

## Stop and Yield Signs

Sections 2B.04 through 2B.07 of the *MUTCD* describe Stop signs (R1-1), including applications and placement. Use of Stop signs is recommended for specific situations primarily involving high speeds, high traffic volumes, restricted views, and crash history.

In addition, the *MUTCD* discusses a few situations where Stop signs should not be used. The *MUTCD* also advises that less restrictive measures of traffic control be considered where a full stop is not required at all times.



**R1-1**

*MUTCD* Sections 2B.08 through 2B.10 describe Yield signs (R1-2) along with applications and placement of these signs. This description includes locations and situations where Yield signs can be effectively installed. Primary factors to be considered when judging the appropriateness of Yield sign usage include traffic volumes, volume split, speeds, visibility, and crash history.

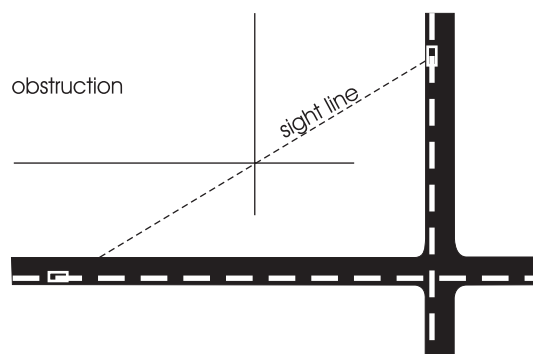


**R1-2**

Visibility and approach speed are important factors when selecting the most appropriate control for a given intersection. A sight triangle can aid in the analysis of these factors.

A minimum sight triangle will allow a sufficiently unobstructed sight distance along all

approaches to an intersection, including across the corners, to allow approaching drivers to take necessary action—stop, slow, or accelerate—to avoid collision. Any object in the sight triangle high enough to restrict visibility (3 feet) should be removed or lowered, if possible. These objects could include cut slopes, vegetation, growing crops, or parked vehicles. An in-depth discussion of sight triangles can be found in AASHTO's *A Policy of Geometric Design of Highways and Streets*, 1990.



**Sight triangle**

When an approach to an intersection is not controlled by Stop signs, motorists should be able to see a potential hazard early enough to take appropriate action. The average driver requires an estimated minimum of three seconds to perceive and react to a hazard. The following table lists the distance a vehicle will travel in three seconds at various speeds.

**Distance traveled by a vehicle in 3 seconds  
(not stopping distance)**

Speed (mph)	Distance (feet)
10	45
15	70
20	90
25	110
30	130
35	155
40	180
50	220
60	260

The *MUTCD* advocates the use of Stop signs only when warranted. In many situations with lower volume roads and streets, Yield signs or no control may be the most appropriate choice.

Overuse of Stop signs will result in additional delay for drivers, disruption in traffic flow, increased fuel consumption and consequent pollution, and possible noncompliance by motorists. Some studies have found that Stop sign installation will not effectively reduce speeds and should not be used for this purpose. Alternate methods of controlling speeds, such as traffic calming, are described elsewhere in this manual.

Many studies have been made of the effects of Stop versus Yield control at intersections. One such reference is *Guidelines for Converting Stop to Yield Control at Intersections*, National Cooperative Highway Research Program (NCHRP) Report 320, published in October 1989.

If Yield signs are to be used for intersection control, the following suggestions should be considered prior to installation. These suggestions are general guidelines only, not specific requirements. A detailed engineering study may be needed to review specific situations.

For rural roads:

1. The average daily traffic (ADT) on the through road should not exceed 400 vehicles per day.
2. The sight distance on the minor roadway

should be sufficient to permit an approaching vehicle traveling at the posted or operating speed to stop before reaching the major road intersection.

For urban streets:

1. The major street has been designated as a through street with control along a substantial length that grants or implies right-of-way by using traffic.
2. The average daily traffic should be less than 1,500 vehicles per day on the major street and less than 600 vehicles per day on the minor street.
3. The intersection should most likely be a residential street intersection with a speed limit of 25 mph or lower.
4. No more than two crashes involving vehicles on the minor street have occurred over the past three years.

Local agencies can develop criteria to best meet specific needs. Yield signs can be a logical alternative to Stop sign control, but Sections 2B.09 and 5B.02 of the *MUTCD* should be consulted for application criteria.

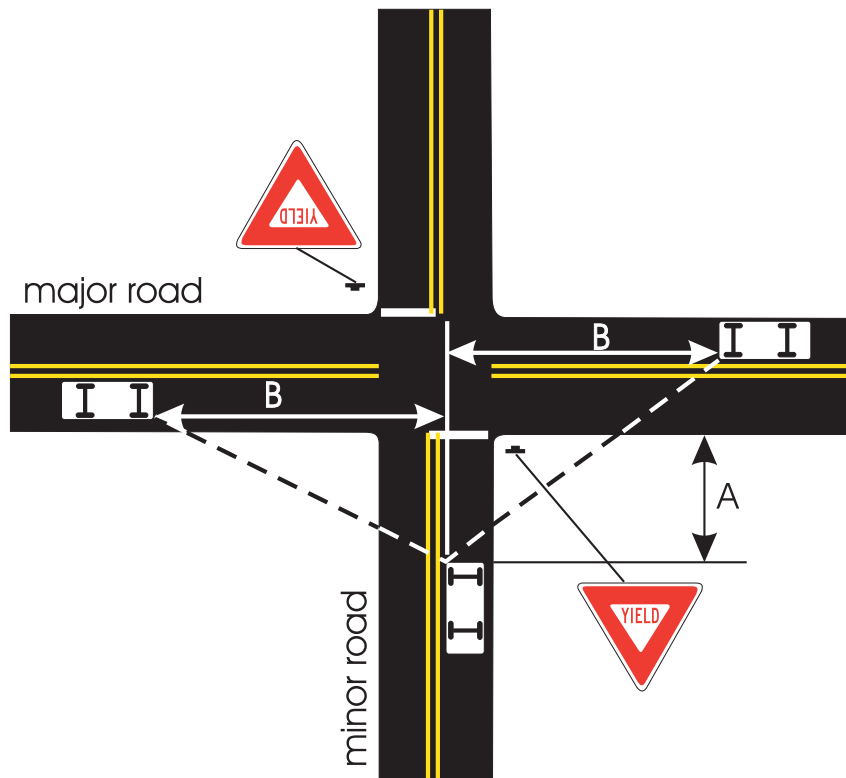
If Stop or Yield sign visibility is restricted for approaching vehicles, use of Stop Ahead or Yield Ahead signs as described in *MUTCD* Section 2C.26 should be considered.

The following illustration and table can be used to determine sight distance warrants for Yield sign installation.

**Suggested minimum corner sight triangle for Yield sign control use**

<b>Minor Road</b>		<b>Sight Distance, <i>B</i>, along Major Road for Various Speeds</b>								
<b>Speed (mph)</b>	<b>Distance <i>A</i> (ft)</b>	<b>25 mph</b>	<b>30 mph</b>	<b>35 mph</b>	<b>40 mph</b>	<b>45 mph</b>	<b>50 mph</b>	<b>55 mph</b>	<b>60 mph</b>	<b>65 mph</b>
10	45	130	155	180	205	230	255	280	305	330
15	75	145	175	200	230	260	285	315	345	375
20	110	160	195	225	255	290	320	355	385	415
25	150	180	215	250	285	320	355	390	425	460
30	200	-	235	270	310	350	390	425	465	505
35	250	-	-	295	340	380	420	465	505	550
40	315	-	-	-	365	410	455	500	545	590
45	385	-	-	-	-	440	490	540	585	635
50	465	-	-	-	-	-	525	575	630	680

Note: Refer to the illustration “Minimum corner sight triangle for Yield sign control use” below.



**Minimum corner sight triangle for Yield sign control use**