How to determine if an intersection is right for a traffic signal...

A careful analysis of traffic operations is necessary to determine the need for a traffic signal. Roadway authorities take this information into consideration:

- Does the number of vehicles on intersection streets cause congestion?
- Is traffic on the main street so heavy that drivers on the side streets will try to cross when there are few gaps? Have crashes resulted from this condition?
- Have less restrictive traffic controls been tried and found inadequate to address the problem (such as warning signs, stop signs, flashers, etc.)?
- Is pedestrian traffic heavy? If so, is the street they are trying to cross a wide, high speed and busy street?
- Does the number of schoolchildren crossing the street require special controls? If so, is a traffic signal the best solution?
- Will the installation of a signal allow for a smooth flow of traffic with a minimum number of stops, thereby reducing overall congestion?
- Does the crash history indicate that a signal will reduce the number of crashes?

The nationally accepted standards for traffic signals, stop signs and other traffic control devices are contained in a publication called "The Manual on Uniform Traffic Control Devices." It is used by transportation officials around the country, including ODOT, to evaluate whether or not a traffic signal or other measure is needed in a specific location.

A properly placed traffic signal can improve the flow of traffic and decrease crashes. An unnecessary one can be an annoyance to all who use the intersection, including pedestrians, bicyclists and motorists.

For more information about traffic signals in your area, contact your ODOT Regional office, or ODOT's Traffic Engineering and Operations Section.

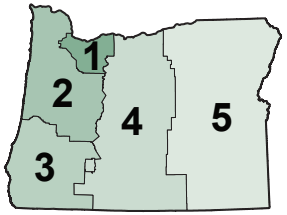
Region 1 - (503) 731-8200
(Portland metro and surrounding area)

Region 2 - (503) 986-2600
(Salem, Mid and Lower Willamette Valley and NW Oregon)

Region 3 - (541) 957-3500
(Roseburg, White City and SW Oregon)

Region 4 - (541) 388-6180
(Bend and Central Oregon)

Region 5 - (541) 963-3177
(Pendleton and Eastern Oregon)



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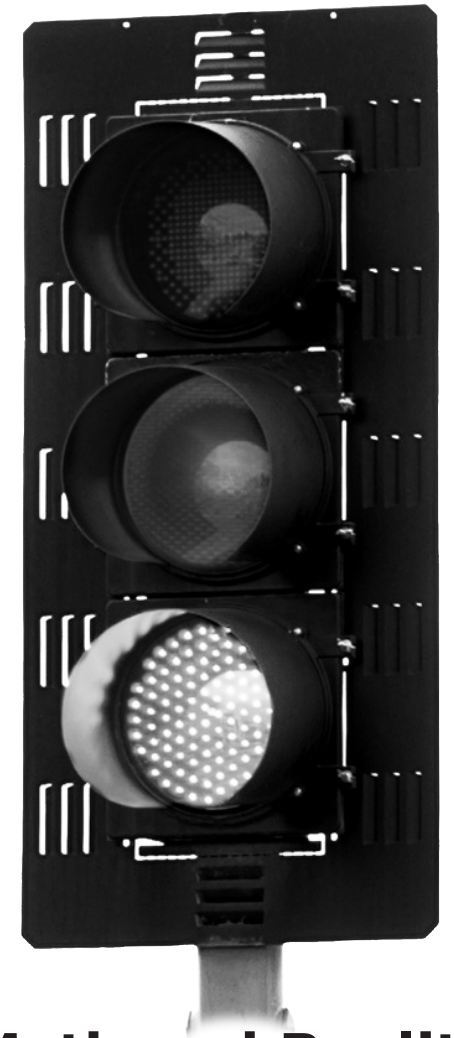
Traffic Signals



Myth and Reality

A tool to help motorists, bicyclists and pedestrians

Oregon Department of Transportation

Learning About Traffic Signals

Traffic signals are such a common part of everyone's day, we often forget just how important they are. The Oregon Department of Transportation encourages you to learn more about the advantages and disadvantages of traffic signals and how transportation experts determine where — and where *not* — to place signals.

Advantages of Traffic Signals

Traffic signals help control the flow of vehicles, pedestrians and bicycles by giving "right-of-way" to the various movements in an orderly manner. Signals that are properly located, designed and maintained can:

- Provide for orderly movement of traffic;
- Increase capacity of the intersection;
- Reduce frequency and severity of certain types of crashes, especially right-angle collisions;
- Provide for continuous movement of traffic at a definite speed along a given route; and
- Interrupt heavy traffic at intervals to permit other vehicles or pedestrians to cross.

Overall, traffic signals help us get where we're going safely and in a timely manner.

Disadvantages of Traffic Signals

Traffic signals are sometimes considered a "cure-all" for problems at intersections. In fact, traffic signals that are poorly located can adversely affect the safety and efficiency of vehicle, bicycle and pedestrian traffic.

Improper or unjustified signals can result in one or more of the following:

- Significant increases in the frequency of some types of collisions (especially rear-end collisions);

- Increased congestion, air pollution, and fuel consumption;
- Excessive delay;
- Excessive disobedience of the signal indications; and
- Increased use of less adequate streets as motorists attempt to avoid the traffic signals.

Frequently Asked Questions … and Answers!

How does ODOT determine where traffic signals are installed?

ODOT installs and operates traffic signals in accordance with the *Manual on Uniform Traffic Control Devices*, a national standard developed to ensure uniformity in the application and design of traffic signals, signs and pavement markings throughout the country.

Following the guidance of the *MUTCD*, a study is performed on the potential placement of a traffic signal by looking at traffic volumes, pedestrian characteristics, crash history, and physical characteristics of the location.

The study may investigate a range of alternatives to a traffic signal including:

- revising warning signs;
- improving sight distance;
- reducing speed on approaches;
- revising intersection geometry;
- restricting turning movement;
- installing all-way stop control; and
- installing a roundabout.

The intent of the engineering study is to identify the safest and most efficient form of traffic control to use for that particular location.

What happens once the traffic signal is justified?

If a signal is approved for a state highway, then it may be scheduled for construction as funds become available. The design plans are developed and reviewed, and public meetings may be held. Once the plans are completed, the signal project is put out for bid and awarded to an electrical construction contractor.

How much does a signal cost?

Typical construction costs can be from $300 to 500 thousand. This does not include the upfront study work, any right of way costs or environmental remedies which are often required. The typical average total cost of a signal is about $1 million depending on the site. Annual maintenance and power costs are typically about $4,000 per year.

How is a study for a new signal on a state highway requested?

A written request must be made to the ODOT Region Traffic Manager. See contact information on the back of this brochure.