

TRAFFIC AND SAFETY INFORMATIONAL SERIES

FREQUENTLY ASKED QUESTION #11

Could Traffic Signals Be Timed So I Receive a Green Light at Every Intersection?

Because of the complexity of most transportation systems, it would be nearly impossible to orchestrate traffic patterns and traffic signal timing so that everyone could receive green lights at every intersection. The following are some of the factors that determine when traffic signals change and explain why drivers can't always get green lights.

Green times vary for minor and major streets

Because major streets carry the largest traffic volumes, traffic signals give the majority of the green time to the traffic on these streets. This usually minimizes the delay for the majority of the traffic crossing an intersection. However, the smaller volume of traffic on the minor street may sometimes experience longer delays as a result. Achieving the minimum *total* delay is the goal.

Many traffic signals are timed on an individual basis

Many traffic signals, especially those at isolated intersections, are designed on an individual basis to change at cycles that are best suited for that particular intersection. The timing for these traffic signals is controlled either by a preset schedule (pretimed signals) or current traffic conditions (actuated signals).

Pretimed signals have preset cycle lengths (that is, the length of the green light is a fixed time interval), either for specified times of the day or for the entire day. These signals do not adjust to the traffic flow. Therefore, the optimum cycle lengths for a particular flow pattern at the intersection must be determined so that the ideal signal timing can be set. One of the many factors that determine how long a green light lasts is whether there is a pedestrian crossing at the intersection.

Actuated signals, in contrast, vary their cycle lengths based on the traffic flow. When a vehicle approaches an intersection with an actuated signal, the vehicle is detected and the information is sent to a signal controller. The controller then adjusts the length of the green light so that it is optimal for the current traffic conditions.

Some traffic signals are timed as a system

Many signals, especially when closely spaced, are also timed as a coordinated system so that some vehicles can receive a green light at each intersection while traveling a segment of roadway.

The goal is to reduce total delay

In general, traffic signals are timed to reduce the delay for the most vehicles and help traffic flow more smoothly.

For more information

For more information, please contact _____.