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Federal Highway Administration  
1200 New Jersey Avenue, S.E., HOTO-1  
Washington, DC 20590

### **Concept Approval Request – Modified Pedestrian Signal Heads**

At many urban intersections controlled by traffic signals, it is not uncommon to witness conflicts between vehicular traffic making right turns and pedestrians using the adjacent crosswalk. The conflict usually occurs because the motorist's attention is either directed straight ahead at the signal indications or to the left when watching for approaching side street traffic to perform a right-turn-on-red. Another factor is the visibility of the pedestrian. If the pedestrian is waiting on the same corner as the vehicle, he or she is out of the motorist's direct line of sight and may not be noticed. When the two phases operate together, the motorist will begin the right turn just as the pedestrian steps off of the curb into the crosswalk. The surprised motorist normally reacts by slamming on the brakes or swerving around the pedestrian.

The conflict described above could be reduced if the motorist were made aware that a pedestrian was waiting to use the crosswalk. To help address this situation, it is proposed to modify a standard pedestrian signal head by adding yellow LED lights around its border. The LED lights would look similar to the daytime headlights that can be found on some newer cars (see attachments). In a typical scenario, the pedestrian signal operation would start as a standard pedestrian signal head only displaying a red upraised hand. Once the pedestrian call button is pushed, the yellow LED border lights would come on and remain lit until the end of the pedestrian phase (upraised hand, walking person, and flashing upraised hand /countdown indication). At the end of the phase, the LED border lights would switch off and the signal head would only display the red upraised hand until the call button is pushed again. This concept is intended to apply only to the two pedestrian signal heads serving a specific crosswalk. The LED border lights at the other pedestrian signals remain dark until a call is made for their corresponding crosswalks.

The proposed modification would provide a quick visual cue to motorists travelling parallel to the crosswalk that a pedestrian call has been made. For traffic turning right at the intersection, they will anticipate pedestrians entering the crosswalk and would be more likely to yield without an abrupt stop. The visual information would also benefit motorists making permissive left turns that conflict with an adjacent crosswalk. Additionally, the LED border lights would confirm to

pedestrians that the signal received their call and that they do not have to keep pushing the button. The result will be improved service to pedestrians using the facility and reduced wear on the call buttons.

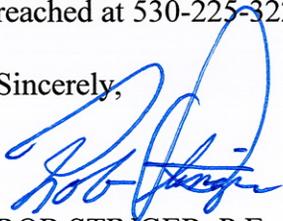
The concept presented in this request is not protected by a patent or copyright. The proposed modification to the pedestrian signal head does not change anything about the basic function and operation of the indications used to control pedestrian traffic at signalized intersections. The sole purpose for adding yellow LED lights around the border of the pedestrian signal head is to advise vehicular and pedestrian traffic that the signal has received a call to serve a specific crosswalk.

At this time, a pedestrian signal head has not been modified with the yellow LED border lights as described. The primary purpose of this request is to obtain FHWA approval of the concept before proceeding with fabrication of the device and developing an evaluation plan. Provided the concept is approved, Caltrans will prepare and submit a detailed plan for the experimentation.

The California Traffic Control Devices Committee (CTCDC) ensures experimental traffic control devices adhere to the laws, regulations, and policies of the State of California. As such, the CTCDC will receive a copy of this request and any future correspondence should this concept be given your approval.

Feel free to contact me if you have any questions or require more information. I can be reached at 530-225-3229 or via email at [rob\\_stinger@dot.ca.gov](mailto:rob_stinger@dot.ca.gov).

Sincerely,



ROB STINGER, P.E.  
Chief, Traffic Engineering & Operations  
District 2

Attachment A  
Attachment B

Cc: FHWA California Division Office  
Martha Styer – Caltrans HQ Traffic Operations  
Devinder Singh – CTCDC Executive Secretary  
Ed Lamkin – Caltrans District 2 Maintenance & Operations.

## Illustration of Modified Pedestrian Signal Head

