



Street Department

901 N. Nelson
Spokane, WA 99202

Informational Handouts

Signal Synchronization

Why can't the signals in Spokane be synchronized so I can drive down an arterial without stopping? Doesn't this waste gas and pollute the air?

The traffic signals in Spokane are managed by an advanced central computer system that communicates with almost all signals in real time. The purpose of the system is twofold; one is for maintenance and monitoring, and the other is to implement and control synchronizing traffic patterns.

The City operates 251 signals, of which 180 will be in a synchronization plan during some part of the day. So, there are 71 intersections that are not ever timed with respect to adjacent intersections. As might be expected, the tightly spaced intersections in the downtown are synchronized 24 hours per day, while the more far spread intersections will not be synchronized at all. Some groups of intersections may be operated in a plan during the heaviest, or most directional traffic volumes. For example, some intersections on Nevada Street are only synchronized during the morning or afternoon peak traffic flows. During the non-synchronization times, the theory is that cross street traffic would be un-duly held up while the signal provided time (now unused) for the now non-existent traffic on the primary corridor.

The primary traffic flows in Spokane have historically proven to be heavy inbound (towards the downtown or freeway) in the morning, and heavy outbound (away from the downtown or freeway) in the evening. Naturally, signal timing is set to reflect those conditions. If you are driving in directions different than the primary flow, you will probably see poorer system performance.

During the non-peak hours, the system tries to optimize to favor more localized demands. These patterns, for example, may favor shorter travel links within larger corridors, or heavier left turning and crossing traffic that may be shopping.

The City regularly responds to service calls that may reveal problems with traffic flow. In some cases, problems can be resolved by dispatching crews that may find and repair some failed local component. In other cases, extensive analysis of local conditions may dictate changes in actual timing values or even signal design. Such changes occur on a consistent basis as conditions change or simple errors are revealed.

Federal and traffic industry (Institute of Traffic Engineers) guidelines and complex software programs are used to determine the best pattern of operation for any given traffic flow. Some software tools measure the effectiveness in terms of gallons of gas consumed and in pounds of



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pollution produced. The Environmental Protection Agency monitors Spokane air quality, and participates in system implementation and design.

The single greatest element of smooth, uninhibited traffic flow is grid geometry. In a perfectly spaced street grid with equal distances between intersections, flow management is fairly straightforward for traffic in all directions. As the street system departs from perfection, flow performance quickly deteriorates, as compromises have to be made to favor the heavier volumes.

If you have any questions about Traffic Signals, please contact the City of Spokane, Traffic Operations Division at (509) 232-8800.