



**CITY OF CAMBRIDGE**  
**Traffic, Parking and Transportation Department**  
Traffic Control Signal Policy



Our primary goal is to increase the public safety of our transportation facilities. The city's transportation infrastructure is a scarce resource that we must allocate among a variety of needs and demands. It is our responsibility to make those allocations in a fair and equitable manner. We must balance the needs of all modes of transportation: vehicles, pedestrians, bicycles and transit.

In managing our traffic peaks, we are seeking to efficiently use the city's arterial streets in order to protect residential neighborhoods from cut-through traffic.

We use traffic signals when warranted by the Manual on Uniform Traffic Control Devices (MUTCD), to improve safety at busy intersections for vehicles, pedestrians, bicycles and transit. Even when warranted, traffic signals can cause more problems they solve. Accordingly, the Department will explore other devices before installing a new signal, including, but are not limited to, traffic calming devices, pavement markings, one-way streets, stop signs, sight line improvements, signage, and changes to adjacent intersections.

It is this policy's goal that the signal operation will encourage maximum compliance with the intersection operation by all users.

All traffic control signals owned by the City will be operated under the following guidelines:

**SIGNAL OPERATIONS:**

1. Whenever possible, total cycle lengths will be a maximum of 90 seconds at peak times. When possible the off-peak cycle length will be shorter to reduce waits for vehicles, pedestrians, and bicycles. When cycle lengths greater than 90 seconds are necessary, special consideration will be given to pedestrian and bicycle delay.
2. The average delay experienced by pedestrians waiting for any WALK indication shall be no more than 40 seconds. The delay shall be calculated using the Highway Capacity Manual Pedestrian Level of Service model. We will continue to try to reduce pedestrian delay below this average where feasible.



3. Concurrent walk phases shall be used where turning volumes are manageable in order to reduce pedestrian wait times. Analysis has shown that pedestrians are unwilling to wait for the short exclusive pedestrian phase, so it is safer to accommodate them, with a leading pedestrian interval, in a concurrent manner. However, there are some locations that will require exclusive walk phases due to high vehicular turning volumes, particularly T intersections.

4. Pedestrian buttons will be phased out wherever possible. A decision to use a button will be made when an engineering review of an intersection determines that the low pedestrian volumes and/or the high vehicle volumes preclude operating the intersection effectively for all modes without a pedestrian pushbutton.

5. Crosswalks will show a WALK indication on all phases where no vehicle conflicts exist.

6. Intersections along an arterial corridor will be coordinated to reduce delays and manage traffic volumes effectively. This will encourage use of arterial streets and discourage cutting through residential neighborhoods.

7. Where equipment allows, each crosswalk at all intersections with concurrent pedestrian operations shall have a Leading Pedestrian Interval (LPI) of 3 seconds. In some cases the LPI interval may be increased to a maximum of 5 seconds.

#### NEW SIGNAL INSTALLATIONS:

8. When a new signal is requested, the first step is to determine the problem that needs to be addressed. If no other traffic control device can resolve the problem, then a warrant analysis as per MUTCD will be performed. If a traffic signal meets warrants, staff will consider the implications of installing a signal – in some cases, a traffic signal could create more problems than it solves. Under no circumstances will a traffic signal be installed for speed or volume control, or when the pedestrian wait for the walk is longer with the signal than the wait for an acceptable gap in traffic without it.

9. In accordance with the City's policy to reduce energy consumption, TPT shall specify Light-Emitting Diode (LED) lamps for red ball, red arrow, green ball, and green arrow lamps whenever vehicle signal heads are new or replaced. In addition, all new and replacement pedestrian heads shall be LED with the international WALK and DON'T WALK



symbol indications.

10. At locations that meet the guidelines below, pedestrian heads may include a “countdown” display that shows the number of seconds. For crossings that have a fixed WALK interval, the seconds will count down from the beginning of the WALK interval until the end of the pedestrian clearance (flashing “DON’T WALK”) interval. Priority for new installations will be locations with high pedestrian volumes and/or long flashing “DON’T WALK” intervals. The countdown legend is valuable because fewer people start crossing with only a few seconds left and it helps those who walk faster or slower than normal to decide whether to start crossing.

11. Audible signals will be considered in locations after a request has been received and in consultation with the Disabilities Commission. The audible signal shall not be heard from the inside any building.

#### SIGNAL MAINTENANCE:

12. Routine maintenance of traffic signal equipment is the sole responsibility of TPT and its designated maintenance contractor. Common problems, such as bulb replacement, shall be resolved within 2 days of receiving the report. Other types of maintenance will be performed at the discretion of staff.

13. The City has some unwarranted traffic signals that do not meet the MUTCD criteria for installing a signal. When evaluating these locations, the Department will consider whether alternate traffic control devices or design changes for the intersection would be an improvement and will consider replacing the signal with a more effective treatment.

14. Flashing beacons will be removed when the construction of traffic calming or installation of other traffic control devices eliminate the need for the flasher or if they do not provide a safety benefit to the intersection.

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