Traffic signals Facts

They're red, yellow and green, and they're vital to controlling traffic in a safe, orderly manner.

We're talking about traffic signals. They let motorists take turns in moving through busy intersections and they can enhance safety.

But in the wrong location, a traffic signal actually can contribute to crashes and congestion.

A potential crash exists every time a vehicle is stopped on a traveled portion of a roadway.

Nearly every driver has experienced the anxiety of having a light suddenly turn yellow while rapidly approaching an intersection, or getting caught behind one red light after another on a busy thoroughfare.

The Virginia Department of Transportation's job is to find a point where a signal will help more than it will hinder and where it will relieve more congestion than it will cause.

In every case, VDOT's primary consideration is the safety of the public using the intersection.

Here are some frequently asked questions about traffic signals in Virginia.

What is the purpose of a traffic signal? Traffic signals are designed to ensure a safe and orderly flow of traffic, provide safety for pedestrians or vehicles while crossing a busy intersection, and help lessen the severity and frequency of crashes between vehicles entering intersections from different directions.

How do traffic signals work? Traffic signals in Virginia work two ways: fixed time and traffic responsive.

A fixed-time traffic signal assigns a green light to different approaches of an intersection for a predetermined amount of time. Some of them can also be set to change to different green times during peak traffic hours.

These signals are usually found in urban areas where traffic movements are pretty predictable.

Traffic-responsive signals change the lights according to the amount of traffic in each direction. These signals use sensors, like cameras or pavement loops, to detect the number of vehicles and automatically adjust the length of the green time to allow as many vehicles as possible through the intersection before responding to the presence of vehicles on another approach.

How does VDOT decide whether a traffic signal should be installed? The department follows federal guidelines that establish minimum conditions under which a signal installation should be considered. These guidelines help identify potential locations for signals, but each location is reviewed individually before a signal is installed.

Traffic engineers assess whether or not a signal is a proper means of traffic control by carefully evaluating the number of vehicles and pedestrians that use the intersection, physical makeup of the intersection, roadside development, delays experienced by motorists during peak hours, average vehicle speed, and future road construction plans and the number and types of crashes that have occurred.

Are traffic signals a cure for crashes? Not in all crashes. Certain types of crashes can be reduced in number or severity by the installation of a signal, while other types might not be affected.

VDOT engineers generally will recommend a traffic signal when crashes involving vehicles approaching from a different direction occur at an abnormally high frequency, but only if a signal will have a positive effect on safety, and other remedies to prevent these crashes prove unsatisfactory.

Traffic signals do not eliminate rear-end crashes.

Can traffic signals actually contribute to crashes and congestion? Definitely. Even though they are valuable tools, traffic signals are not a cure all for every problem intersection. A signal in the wrong location can actually cause rear-end collisions, excessive delays, unnecessary travel on alternate routes and can cause more congestion.

It’s possible VDOT might consider another type of intersection. That’s a roundabout. That’s discussed in a different Podcast you can find online at www.virginiadot.org.