



Caltrans Division of Research,
Innovation and System Information

Research



Notes



Maintenance

JUNE 2020

Project Title:
Managing Access Points in Work
Zones

Task Number: 3149

Start Date: July 1, 2017

Completion Date: June 30, 2020

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Managing Low Volume Access Points in Work Zones

Identify and/or develop equipment to manage low volume access points in one lane, one-way traffic control closures.

WHAT IS THE NEED?

Work zones that utilize one lane, reversible traffic control often contain low volume side roads and driveways (referred to as access points) that complicate traffic control efforts. When vehicles enter the traffic control from an access point, chances are high that they will be moving against the traffic flow, or entering an area where traffic has been held from both directions. These situations are problematic and may lead to delay, collisions, and injuries. When volumes are high enough, a flagger may be posted, but in most situations, posting a flagger(s) isn't feasible.

California Department of Transportation (Caltrans) desires to reduce the frequency of wrong way movements in one lane, reversing traffic control operations to increase safety and improve operations by using state-of-the-art technology. A potential outcome of this research task, in addition to improved safety, can include reduced congestion and operational costs. Recent research indicates new technology may be available (or developable) to achieve this goal.

WHAT ARE WE DOING?

Caltrans is working with the Advanced Highway Maintenance Construction Technology Research Center (AHMCT) at University of California, Davis to conduct this research. The research team will establish a Project Panel that consists of Caltrans staff from the Division of Maintenance and the Division of Construction who will work collaboratively during the research task to best guide the research effort.

The research team will conduct a thorough literature review to gather and evaluate existing research about managing low volume access points in one lane, reversing traffic control



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operations. They will also gather information about commercially available equipment or other developed products and provide insight on market availability. They will summarize and present this information to the Caltrans Project Panel for consideration.

The presentation to the panel will summarize:

- Which products can supplement the T-13 Standard Plan without product modifications;
- Which products can supplement the T-13 Standard Plan if modified;
- Can concepts for new equipment be developed.

After the presentation, Caltrans Project Panel will decide:

- Which products will be selected for further evaluation;
- Which concept for a new piece of equipment will be pursued.

From this direction, the research team will develop a testing plan for an existing product to validate its use in the T-13 Standard Plan. This test plan will also recommend annotations to the T-13 Plan that will facilitate the use of the product. In addition to the test plan for an existing product, the researchers will develop a research proposal (to include cost, scope, and duration) for a new piece of equipment to be used for managing low volume access points.

The research team will then select a commercial product based on guidance from the panel for testing. They will procure the product selected based on Caltrans' requirements and will develop a test protocol for testing the product in a closed facility. They will then perform testing and analysis of the data obtained. The research results will be documented in a final report which will include conclusions and recommendations.

WHAT IS OUR GOAL?

The goal of this task is identify and/or develop equipment to manage low volume access points

in one lane, reversible traffic control closures.

WHAT IS THE BENEFIT?

This research has the potential to benefit temporary roadway lane closures and traffic redirection work zones. This task can potentially reduce traffic flow disruptions and collisions that sometimes occur in these work zones.

WHAT IS THE PROGRESS TO DATE?

The research task ended on June 30, 2020. The DMU from Superior Traffic Services was tested on two different occasions. The testing did note that controlling traffic without a human flagger in traffic will increase safety. Test drivers had some anxiety about waiting times at Driveway Management Unit (DMU) and some confusion on the wording of the signs used with the device. For future testing, the researchers recommended a changeable message sign should be used to display wait time at the DMU, as well as reducing the number of signs used with the device.

For additional information, please contact the Task Manager.

IMAGE



Figure 1: Image of a DMU