

# GO MORE STOP LESS

## YOUR GUIDE TO USING BOULDER'S TRAFFIC SIGNALS



City of Boulder  
Department of Public Works  
Transportation Division



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### It's a Matter of Timing and Speed.



You may not realize that Boulder's traffic signal system is designed to keep you moving as safely and efficiently as possible. In fact, used appropriately, traffic signals actually reduce delays and accidents. It's simply a matter of timing and speed. This system is programmed to work best when traffic is moving at or near the speed limit.

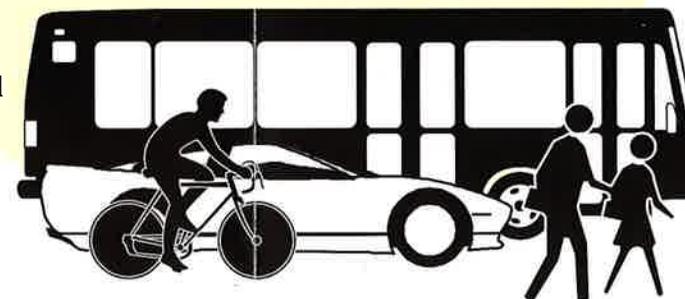
That's why we created this guide to understanding and using your traffic signal system. The next time you're waiting at a red light, keep this information in mind and use it to "go more and stop less."

#### Balancing your needs

Managing your signal system takes more than simply switching lights from green to yellow to red. The system must balance the needs of all who use and depend on traffic signals—pedestrians, bicyclists, drivers and transit riders. This means you must stop for others to go.

#### Why traffic signals?

On a nuts and bolts level, signals make sure intersecting traffic moves in an orderly fashion and assign the right-of-way in situations that cannot be effectively controlled by stop signs or other devices. On a higher level, signals make travel safer and quicker for all who use them.



### How Boulder's Traffic Signals Work

Boulder has a modern traffic system that is designed to be as efficient as possible while providing for safe travel for all types of transportation. It is comprised of over 120 traffic signals, including midblock pedestrian signals. The system is operated by the City of Boulder's Department of Public Works, Transportation Division.

#### Controllers - the "brain" inside each signal

- Each signal is operated by a computerized controller located at the signal itself. Over 100 of the controllers are linked by phone to Boulder's central traffic computer which monitors signal operations, identifies problems that need correcting and allows programming changes to be made remotely.
- Each controller is programmed with different timing settings. Some have one timing plan, while others have multiple plans to change the operation by time of day as traffic volumes and patterns vary.
- Some controllers operate with fixed timing settings. Most controllers, however, use detection devices to vary the timing based on actual traffic.

#### Programmed for safety and convenience

The signal controllers and central computer are programmed, or timed, with two goals in mind: 1) to make sure your traffic system is safe for all users; and 2) to minimize delays. Sometimes these goals conflict, making the signal timing—and the system—less efficient in the interest of safety.

## Common Questions about Traffic Signals



### Are the signals really timed to work together?

Yes! The majority of Boulder's traffic signals are coordinated to help traffic flow through a series of signals and avoid stops. This is called signal progression. Signal progression can work very well on one-way streets.

### Why doesn't signal progression work perfectly on two-way streets?

On two-way streets, it's much more complex.

Three variables must be taken into account: the distance between traffic signals, the cycle length, and the speed of travel. Nonstop traffic flow can

only be provided where exact relationships exist between these three variables.

### Why can't all signals be timed to avoid any stops?

Some stops are simply unavoidable with Boulder's street system. For example, not all signals are uniformly spaced.

Different intersections have different traffic demands, so cycle lengths must vary. And we must keep traffic at or near the speed limit. To create a nonstop signal system, Boulder's street system would have to be completely redesigned.

## Be Signal Smart

Understanding the signal system will help you "go more and stop less" as you travel around Boulder. Here are some key tips.

### Tips for motorists

- **Drive the speed limit.** Signals are timed to work best when traffic goes the speed limit. Driving faster will simply get you to the next signal too early, causing you to stop more often. The best way to avoid stopping is to slow down when you see a red light ahead and give it time to change to green.



- **Stop behind stop bars at red lights.** Many intersections have vehicle detectors (wire loops) embedded in the pavement. These signals can detect the presence of vehicles and let the controller know that vehicles are waiting. Stopping behind the bar ensures that the controller "senses" your car, and keeps the crosswalk clear for pedestrians.



## Tips for bicyclists

- **Stop on the bike symbol for a green light.** Bikes can activate traffic signals just as cars do. Stop your bike directly over the bike symbol on the pavement, lining your wheels up with the two narrow stripes on either side of the symbol. This will position you directly over the vehicle detector. Then, wait for the signal to change.



- **Use pedestrian signals on paths.** When you're riding your bike on a path and come to a traffic signal, use the pedestrian push button and follow the pedestrian signals. (See illustration under "Tips for pedestrians.")

## Tips for pedestrians

- **Use pedestrian push buttons when you want to cross the street.** Pushing the buttons on the signal poles will cause the "start crossing" signal (a person walking) to be displayed. The signal will not appear more quickly if you push the button more than once or hold it down. Your wait depends on when in the signal cycle you pushed the button.

*What do the signals mean? The "start crossing" signal means that it is now legal for you to enter the crosswalk and start crossing the street. The flashing red hand means "don't start," and comes on when there is no longer time for you to enter the street and get all the way across before the light turns. If you're already in the crosswalk when the hand starts flashing, continue to cross.*

## Making Your Traffic Signal System Better

The Transportation Division is continually working to make your existing signal system better. This includes:

- **Updating signal timing as traffic volumes and patterns change**
- **Changing the signal operation by time of day as traffic conditions vary**
- **Installing automated system monitoring so problems can be identified and corrected more quickly**
- **Automating traffic data collection so better information is available for timing plan design**
- **Selecting new signal locations carefully.**

## For More Information

We'd like to hear your questions, comments or concerns about Boulder's traffic signal system. Please feel free to contact the Boulder Public Works Department at:

**Signals Information Line - 441-4056.** For general questions and comments.

**The Signal Shop - 413-7103.** To report signal malfunctions during work hours.

**Dispatch - 441-4444.** To report signal malfunctions on evenings and weekends.