

Road Sleuth

Myths & Facts Revealed



Photo taken by Kim Carr, WV LTAP.

Myth: Traffic signals reduce crashes.

Residents often see traffic signals, commonly referred to as stop lights, as the safest way to move traffic through an intersection — and they can be. Signals provide a sense of security to drivers and pedestrians by assigning right-of-way to particular movements. They can interrupt traffic on high volume busy streets to let motorists in and out of cross-streets and businesses, and can also allow more traffic to pass through an intersection than if the same intersection was controlled by stop-signs. However, they are not the best choice for every intersection.

First, traffic signals are expensive to install and maintain. The total cost to install a traffic signal can be upwards of \$100,000, and the annual electric bill per intersection averages \$1,500. These numbers do not include the associated maintenance such as replacing bulbs and repairing pavement sensors damaged during the winter months.

Secondly, many believe that a traffic signal is safer and will reduce or eliminate crashes as the movements are controlled. In fact, traffic signals tend to increase the number of crashes at an intersection. A signal can reduce the likelihood of angle (or “T-Bone”) crashes, but the number of rear-end crashes typically increases as drivers abruptly brake at the last minute. However, rear-end crashes are typically not as severe as angle crashes and are a reasonable safety trade-off.

Since there is a potential for intersection crashes to increase after the installation of traffic signals, it is important that the benefits outweigh the costs. The *Manual on Uniform Traffic Control Devices* (MUTCD), which presents traffic control device standards and guidelines, lists nine “warrants” that serve as the criteria for installing traffic signals. These “warrants” include the amount of traffic entering the intersection, the number of pedestrians trying to cross the road at the intersection, the presence of a nearby school with school children walking through the intersection, and trains crossing the road nearby. The MUTCD states that at least one of the nine warrants must be met before a traffic signal should be considered, but not that one must be installed if the criteria are met. The MUTCD has been adopted as state law, thus if a signal is installed without meeting the criteria, the road agency’s liability risk can increase.

Similarly, just because a traffic signal is currently installed at an intersection, doesn't mean it needs to be there forever. Traffic patterns change, and businesses come and go. Traffic signals should be evaluated periodically to see if they are still needed. In some cases, removing an existing traffic signal can improve safety and traffic operations.