

Why Stop Signs Are NOT Traffic Calming

The effects of Stop signs have been heavily researched. W. Martin Bretheron Jr. P.E. aggregated 85 such studies and their results. The research found that, overwhelmingly, multi-way stop signs do NOT control speed except under very limited conditions. The research also shows that unwarranted stop signs are very concerning. Some of the results are summarized below:

1. Multi-way stops do not control speeds.
 - a. 22 documents supported this claim.
2. Stop compliance is poor at unwarranted stop signs. Based on drivers feeling that the signs have no traffic control purpose.
 - a. 19 documents supported this claim
3. Before and After studies show multi-way stop signs do not reduce speed on residential streets.
 - a. 19 documents supported this claim
4. Unwarranted multi-way stop signs increased speed some distance from the intersections.
 - a. 15 documents supported this claim
5. Multi-way stop signs have high operating costs including vehicular travel times, fuel consumptions and vehicle emissions
 - a. 15 documents supported this claim
6. Safety of pedestrians is decreased at unwarranted multi-way stops, especially small children, e.g. pedestrians expect vehicles to stop but vehicles have gotten in the habit of running the “unnecessary” stop sign.
 - a. 13 documents supported this claim

In summary the following are results of unwarranted stop signs:

- **Speeds are NOT Reduced**
 - **Speeds Increase**
 - **Stop Compliance is Poor**
 - **Safety is Reduced**
 - **Higher Operating Cost**
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All Way Stop Requirements



Multi-way stop control can be useful as a safety measure at intersection if certain traffic conditions exist. Safety concerns associated with multi-way stop include pedestrian, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal. The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance: The decision to install multi-way stop control should be based on an engineering study. The following criteria should be considered in the engineering study for a multi-way STOP sign installation:

- **A.** Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
- **B.** Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.

Minimum volumes:

- **C.1.** The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicle per hour for any 8 hours of an average day; and
- **C.2.** The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but
- **C.3.** If the 85th percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.
- Where no single criterion is satisfied, but where Criteria B, C.1 and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Option: Other criteria that may be considered in an engineering study include:

- The need to control left-turn conflicts;
- The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
- Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
- An intersection of two residential neighborhood collect (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

Quoted from Page 52, Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition
