



Traffic Operations



Question/Request: WILL A TRAFFIC SIGNAL REDUCE ACCIDENTS AT OUR INTERSECTION?

Traffic signals can benefit the community and increase safety when used properly. However, traffic signals don't always prevent accidents or help control traffic. In fact, while traffic signals generally reduce the number of right angle (broadside) collisions, the numbers of rear end and pedestrian accidents may actually increase.

For example, many pedestrians feel secure with a painted crosswalk and a red light between them and an approaching vehicle. The motorist, however, may not be as quick to recognize pedestrians crossing, thereby creating a false sense of security for the pedestrian.

Traffic Signals are also expensive, generally costing \$130,000 to \$250,000 to install depending on the geometrics and type of signal design. The Traffic engineer seeks to install signal only when other less extreme measures of control have proven to be ineffective.

TRAFFIC SIGNAL WARRANTS

An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.

The investigation of the need for a traffic control signal shall include an analysis of the applicable factors contained in the following traffic signal warrants and other factors related to existing operation and safety at the study location. The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

To aid the traffic engineer, the Manual of Uniform Traffic Control Devices (MUTCD) contains warrants that determine whether the traffic situation at an intersection justifies considering a traffic signal.

Warrant 1: Eight-Hour Vehicular Volume. The Eight-Hour Vehicular Volume warrant is intended for application at locations where there is a large volume of intersecting traffic and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

Warrant 2: Four-Hour Vehicular Volume. The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

Warrant 3: Peak Hour. The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Warrant 4: Pedestrian Volume. The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

Warrant 5: School Crossing. The School Crossing signal warrant is intended for application where the fact that school children cross the major street is the principal reason to consider installing a traffic control signal.

Warrant 6: Coordinated Signal System. Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles.

Warrant 7: Crash Experience. The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

Warrant 8: Roadway Network. Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network.