

# Stopping Sight Distance

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“Sight Distance” is the length of roadway that a driver can see ahead. “Stopping sight distance” (SSD) is the minimum sight distance required for a driver to stop a vehicle on wet pavement after seeing an object without hitting the object. SSD determines minimum lengths of vertical curves and minimum radii of horizontal curves.

The American Association of State Highway and Transportation Officials (AASHTO) establish the minimum SSD. The SSD in Table 1 are for passenger cars and do not consider the distance necessary for trucks to safely stop. Generally, separate stopping sight distances for passenger cars and trucks are not considered. The extra sight distance provided by the higher seat position of a truck driver compensates for the extra distance needed to safely stop.

To measure sight distance on an existing road, one person stands in the center of the travel lane sighting from the top of a sighting rod, while another holds a target rod at a length away in the direction of travel record the distance at the point in which the bottom two feet of the target rod moves out of view of the person with the sighting rod. They compare this distance with the minimum required stopping sight distance in Table 1.



The easiest way to prevent sight distance problems is to avoid them by ensuring new roads adhere to the minimum standards for stopping sight distance. Sight distance improvements may be costly but necessary in places where inadequate sight distance has resulted in crashes. Agencies should consider improvements when the recorded distance is less than the minimum requirement. It is most cost effective to combine sight distance improvements with other road improvements to make more cost effective. Traffic control devices, creating no passing zones, and establishing public awareness campaigns are techniques to improve the safety at locations where there is poor stopping sight distance.

Source:  
 Mearkle, Jim, *Nuggets & Nibbles*, Cornell Local Roads Program, Vol XXII, No. 4  
*Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials, Washington, DC 2004  
 “Stopping Sight Distance,” Bay State Roads Program, Tech Note #25, 2004

Table 1. Minimum Required Stopping Sight Distances 2004 AASHTO Green Book

Vehicle Speed (mph)	Reaction Distance (feet)	Braking Distance (feet)	Summed Distance (feet)	Stopping Sight Distance (feet)
15	55.1	21.6	76.7	80
20	73.5	38.4	111.9	115
25	91.9	60.0	151.9	155
30	110.3	86.4	196.7	200
35	128.6	117.6	246.2	250
40	147.0	153.6	300.6	305
45	165.4	194.4	359.8	360
50	183.8	240.0	423.8	425
55	202.1	290.3	492.4	495
60	220.5	345.5	566.0	570
65	238.9	405.5	644.4	645

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 11.2 ft/s<sup>2</sup> used to determine calculated sight distance.