



Traffic Guidelines Manual

ORIGINATOR State Traffic Engineer		3-2-2
CHAPTER 3	Markings	
SECTION 2	Applications	
SUBJECT 2	No-Passing Zone Standards	

A. General

No-passing zones are marked and signed on state maintained highways to indicate where a driver cannot safely complete a passing maneuver under normal light and weather conditions. In addition to the zones required by inadequate sight distance, certain other conditions warrant short zones or no-passing zone extensions which are marked by no-passing barrier lines. Although sufficient sight distance *may* be present at these locations, the passing operation is not appropriate under state law or for safety reasons as documented in an engineering study.

Unmarked zones (where passing is allowed) allow the driver to make a decision based on rules of the road and circumstances, such as oncoming traffic, reduced visibility due to fog, low light, rain or smoke, turning traffic, or vehicles entering from side roads or driveways. **No-passing zones *should not* be marked to eliminate all possible conflicts.**

[Wisconsin Statute 346.10](#) allows passing another vehicle in a rural (non-business regional, non-residential regional) intersection, unless the intersection is designated by signals, stop signs, yield signs, or warning signs. Routinely marking zones through minor intersections and/or driveways would significantly reduce legal passing areas available to the driver, increasing non-compliance and unsafe passing in less favorable locations where adequate sight distance may not be available.

B. No-Passing Zone Criteria

No-passing zones **shall** be marked at all locations on the State Highway system that have insufficient sight distance for a vehicle to safely complete a passing maneuver under normal light and weather conditions. **The establishment of these zones shall be based exclusively on the sight distance required for the posted speed and the highway characteristics.**

The following criteria **shall** be used to mark no-passing zones:

SIGHT DISTANCE

Each Region has either a No-Passing Zone Sight Distance Map or spreadsheet listing the sight distance criteria on The State Trunk Highways. Either is available from your Regional Traffic Section. Typical sight distances are shown in the following table, but other criteria such as ADT or geometrics *may* change or alter those requirements.

Posted Speed Limit (MPH)	No-Passing Zone Sight Distance		Minimum Distance Between Zones	
	(mile)	(feet)	(mile)	(feet)
<30	0.10	528	0.10	528
35-40	0.13	686	0.10	528
40-50	0.16	845	0.13	686
55	0.21*	1,110*	0.15	792

* When authorized by the designated Regional Signing/Marking Engineer, the 55 MPH No-Passing Zone, sight distance **may be increased from 0.21 to 0.26 miles** on certain higher volume highway segments, due to higher frequency of crashes and/or a demonstrated history of excessive speeding above the posted limit.

* When authorized by the designated Regional Signing/Marking Engineer, the 55 MPH No-Passing Zone sight distance **may be decreased from 0.21 to 0.16 miles** on certain lower volume highway segments with poor alignment that significantly reduces safe passing opportunities. Factors to be considered include:

- Current high percent of solid yellow with concern for driver compliance
- Adequate lane and shoulder widths
- Infrequent intersections and access conflicts
- Lower ADT with minimal congestion and traffic peaks
- Lower prevailing speeds
- Greater speed differentials due to large agricultural machinery, heavy trucking, significant tourism traffic and sightseers, etc.
- Below average crash history

The specific characteristics and factors leading to the increase or decrease of the No-Passing Zone sight distance from the DOT 55 MPH standard of 0.21 mile, *should* be documented in the Region.

For 55 mph posted speed roadways, during the project design process, the designer **shall** contact the Region Signing/Marking Engineer to determine the correct No Passing Zone Sight Distance to be used. STSP 648-005 **shall** be inserted into the Special Provisions with the correct No Passing Zone Sight Distance for 55 mph posted speed roadways.

C. Required Equipment

1. Use two vehicles that provide a target on the lead vehicle 42 inches above the roadway. The observer's eye in the trailing vehicle shall be 42 inches above the roadway. Whatever type of target is used, it **shall** have a sharp cutoff when it disappears and appears.

2. A Distance Measuring Instrument (DMI) **shall** be used and **shall** have an accuracy of at least 10 feet per mile. The DMI **shall** decrease the measured distance when the vehicle backs up.
3. Two-Way communication equipment is required for the two vehicles.
4. At a minimum, a full-width flashing yellow light bar with 360 degree visibility **shall** be used. Additional signs and flashing lights on the vehicles are recommended.

D. Procedure for Locating and Marking No Passing Zones

1. LOCATING NO PASSING ZONES

- Prior to beginning work on locating no passing zones, the project engineer or Region Signing/Marking Engineer **shall** be contacted to determine if there are any special no-passing zones to mark under the contract.
- The No Passing Zone sight distance shown in the table in part B **shall** be followed.
- The termini of no-passing zones **shall** be established to an accuracy of +/- 50 feet (0.01 mile).
- When the distance between two successive no-passing zones is less than the minimum distance shown in the table in part B, the two zones **shall** be connected.
- For roadways with speed limit changes, the proper no-passing zone sight distance in the table in part B **shall** be maintained. For locations where the posted speed limit is increasing, when the lead vehicle reaches the increased speed sign, the trail vehicle would back up until the appropriate no-passing zone sight distance is achieved. For locations where the posted speed limit is decreasing, once the trail vehicle reaches the first decreased speed regulatory sign, the lead vehicle would back up until the appropriate no-passing zone sight distance is achieved.
- On horizontal curves, no part of the line of sight **shall** extend outside the shoulder of the road. No passing zones **shall** be located and marked on the inside radius of horizontal curves. If the horizontal curve requires a No Passing Zone, the starts and ends of the zones **shall** be recorded in the cardinal direction.

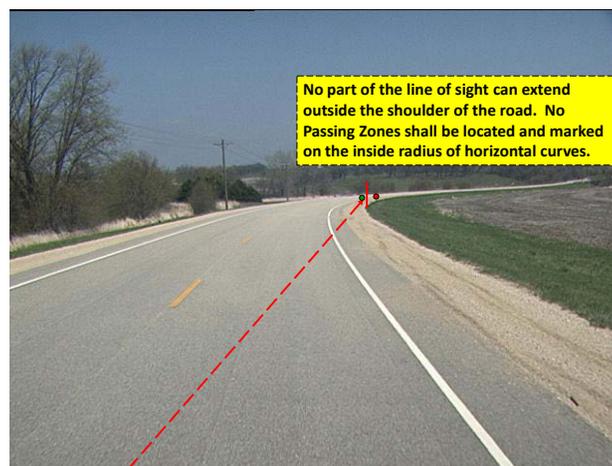


FIGURE 1 Horizontal Curve

- On vertical curves, whenever the target light disappears from sight, the crew **shall** check for blind spots. For a crest vertical curve, if the target light on the lead vehicle goes out of sight, the trail vehicle parks at the base of the hill. The lead vehicle **shall** back up to reveal a full silhouette of the rear of the car (from the bottom of the bumper up). Once the trail vehicle sees the full silhouette of the lead vehicle, the trail vehicle **shall** back up to establish the sight distance between the 2 vehicles before marking the roadway (see Figure 2).

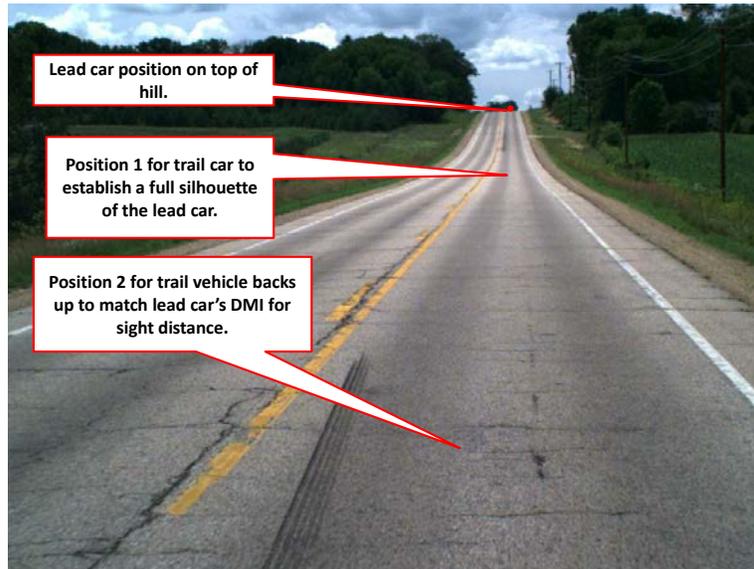


FIGURE 2 Crest Vertical Curve

- For sag vertical curves, if the target on the lead vehicle goes out, the lead vehicle **shall** stop at the base of the hill or in the sag. The trail vehicle **shall** pull forward until they see a full silhouette of the lead vehicle. Once the trail vehicle sees the full silhouette of the lead vehicle, the lead vehicle **shall** pull forward to establish the sight distance between the 2 vehicles before marking the roadway (see Figure 3).



FIGURE 3 Sag Vertical Curve

- If the no passing zone is less than 500 feet in length, the zone **shall** be extended to 500 feet by lengthening the zone at its beginning in each traffic direction.
- The correctness of no-passing zones leading into and out of the project limits **shall** be checked. Ensure that the minimum distance between zones and the sight distance are checked.

2. MARKING MATERIAL

- * The beginning and end of all no-passing zones **shall** be marked on the roadway by the marking of T's and dots with white spray paint (for asphalt) and black spray paint (for concrete).
- * T's **shall** be 12" X 12" and 2" stroke. Dots **shall** be 3" - 4" in diameter.
- * The paint material used to mark the road **shall** be durable enough to be readily visible for one year after application.

3. RECORDING OF NO PASSING ZONES

The WisDOT Standard No Passing Zone Log (form [DT2124](#)) **shall** be used to record the No Passing Zones (see Figure 4). Include the following data on the No Passing Zone Log Sheets:

- * Date of survey on each sheet.
- * County and Route on each sheet.
- * The cardinal direction of travel (for east west roads, record in the easterly direction, for north south roads, record in the northerly direction).
- * All starts and ends are logged in miles to the nearest 1/100th of a mile.
- * The beginning and ending of each no-passing zone line in both directions.
- * The sight distance and speed criteria for each zone.
- * The location of landmarks (intersecting U.S., State and County trunk highways, bypass lanes, truck climbing lanes, passing lanes, county boundary lines, railroad crossings, starts and ends of bridges and regional boundaries).

D. No-Passing Barrier Line Criteria

1. No-passing barrier lines, 500 feet in length, **shall** be marked on an undivided STH approach in the following intersection situations:
 - * The STH traffic is controlled by a stop sign.
 - * The intersection with the STH is controlled by a signal.
 - * The intersection with the STH is controlled by a roundabout.
 - * At a T-intersection with a standard bypass lane that allows vehicles proceeding straight to pass to the right of a left turning vehicle without leaving the paved portion of the highway as per [SDD 15C8-b](#), a 500-foot barrier line **shall** be installed prior to the start of the bypass taper.
2. A no-passing barrier line **shall** be marked in the following non-intersection situations:
 - * In advance of a divided highway. The marking configuration **shall** extend a barrier line 500 feet in advance of the island or median nose so passing is prohibited entering into the divided highway. This is illustrated on the Standard Detail Drawing

titled "Signing and Marking For Two Lane to Four Lane Divided Transitions", located in the Facilities Development Manual. ([SDD 15C21](#))

- * In advance of a painted median island. The marking configuration **shall** extend a barrier line 500 feet in advance of the separation of the double yellow center line. This is illustrated on the Standard Detail Drawing titled "Median Island Marking", located in the Facilities Development Manual. ([SDD 15C18](#))
- * Bridges having a width less than 24 feet. The marking **shall** include a 500 foot barrier in advance of the actual structure as shown on the Standard Detail Drawing titled "Traffic Control Devices for Two-Lane Bridges", located in the Facilities Development Manual. ([SDD 15C6](#))
- * Railroad grade crossings. The barrier line **shall** be placed 500 feet prior to each approach (unless markings are not required, as provided in the WMUTCD). The configuration of the marking is shown on the Standard Detail Drawing titled "Pavement Marking Details for Railroad-Highway Grade Crossings" and located in the Facilities Development Manual. ([SDD 15C9](#))
- * Passing Lanes. The pavement marking configuration **shall** extend a barrier line 500 feet in advance of the beginning of the taper. This is illustrated on the [SDD 15C8-c](#) and [SDD 15C8-d](#), "Pavement Marking (Climbing Lane & Passing Lane)", located in the Facilities Development Manual. A bypass lane for an intersection is **not** considered a passing lane under this guideline.
- * Truck Climbing Lanes. The pavement marking configuration **shall** extend a barrier line 500 feet in advance of the beginning of the taper. This is illustrated on the [SDD 15C8-c](#) and [SDD 15C8-d](#), "Pavement Marking (Climbing Lane & Passing Lane)", located in the Facilities Development Manual.
- * Undivided 4 lane roadways. Any stretch of roadway with this configuration **shall** have the opposing lanes designated by a barrier line for its entire length and **shall** have barrier lines of 500 feet in length on the approaches to this section.

E. Special No Passing Barrier Lines

No-passing barrier lines **shall** be marked with the approval of the designated Regional Signing/Marking Engineer in the following situations. When marked, they *should* be documented in the Region.

- * At any intersection when justified by an engineering study. Appropriate reasons include a crash history related to passing maneuvers or demonstrated operational problems. The 500-foot barrier line would end at the near edge line of intersecting road and *may* be placed in only one direction based on operational need. This is illustrated on the [SDD 15C8-13b](#), "Pavement Marking (Intersections)", located in the Facilities Development Manual.

- * In low speed urban areas, double yellow barrier lines *may* be placed when justified by an engineering study. Criteria for the engineering study include curb and gutter, reduced speed, parking allowed, poor stopping sight distance, closely spaced driveways or intersections, and high pedestrian volumes. The double yellow lines *should* be installed from the start of the curb and gutter to the end of curb and gutter through the urban area. When urban double yellow lines are used, 500-foot barrier lines **shall** be placed on the approaches to this special layout, unless a longer no-passing zone takes precedence.
- * At a T-intersection with roadway pavement that allows vehicles proceeding ahead to legally pass to the right of a left turning vehicle without leaving the paved portion of the roadway, a 500-foot barrier line prior to the start of the bypass taper will be optional based on engineering judgment.

F. Marking No-Passing Barrier Lines

Barrier lines, as designated above, **shall** have a minimum length of 500 feet.

On State Trunk Highway approaches with stop or signal control, the barrier line would end at the stop line, theoretical stopping point or marked crosswalk. Each approach on the State Trunk Highway *should* be considered separately.

Barrier lines **shall** be connected into adjacent no-passing zones when there is less than minimum distance between zones, as described in the NO-PASSING ZONE CRITERIA section of this policy.

Where allowable barrier lines are justified, the traffic engineer **shall** give the crew locating no-passing zones specific directions as to where barrier lines are to be placed.

G. Signing

A No-Passing Zone pennant sign (W14-3) **shall** be installed as required in TGM [2-3-38](#), supplementing zones established under this guideline. This sign **shall** be placed no more than 50 feet from the start of the no-passing barrier line unless it's impossible due to location on a bridge deck or other exception.

Sign quantities for moving the existing W14-3 sign **shall** be paid for separately and listed in the Permanent Signing Miscellaneous Quantities Sheet in the plan. If moved, the sign location **shall** be based on placement of the beginning of the revised no passing zone.