



TRAFFIC TIPS

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Traffic Signal Timing and Coordination

Traffic signals assign the right of way to various traffic movements for different time intervals depending on traffic flow levels. Pre-timed signals have preset time intervals for different times of the day including the morning, noon, and evening peak travel periods.

Traffic actuated signals use detectors located in or above the pavement on the approaches to traffic signals to monitor and assign the right of way on the basis of changing traffic demand. These signals attempt to assign most of the available green time to the heaviest traffic movements.

The greatest benefits to the public for each dollar spent on traffic operations improvements come from the coordination of adjacent traffic signals to provide smooth movement of the traffic through groups of signals on an arterial street. The coordination of traffic signals to facilitate smooth traffic flow (progressed movement) along a street is a proven technique. The quality of flow along a street is basically a function of the spacing of the signals along the street, the prevailing speed of traffic on the street, and the traffic signal cycle length. The amount of traffic and the proportion of the green time given to the progressed movements are also important.

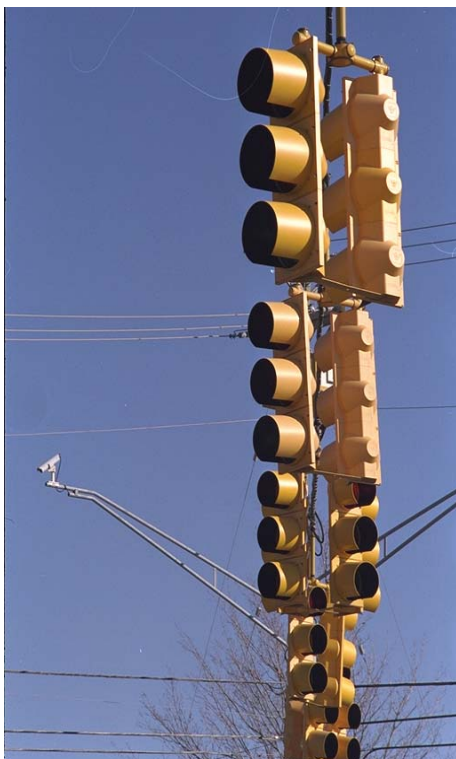
Many drivers ask why they have to wait so long for a signal to change. Many of these drivers are waiting to enter a major arterial street from a side street. This is even more frustrating when no traffic can be seen on the arterial. To allow the coordination of the arterial, the side street must wait until the main traffic movement

on the arterial has gone through the intersection. It is possible that the arterial traffic can't be seen immediately, but will soon be passing through the intersection. The goal of coordination is to get the greatest number of vehicles through the system with the fewest stops in a comfortable manner. It would be ideal if every vehicle entering the system could proceed through the system without stopping. This is not possible, even in well-spaced, well-designed systems. Therefore in traffic coordination the majority rules and the busiest traffic movements are given precedence over the smaller traffic movements. The master cycle length in many areas for signal coordination is 120 seconds. Therefore if you missed the green light on the side street approach to a major street intersection, it is possible you may have to wait up to 120 seconds to receive another green light.

Traffic engineers and technicians are constantly upgrading the signal system by monitoring traffic volumes on streets and turning movements at busy intersections. This information is then used to help traffic flow easier with less delay. Some areas are planning to implement traffic responsive signal timing where a computer will sense traffic levels and adjust signal timing to best suit traffic demand. Once this system is in place, it is anticipated that delays to side street traffic will also be minimized during times when arterial street traffic is given priority in order to coordinate the signals.

Adapted from: Traffic Signal Systems; City of San Buenaventura

Accessible Pedestrian Signals



Traffic engineers face increased pressure to install pedestrian signals that are fully usable by people with disabilities. The U.S. Access Board has proposed new standards for public rights-of-way (June 2002, www.access-board.gov) that would include requirements that new or significantly modified pedestrian signals include audible and vibrotactile features. The Access

Board's final decisions may be reflected eventually in changes in the *Manual of Uniform Traffic Control Devices*. Even if not fully approved as a new standard, the proposal will likely contribute to increased advocacy for such devices.

The major innovation in this area in the last several years is the audible pedestrian signal with taped messages. Typically, when triggered by the pedestrian push button, the taped message repeatedly calls out "WALK sign is on crossing A Street" during the WALK phase. Standard or optional features of such devices generally include:

- > Volume levels that adjust to ambient noise levels;
- > "Beaconing" to provide an audible target or destination corner;
- > Vibrotactile pedestrian push button arrows that acknowledge the call and vibrate during the WALK phase (to provide further guidance on the crosswalk direction and to serve those with both visual and hearing impairments);
- > Larger, more visible, low-resistance, pedestrian push buttons;
- > Finder tone for pedestrian push button; and
- > Braille street name message on push button face plate.

One advantage of such devices over the older cuckoo/chirp (birdcall) devices is the ability to give more specific, customizable information. The cuckoo and chirp are intended to provide different sounds for north-south and east-west crosswalks. But in cities with large numbers of five- and six-legged intersections, such symbolic sounds are potentially confusing (there have even been complaints that the "birdcalls" can literally be confused with birdcalls!).

Another option, the experimental "Talking Signs" device, is not commercially available for pedestrian signal applications. This technology uses taped messages transmitted by infrared to special receivers carried by the visually impaired.

General information about accessible pedestrian signals and proposed installation standards is provided by the Access Board (www.access-board.gov), and at www.walkinginfo.org/pedsmart/access.htm.

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