

PROS & CONS OF TRAFFIC SIGNALS

What are the advantages of traffic signals?

Signals offer the maximum degree of control at intersections. They relay messages of both what to do and what not to do. The primary function of any traffic signal is to assign right of way to conflicting movements of traffic at an intersection, and it does this by permitting conflicting streams of traffic to share the same intersection by means of time separation.

By alternately assigning right of way to various traffic movements, signals provide for the orderly movement of conflicting flows. They may interrupt extremely heavy flows to permit the crossing of minor movements that could not otherwise move safely through the intersection.

When properly timed, traffic signals increase the traffic handling capacity of an intersection, and when installed under conditions that justify its use, it is a valuable device for improving the safety and efficiency of both pedestrian and vehicular traffic. In particular, signals may reduce certain types of accidents, most notably the angle (broadside) collision.

What are the disadvantages of traffic signals?

While many people realize that traffic signals can reduce the number of angle collisions at an intersection, few realize that signals can also cause an increase in other types of accidents. For example, it has been well documented that other types of accidents, notably rear-end collisions, usually increase when a signal is installed.

Normally, traffic engineers are willing to trade off an increase in rear-end collisions for a decrease in the more severe angle accidents; however, when there is no angle accident problem at an intersection, there is nothing to trade off, and the installation of traffic signals can actually cause a deterioration in the overall safety at the intersection. Traffic signals should not be considered a "cure-all" for traffic congestion, and the primary goal of all traffic engineers is to attain the safest and most efficient traffic flow feasible.

In addition to an increase in accident frequency, unjustified traffic signals can also cause excessive delays, disobedience of signals and diversion of traffic to inadequate alternate routes.

What are the effects of an unjustified traffic signal?

Because of the widespread belief that traffic signals offer the solution to all intersection traffic-control and accident problems, a number of signals have been installed nationwide where no legitimate operational warrant exists. Traffic records clearly show that the attitudes and misunderstandings that sometimes lead to unjustified installations should be resisted. It is important that the selection and use of this traffic control device be preceded by a thorough study of traffic and roadway conditions and that the determination of the type of control and method of operation be based on the study data.

Traffic signals should be used only where lesser forms of control have proven ineffective because signals almost always create more "overall intersection delay." In fact, minor movements may experience excessive delay, particularly if the signal is improperly timed. As a result, many drivers switch to less desirable alternate routes or to residential streets to avoid the added delay.