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ENGINEERING

Traffic signs installed in our roadways serve many purposes: speed limits, street names, direction of traffic, need to stop, keep us from running off the road etc. All traffic signs that are used on the roadway follow the national standard for traffic control signs, which is the Manual on Uniform Traffic Control Devices (MUTCD). Traffic signs help us to be safe whether we are a motorist, bicyclist, or pedestrian. Stop signs are used at intersections of two roads and serves an important role of assigning a right-of-way for motorists approaching an intersection. This enables the motorists to safely maneuver the intersection without having to communicate who goes first at the intersection.



Two-way stop control (source: Google Maps)



All-way stop control (source: Google Maps)

Most common types of stop control at intersections are two-way stop control or all-way stop control:

Two-way stop control is typically used at intersections where there is a significant difference in traffic volumes between the two intersecting roadways. The rationale behind this is that the volumes on minor leg of the intersection is low enough that they can find gaps in the major road traffic flow without suffering significant delays.

All-way stop control is typically used as an intersection control measure when roadways with similar traffic volumes intersect.

STOP signs are an integral part of intersection traffic control measures and should not be used as a means of speed control. In most cases, installation of unwarranted stop signs pose the risk of:

- Reduced compliance from drivers on the higher volume road for minor roads
- Reduced compliance and attention from drivers that can endanger pedestrians
- Increased air and noise pollution at the intersection due to braking of higher volumes
- Added fuel consumption and increased wear and tear on brakes on vehicles

Quantitative studies are conducted for the intersections that are subjected to any type of intersection control. Some criteria for stop signs include:

- Traffic volumes on major and minor street
- Number of crashes and crash characteristics
- Pedestrian and bicyclist volumes
- Sight distance for turning
- Approach speeds

References:

<https://mutcd.fhwa.dot.gov/htm/2009/part2/part2b.htm>