Traffic Signals

What's required to get a traffic signal installed?

Are there any disadvantages to traffic signals? And do a certain number crashes need to happen before a traffic signal is installed?

If an intersection has signal poles installed why can't arms and displays be added to make it operational?

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What's required to get a traffic signal installed?

In accordance with state law, the city is required to follow the Federal Manual on Uniform Traffic Control Devices (MUTCD) for the installation and application of all traffic control devices including traffic signals. The MUTCD states that: *"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 that location."*

The MUTCD further notes that: *"The safe and efficient movement of all road users is the primary consideration in the engineering study to determine whether to install a traffic control signal or to install some other type of control or roadway configuration."* If installed at an inappropriate location, a traffic signal can adversely impact both safety and operational efficiencies. An engineering study determining the appropriateness of a traffic signal needs to include an analysis of applicable factors contained in nine traffic signal warrants of the MUTCD. The nine warrants consider vehicular and pedestrian volumes, traffic delays, the intersection's physical configuration (i.e., number of lanes), vehicular speeds, crash history, school crossings, signal coordination, and street network considerations.

The satisfaction of one or more signal warrants does not in itself require the installation of a traffic signal. The engineering study also needs to consider alternatives to signal control that are outlined in the MUTCD (including roundabout control) and determine that a traffic signal will improve the overall safety and/or operation of the intersection.

Upon request and in the course of routine street monitoring and maintenance, the City staff will review the appropriateness of signal control for a given intersection. A preliminary review will first be performed, followed by a more detailed engineering study where appropriate.

Are there any disadvantages to traffic signals? And do a certain number of crashes need to happen before a traffic signal is installed?

As noted in the MUTCD, improper and unjustified traffic signal control can result in increased crash frequencies, increased delay, excessive disobedience of signal indications, and problematic traffic diversions as motorists try to avoid the signal.

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Crash history is considered when evaluating the appropriateness of a traffic signal. However, crash frequencies, particularly some types, will sometimes increase where stop sign control is replaced with traffic signal control, even where one or more signal warrants are met. This is particularly true where major street traffic flows are significantly higher than minor street traffic demands, and the signal installation needs to interrupt those heavy flows to serve the minor street.

If an intersection has signal poles installed, why can't arms and displays be added to make it operational?

As a condition of development, the city requires that developers install traffic signal pole shafts and underground improvements (i.e., conduits and pull boxes) at major intersections where a traffic signal may be warranted and justified in the future. This is done to limit how much of the intersection must be torn up and reconstructed if a future traffic signal needs to be installed. This greatly reduces construction delays for the traveling public and reduces future traffic signal installation costs. However, a proposed traffic signal still needs to be justified based on an engineering study before it is installed.

How much does a traffic signal cost and how long does it take to get one installed?

A typical traffic signal can cost $400,000 to more than $1 million to construct depending on the size and complexity of the intersection, the degree of existing signal infrastructure in place (i.e., developer installed poles and undergrounds) and difficulties of construction at the intersection in question.

Once an intersection is approved for a traffic signal, it typically takes 12 to 18 months for it to be designed and constructed. First, funding for the signal must be identified and secured, which is highly variable depending on the degree of need and priorities, the availability of funding, and opportunities for including the signal as part of another project.

The actual design of a signal typically takes two to six months depending on whether it is designed in-house by city staff or contracted out to a consulting engineering firm. This includes establishment of proper survey control for the improvements and mapping research and documentation to ensure that improvements are within public rights-of-way and easements.

In some cases, the signal installation may become part of a planned arterial project that encompasses the intersection, or part of a project that includes improvements at multiple intersections for economies of scale. In that event, the installation schedule is subject to the design and construction schedule of the larger project.

The bidding process and construction of a traffic signal typically takes six months to a year. Much of this time is for the ordering of materials, which can take two to four months. Field construction activities can often be limited to 60 calendar days or less. However, if the traffic signal is part of a larger project with other improvements at the intersection (e.g., underground storm drain structures), the duration of construction can be significantly longer.

Want More Information?

This flyer is for general purposes only. For more information, please contact the city of Las Vegas Department of Public Works, Transportation Engineering Division at (702) 229-6331 or https://seeclickfix.com/las-vegas

NOTE: The **Manual on Uniform Traffic Control Devices (MUTCD)** is used throughout the country as the standard by which traffic control decisions are made. Nevada Revised Statute 484A.430 requires its use for placement of all traffic control devices. Find the ***complete*** **MUTCD** at https://mutcd.fhwa.dot.gov/ or scan the QR code.

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