed Limit

May be used where **Factors** exist

Suggested Maximum Amount of Speed Reduction

10 mph

Factors

- Workers present for extended periods in the closed lane unprotected by barrier
- Lane width reduction of 1 ft or more with a resulting lane width less than 11 ft
- Traffic control devices encroaching on a lane open to traffic or within a closed lane but within 2 ft of the edge of the open lane
- Reduced design speed for taper length or speed change lane length
- Barrier or pavement edge dropoff within 2 ft of the traveled way
- Reduced design speed of horizontal curve
- Reduced design speed for stopping sight distance
- Traffic congestion created by a lane closure
- Unexpected conditions

The regulatory speed limit shall meet all requirements of the *MUTCD*. Where work zone geometrics with reduced design speeds cannot be avoided, the work zone speed limit should not exceed the design speed, even if this requires a work zone speed limit reduction greater than 10 mph.

Table 6. Factors to be considered for work zone condition 6.

Condition 6

Activities requiring a temporary detour to be constructed (temporary detour)**

Typical Applications

Roadway construction
Subgrade restoration
Bridge construction
Culvert repair

Reductions to Existing Regulatory Speed Limit

May be used where **Factors** exist

Suggested Maximum Amount of Speed Reduction

10 mph

Factors

- Lane width reduction of 1 ft or more with a resulting lane width less than 11 ft
- Reduced design speed for detour roadway or transitions (radius of curvature, superelevation, and sight distance)
- Unexpected conditions

The regulatory speed limit shall meet all requirements of the *MUTCD*. Where work zone geometrics with reduced design speeds cannot be avoided, the work zone speed limit should not exceed the design speed, even if this requires a work zone speed limit reduction greater than 10 mph.

**Detour and transition geometry with a design speed equal to or greater than the existing regulatory speed limit should be provided whenever possible.

Table 7. Factors to be considered for work zone condition.

Condition 7

Activities that encroach on the area on both sides of the centerline of a roadway or lane line of a multilane highway (centerline or lane line encroachment)

Typical Applications

Roadway construction	Widening
Pavement marking	Crack sealing
Pavement resurfacing	Bridge repair
Pavement repair	

Reductions to Existing Regulatory Speed Limit

May be used where **Factors** exist

Suggested Maximum Amount of Speed Reduction

10 mph

Factors

- Workers present on foot in the traveled way or in the closed lane unprotected by barrier for extended periods
- Remaining lane plus shoulder width is less than 11 ft
- Reduced design speed for taper length or speed change lane length
- Barrier or pavement edge dropoff within 2 ft of the traveled way
- Reduced design speed of horizontal curve
- Reduced design speed for stopping sight distance
- Traffic congestion created by lane closure
- Unexpected conditions

The regulatory speed limit shall meet all requirements of the *MUTCD*. Where work zone geometrics with reduced design speeds cannot be avoided, the work zone speed limit should not exceed the design speed, even if this requires a work zone speed limit reduction greater than 10 mph.