Office of the City Manager

INFORMATION CALENDAR
December 13, 2005

To: Honorable Mayor and
Members of the City Council

From: Phil Kamlarz, City Manager

Submitted by: Claudette Ford, Acting Director, and Public Works Department

Subject: Evaluation of Pedestrian Countdown Signals *(CF-130-02)*

INTRODUCTION

This report is informational only and intended to advise the Council on our experience to date with pedestrian countdown signals at traffic signals.

CURRENT SITUATION AND ITS EFFECTS

The pedestrian countdown signal (PCS) feature is a large pedestrian signal, facing pedestrians at a signalized crosswalk. It starts a numerical countdown in seconds once the "Don't Walk" flashing red hand signal starts (following the "Walk" white hand symbol). This countdown signal gives the road users direct feedback as to the number of seconds remaining before the amber vehicle signal will appear.

The primary purpose of the PCS is to encourage pedestrians to not start their crossing when there is insufficient time remaining on the traffic signal for them to complete their crossing in safety.

Since the first use of the PCS in 2002, it has proven to be very popular in Berkeley, with numerous requests for additional installations throughout the city. Attachment 1 lists the 31 intersections currently equipped with PCS.

The use of PCS has also proven to have a marginal positive impact on the safe behavior of road users, especially pedestrians. With the use of PCS, fewer pedestrians started to cross the street after the start of the flashing "Don't Walk" signal.

The Executive Summary of a study of the PCS is attached to this report (Attachment 2).

BACKGROUND

In 2002 the City started using a feature to enhance traffic signals. This enhancement was recommended within the Bicycle and Pedestrian Safety (BAPS) report to improve pedestrian safety at traffic signals.

PCS were first installed at the 16 intersections recommended in the BAPS report, and a local traffic consultant was hired to perform a "before and after" study at a variety (11) of these

locations. The consultant, Pang Ho and Associates (PHA), produced its final report in July 2005. The entire report is available at the Transportation website under "Reports."

POSSIBLE FUTURE ACTION

The positive quantitative and qualitative reactions to PCS in Berkeley would suggest an expanded use of this traffic signal enhancement. The Council recently approved a grant application to the California State Office of Traffic Safety for a bicycle and pedestrian injury prevention program.

Part of this pedestrian and bicycle safety initiative is the expanded use of PCS. Staff of the Transportation Division of Public Works will work with colleagues in the Health and Human Services (HHS) Department to identify candidate locations for the expanded use of PCS. The Electrical Division of Public Works will install more PCS when they are purchased.

FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

Because the HHS Department was successful in securing a grant from the Metropolitan Transportation Commission (MTC) for pedestrian and bicycle safety, $35,000 of which will be dedicated to the PCS program, the City will be able to expand the PCS program without further drain on scarce local resources. A full retrofit of a standard traffic signal with PCS requires approximately $3,200.

CONTACT PERSON

Hamid Mostowfi, Supervising Traffic Engineer, Public Works Transportation, 981-7010

Attachments:
1: Locations in Berkeley Currently Equipped with Pedestrian Countdown Signals
2: Executive Summary of a Study of the Pedestrian Countdown Signals

ATTACHMENT 1

Signal Locations w/ Ped Countdown Signals	
6th St	Hearst Ave
6th St	University Ave
Adeline St	Ashby Ave
College Ave	Dwight Wy
Euclid Ave	Hearst Ave
King St	Ashby Ave
Milvia St	Allston Wy
Milvia St	University Ave
MLK Jr Wy	Allston Wy
MLK Jr Wy	Adeline
MLK Jr Wy	Ashby Ave
MLK Jr Wy	Hearst Ave
MLK Jr Wy	University Ave
Oxford Ave	Center St
Oxford Ave	Hearst Ave
Oxford Ave	University Ave
Sacramento St	Ashby Ave
Sacramento St	Dwight Wy
Sacramento St	Ward St
San Pablo Ave	Ashby Ave
San Pablo Ave	Gilman St
San Pablo Ave	University Ave
Shattuck Ave	Allston Wy
Shattuck Ave	Ashby Ave
Shattuck Ave	Hearst Ave
Shattuck Ave	Kittredge St
Shattuck Ave	University Ave
Telegraph Ave	Ashby Ave
Telegraph Ave	Durant Ave
Telegraph Ave	Russell St
Telegraph Ave	Stuart St

EXECUTIVE SUMMARY

The City of Berkley has recently installed pedestrian countdown timers at various locations throughout the city in an experimental effort to enhance pedestrian environment and safety. Because these pedestrian countdown timers are non-standard traffic control devices, the City of Berkeley is obligated to conduct a before and after study to evaluate the potential impact and benefits of the countdown timers for the California Traffic Control Devices Committee (CTCDC).

The study included 11 study intersections, which represent a variety of land use characteristics, traffic circulation patterns, and levels of pedestrian activities. The study primarily focused on signal compliance, late finish, pedestrian and vehicle conflict, violators, the manner in which pedestrians cross streets (walk versus run) and pedestrian speed.

The study results indicated that pedestrian signal compliance level in Berkeley is low, with or without the pedestrian countdown timers. This is perhaps because Berkeley is a pedestrian friendly city with a high level of pedestrian activities, narrower streets, and traffic that generally travels at low speeds. Still, the study shows small improvements in some aspects of pedestrian crossing patterns with the pedestrian countdown timers.

First, with the countdown timers, fewer pedestrian would decide to cross during the "FLASHING DON'T WALK" phase. Before installing the countdown signals, 99.5% of pedestrian would proceed to cross the street under the "FLASHING DON'T WALK" sign. With the countdown signals, this dropped from 99.5% to 94.6%. At the same time more waited at the curb under the "FLASHING DON'T WALK" sign, with percentages rising from 0.5% to 5.4 %.

Second, the "LATE FINISH" percentage decreased from 23% to 18% after installing the countdown timers. This is likely because pedestrians were making better decisions after seeing the display of remaining time and choosing the safer course.

Third, the countdown timers did not appear to have an obvious impact on the manner pedestrians cross streets, i.e. walk versus run. Pedestrian speed shows only a small improvement from 4.6 feet per second to 4.8 feet per second. Mostly likely, pedestrians might have quickened their steps as they saw the remaining time winding down.

Pedestrian countdown timers did not appear to have an impact on pedestrian and vehicle conflicts as defined in the study. This is primarily because vehicles must enter the crosswalk to make their turns with or without the countdown timers. The countdown timers did not change the number of violators greatly. This is likely because violators tend not to pay attention to the signal.