



# BACKPLATES WITH RETROREFLECTIVE BORDERS

## WHAT IS THE COUNTERMEASURE?

Backplates are added to a traffic signal head to improve visibility of the illuminated face. Signal head with a backplate can be made more conspicuous by framing the backplate with a retroreflective border. Backplates with retroreflective borders make signals more visible and conspicuous in both daytime and nighttime conditions. This increases the operational safety of a signalized intersection. Additionally, during a loss in power, this treatment can increase the road user's awareness of the dark signalized intersection.

Section 4D.12 of the California Manual on Uniform Traffic Control Devices (CA MUTCD) allows the option for *"A yellow retroreflective strip with a minimum width of 1 inch and a maximum width of 3 inches may be placed along the perimeter of the face of a signal backplate."*

An agency in an urban area could expect crashes at the signalized intersection to be reduced by 15 percent where the countermeasure is installed.

## WHAT HAVE WE DONE SO FAR?

The countermeasure was approved for use in California as a traffic control device statewide in December 2006 and officially made it into the MUTCD in 2009. In February 2014, the California Division Office presented with Caltrans District 1 at the California Traffic Safety Steering Committee meeting to illustrate its performance in California.

## WHERE DO WE WANT TO GO? – SUCCESSFUL PRACTICES, LESSONS LEARNED, POINTERS FOR IMPLEMENTATION

Getting more descriptive information in the CA MUTCD will help transportation professionals be aware of how widely acceptable it is to use this treatment. Additionally, as validating data continues to come in for this device's performance on the state highway system, a state specification will help strengthen its role as a lasting solution.

On the state system, District 1 has been using this treatment since February 2013 on U.S. 101. Preliminary crash data shows performance better than the expected crash reduction. It is unclear at the local agency level how much retroreflective backplates has been used. Agencies are encouraged to share their experiences with the FHWA Division Office.

For existing traffic signals that lack even standard backplates, the addition of backplates with a retroreflective border can often be accommodated on existing mast arm and span wire assemblies, but the structural capacity of the supports must be properly evaluated.



Figure 1. Courtesy of Caltrans District 1

U.S. 101 NB @ R Street, Eureka, CA (February 2013)



Figure 2. Courtesy of Caltrans District 1