cause frustration in drivers, who then seek alternate routes. These routes usually are not built to handle increased traffic flow. In addition, drivers frustrated by unnecessarily long waits at signals may begin to disobey the law. Traffic control devices are most effective when perceived as reasonable by the motorists, bicyclists, and pedestrians that use them.

When do traffic engineers decide signals are justified?
Usually after lesser forms of control, such as stop signs or yield signs, have proven to be ineffective. Then, traffic engineers follow specific, uniform guidelines to determine whether a traffic signal is necessary.

What about intersections that don't meet this engineering criteria?
Problems can occur. Signals almost always create an overall delay to drivers. In fact, minor side street traffic may experience excessive delay, particularly during off-peak hours. Because of this, drivers may actually avoid the signalized intersection and switch to alternate routes not designed to handle through traffic. People also seldom consider the cost of signals, both in public funds and out of their own pockets.

Out of pocket costs to me?
It costs the taxpayers $300,000 to $500,000 to purchase and install a traffic signal. Electric bills and routine maintenance amount to approximately $8,000 a year. Drivers also have increased costs for fuel, time delay, and accidents. This adds to the reasons for installing signals only where clearly justified.

If I think a signal may be needed at an intersection, what should I do? -
Contact the appropriate public agency: The Arizona Department of Transportation for state highways or your city or county public works department for local roadways. Ask the traffic engineers to review available data on the intersection and to consider initiating a more detailed study to see if a serious problem indeed exists. Talk to them about the possibility of trying lesser forms of traffic control, such as improved signing and pavement markings or minor intersection improvements to see if that alleviates the problem. Working together on the safest, most appropriate solutions is the best approach to keeping traffic flowing safely and smoothly in our communities.

REMEMBER, TRAFFIC SIGNALS

CAN INCREASE COLLISIONS

CAN INCREASE NEIGHBORHOOD CUT-THROUGH TRAFFIC

A traffic safety message from the Peoria Traffic Engineering Department.

For more information, call: (623) 773-7394.

Traffic Signals

Traffic Engineering Department
2008

Are Traffic Signals Really A Cure-All?

Traffic signals are electronically operated traffic control devices which alternately directs traffic to stop and to proceed. Because there is a common belief that signals are the answer to all traffic problems at intersections, this information is offered in the interest of developing broader public understanding about what signals will and will not do.

The primary function of any traffic signal is to assign right-of-way to conflicting traffic movements at an intersection, and it does this by permitting conflicting streams of traffic to share the same intersection by means of time separation. By alternately assigning right-of-way to various traffic movements, signals provide for the orderly movement of conflicting flows. They may interrupt extremely heavy flows to permit the crossing of minor movements which could not otherwise move safely through the intersection.

The purpose of signals is to improve the overall flow of traffic. Signals can be helpful in reducing right-angle collisions under certain circumstances, but almost always increase other type of collisions such as rear-end collisions. Unfortunately, signals can also lull pedestrians into a false sense of security.

In addition to an increase in accident frequency, unjustified traffic signals can also cause excessive delay, disobedience of signals, and diversion of traffic to inadequate alternate routes.

To maximize traffic flow on arterials and along corridors, closely spaced signals are inter-connected, creating coordinated signal systems that must be monitored and adjusted to serve changing traffic patterns.

Using traffic signals in coordinated systems may benefit drivers by reducing time delay, providing improved safety, efficient use of fossil fuels, and reduced air pollution.

Traffic engineers consider these points when deciding if a traffic signal will help more than it will hurt:

- Is congestion severe enough to create extraordinary frustration?
- Is traffic so heavy that drivers on the side street try to cross when it is unsafe?
- Is there a large number of pedestrians waiting to cross a wide, high speed and busy street?
- Does the age and number of school children crossing the street require special controls? If so, is a traffic signal the best solution?
- Would a signal allow for a smooth flow of traffic and not adversely affect safety by causing gridlock with a nearby signal?

Frequently Asked Questions:

What does it take to get a new traffic signal installed?
Traffic counts and accident statistics are the primary considerations for installing traffic signals. When they are installed, traffic signals provide a solution to specific operational challenges, such as stopping heavy flow of traffic on a major roadway to permit crossing movements from intersecting minor streets. When programmed for optimum timing efficiency, signals can increase the traffic handling capacity of an intersection and can reduce the occurrence of angle, or 'broadside' collisions. However, they are not the solution to all traffic woes. Most people don't realize that rear-end accidents can increase when a traffic signal is installed.

Traffic signals cause accidents?
Rear-end collisions usually increase when a signal is installed. Normally, traffic engineers are willing to trade off an increase in rear-end collisions for a decrease in the more severe angle-type accidents. However, when there is no angle-type accident problem at an intersection, a traffic signal may actually raise the number of accidents in a given area.

Is it true that traffic signals always make traffic flow smoother and safer?
No. They only make traffic flow smoother and safer when used in proper situations. Traffic signals cause traffic to stop where it may not have had to stop before. When used at an intersection where not justified, signals can