

Stop Signs – When Are They Warranted?

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

When subdivisions are built in the Town of Firestone a professional engineer prepares a signing and striping plan that is submitted for approval by the Town Engineer. All traffic control devices are designed and installed to strict standards set by the Federal Highway Administration as outlined in the Manual on Uniform Traffic Control Devices. This manual provides guidance and establishes criteria for when a stop sign is or is not warranted. These guidelines are more specifically outlined below.



When stop signs are installed but are not warranted there are often unintended consequences:

- **Drivers Won't Stop** - Unneeded stop signs are frequently ignored. Drivers on the major street either roll through, or run through, the stop sign because, in their experience, there is little cross-traffic. This puts pedestrians and cross-traffic at risk. Residents frequently complain that drivers do not come to a complete stop at 4-way stop signs. If you observe motorists at many 4-way stops, you would find that nearly half of the drivers fail to make the required stop.
- **Stop Signs Don't Slow Speeds** - Numerous studies nationwide have shown that speeds within a block of the stop sign are largely unaffected by the stop. Naturally, motorists have to slow down when approaching a stop sign. But, they often speed up quickly after the stop to make up for lost time or out of frustration. Overall speeding is not reduced by the stop sign and frustrated drivers do not drive safely.
- **Stops Increase Noise and Pollution** - Stopping and starting cause increased tire and engine noise. Residents living near the stop will experience an increase in traffic noise. Stopping and idling at unwarranted stop signs also increase automobile exhaust and fuel consumption unnecessarily. Intersections where stop signs occur also tend to deteriorate faster resulting in increased road maintenance costs.

STOP SIGN INSTALLATION STANDARDS

The installation of any stop sign must meet the Manual of Uniform Traffic Control Devices standards. Below are the criteria from the MUTCD for installing stop signs.

Section 2B.07 Multiway Stop Applications

Support: Multiway stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multiway stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multiway 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.05](#) also apply to multiway stop applications.

Guidance: The decision to install multiway stop control should be based on an engineering study.

The following criteria should be considered in the engineering study for a multiway stop sign installation:

- A. Where traffic control signals are justified, the multiway 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. A crash problem, as indicated by 5 or more reported crashes in a 12-month period that are susceptible to correction by a multiway stop installation. Such crashes include right- and left-turn collisions as well as right-angle collisions.
- C. Minimum volumes:
 1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and
 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
 3. If the 85th-percentile approach speed of the major-street traffic exceeds 65 km/h or exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the above values.
- D. 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:

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

Section 2B.05 STOP Sign Applications

Guidance: Stop signs should be used if engineering judgment indicates that one or more of the following conditions exist:

- A. Intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;

- B. Street entering a through highway or street;
- C. Unsignalized intersection in a signalized area; and/or
- D. High speeds, restricted view, or crash records indicate a need for control by the stop sign.

Standard: Because the potential for conflicting commands could create driver confusion, stop signs shall not be installed at intersections where traffic control signals are installed and operating except as noted in Section 4D.01.

Portable or part-time stop signs shall not be used except for emergency and temporary traffic control zone purposes.

Guidance: Stop signs should not be used for speed control.

Stop signs should be installed in a manner that minimizes the numbers of vehicles having to stop. At intersections where a full stop is not necessary at all times, consideration should be given to using less restrictive measures such as yield signs (see Section 2B.08).

Once the decision has been made to install two-way stop control, the decision regarding the appropriate street to stop should be based on engineering judgment. In most cases, the street carrying the lowest volume of traffic should be stopped.

A stop sign should not be installed on the major street unless justified by a traffic engineering study.

Support: The following are considerations that might influence the decision regarding the appropriate street upon which to install a stop sign where two streets with relatively equal volumes and/or characteristics intersect:

- A. Stopping the direction that conflicts the most with established pedestrian crossing activity or school walking routes;
- B. Stopping the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds;
- C. Stopping the direction that has the longest distance of uninterrupted flow approaching the intersection; and
- D. Stopping the direction that has the best sight distance to conflicting traffic.