February 24, 2003

Federal Highway Administration (FHWA)
Office of Transportation Operations
400 Seventh Street SW
HOTO
Washington DC 20590

Re: Request for approval to install Countdown Pedestrian Signal Heads at one location

A. Problem Statement

We have recently completed construction of 27th Street, a 5-lane arterial, that separates a number of senior and elderly housing units on the east side of the road from a large commercial and retail center on the west side of the road. There is a traffic signal to facilitate pedestrian crossings, but there is confusion as to how much time the pedestrians actually have to cross the street.

B. Proposed Change

Pedestrian Countdown Displays are not currently included in the Manual on Uniform Traffic Control Devices (MUTCD) and they display a message that is not included in the MUTCD. Thus, these are considered experimental traffic control devices and require formal approval by the Federal Highway Administration prior to their installation.

The City of Bend is considering installation of Pedestrian Countdown Displays on one leg of an intersection as an experiment to help facilitate greater understanding of the pedestrian clearance interval (flashing hand).

C. Illustration

Attachment 1 provides a concept schematic (not to scale) diagram of the area and the proposed installation location of the pedestrian countdown timers.

D. Supporting data

The City of Bend's City Councilors recently attended a conference in Salt Lake City, Utah, and noted the use of Pedestrian Countdown Displays in that City and thought their usage improved pedestrian comprehension of the clearance interval.

E. Traffic Control Device

The traffic control device that we would like to install is:

LED Pedestrian Signal Hand/Walking Person
Combination/Countdown (Part Number 430-6479-001)

Manufactured by the Dialight Corporation
1501 Route 34 South
Farmingdale, NJ 07727

I do not know if this manufactured product has a patent or not.

F. Time Period &, Location

The installation time period would be for a period of 1 year from the date of installation.

We propose to install the pedestrian countdown displays in accordance to the proposed MUTCD rules as outlined in Section 4E.07:

> If used, countdown pedestrian signals shall consist of Portland orange numbers that are at least 150 mm (6 in) in height on a black opaque background. The countdown pedestrian signal shall be located immediately adjacent to the associated UPRAISED HAND (symbolizing DON'T WALK) pedestrian signal head indication.
>
> If used, the display of the number of remaining seconds shall begin only at the beginning of the pedestrian change interval. After the countdown has terminated, the display shall remain dark until the beginning of the next countdown.
>
> If used, the countdown pedestrian signal shall display the number of seconds remaining until the termination of the pedestrian change interval or until the termination of the concurrent vehicular phase's green interval, whichever occurs first. Countdown displays during the wall interval shall not be used.

The installation is proposed for the pedestrian crossing of the south leg of the signalized intersection of NE 27th Street (a north-south major arterial) and NE Forum Drive (an east-west local street). Both of these highways are under the jurisdiction of the City of Bend, Oregon and are located within the city limits of Bend, Oregon.

G. Evaluation Plan

H 1 = Pedestrians pushing the pushbutton decreases.
H1Alt = Pedestrians pushing the pushbutton stays the same.
It seems that the installation of the countdown device may provide additional information for the pedestrians so that they realize that they do not have to push the pushbutton since they still might have adequate time remaining to cross the roadway after the walk phase has been displayed. This can increase the level of service for pedestrians since they will not have to wait an additional signal cycle for a walk signal, but depending on the results of H4 below, may decrease pedestrian safety.

H2 = Pedestrians leaving the curb during the flashing don't walk phase increases.
H2Alt = Pedestrians leaving the curb during the flashing don't walk phase stays the same.
It seems that more pedestrians will leave the curb during the flashing don't walk phase (violate the do not leave the curb rule) because they realize they have additional time to cross the roadway. Again, this may increase the level of service for pedestrians since they will not have to wait an additional signal cycle for a walk signal, but depending on the results of H4 below, may decrease pedestrian safety.

H3 = Pedestrians walking normally across the intersection increases.
H3Alt = Pedestrians walking normally across the intersection stays the same.
It seems that more pedestrians will not change to a hurried crossing manner if they realize that the flashing don't walk phase has adequate time for them to complete their crossing. It seems that this will improve pedestrian confidence and comfort level in crossing this long section (5 lanes).

H4 = Pedestrians completing their crossing maneuver after time runs out decreases.
H4Alt = Pedestrians completing their crossing maneuver after time runs out stays the same.
It seems that more pedestrians will misjudge the amount of time available for their crossing, and put themselves in jeopardy by not completing their crossing in time.

A sample behavior form is attached in Attachment 2. We will attempt to collect 100 samples of pedestrian behavior for both before and after.

H. Site Restoration

The City of Bend agrees to restore the site of the experiment to a condition that complies with the provisions of the MUTCD within 3 months following the end of the time period of the experiment, unless the next MUTCD rulemaking process ends with a final rule on inclusion of Pedestrian Countdown Displays as an optional use device.

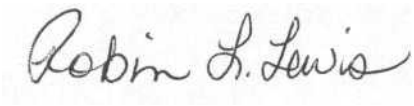
The City of Bend agrees to terminate the experiment at any time that we determine significant safety concerns are directly or indirectly attributable to the experimentation.

I. Semiannual Progress Reports

The City of Bend agrees to provide the FHWA's Office of Transportation Operations a semiannual progress report and a final result's report within 3 months following completion of the experiment.

Thank you for your consideration of this request. If there is any additional information that I need to provide to you, please let me know.

Sincerely,



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Cc:
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Attachment 2
Pedestrian Behavior Form - Pedestrian Countdown Signals

Location: _____ Observer: _____

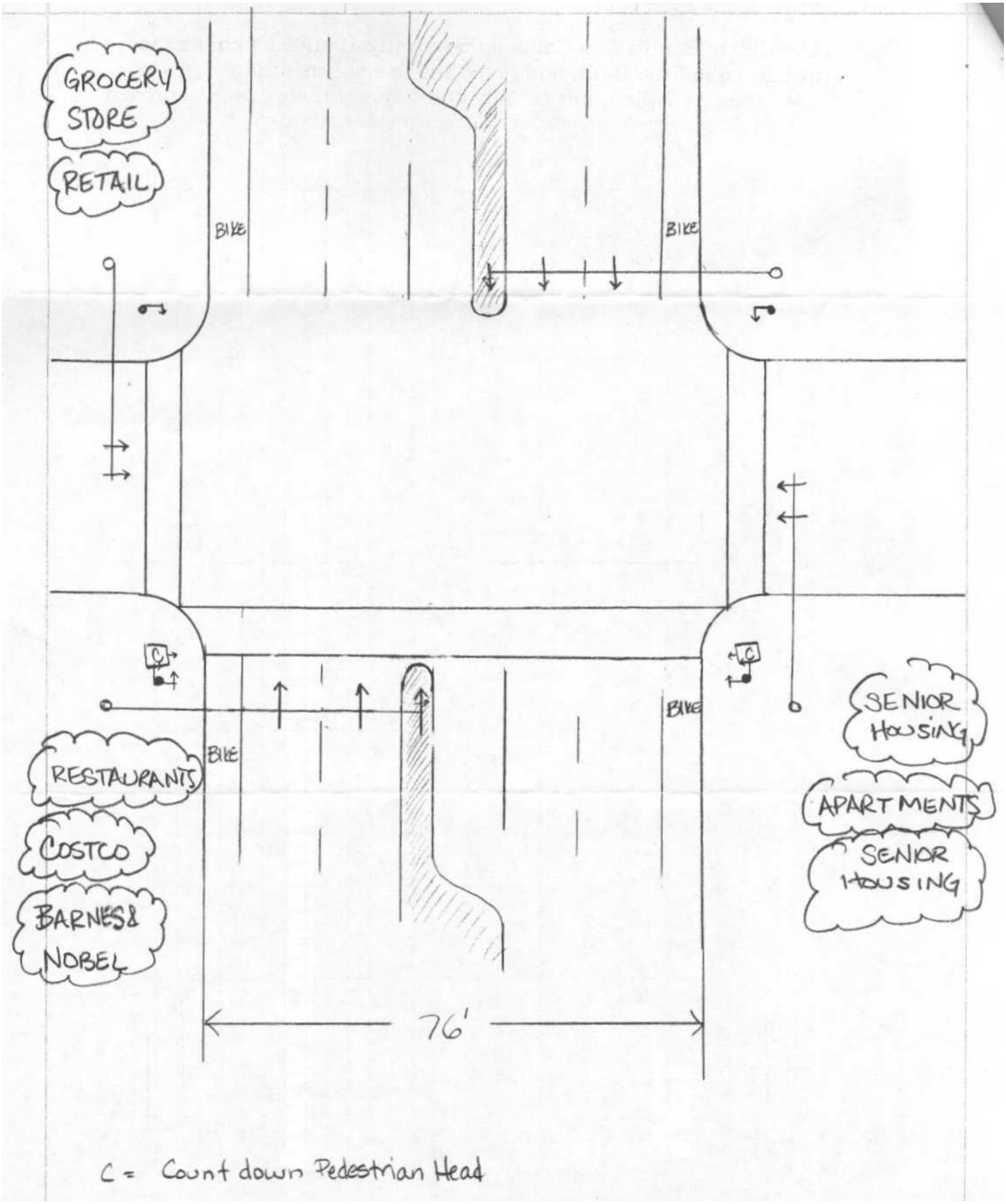
Date: _____ Period (before or after): _____

Weather Conditions: _____ Time - From: To: _____

Light Conditions (Daylight, Twilight, Dark): _____

Ped. Observation		Begin Crossing			Finish Crossing			Pedestrian Action	Pedestrian Sex	Pedestrian Age	Pedestrian Ability
Number	Alone (A) or Group (G)*	W	FDW	DW	W	FDW	DW	Walk Normally (N), Quickened Pace (Q), Ran (R), Aborted (A), Conflicted (C)	Male (M), Female (F)	Young 0-17 (Y), Moderate 18-60 (M), Older 60+ (O)	Ablebodied (A), Handicapped (H), Wheelchair (W)
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
...											
100											

* Each pedestrian observation (each row) is of one pedestrian, whether alone or in a group.
Use the lead pedestrian of each group.



C = Count down Pedestrian Head