



Caltrans Division of Research,  
Innovation and System Information

# Research



# Results



Maintenance

JUNE 2020

**Project Title:**

Managing Access Points in Work Zones

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## Managing Low Volume Access Points in Work Zones

This research study evaluated methods of traffic control for mitigating wrong way movements in low volume access points in work zones.

### WHAT WAS THE NEED?

Reversible control occurs when two opposing directions of traffic are required to share one lane. Lane sharing is generally accomplished by stationing controllers at each end of the work zone to direct traffic when it is their turn to go. Traffic flows in one direction for a time while vehicles wanting to go the other direction are asked to wait. After some time, the lane is cleared of vehicles and the direction of traffic flow is reversed. A difficulty occurs when there is a low volume access point (such as side roads and driveways) in the work zone. If a vehicle enters the traffic lane from a low volume access point while going against the current traffic flow, significant disruptions to operations can occur and safety becomes a significant concern. There is a desire to reduce the possibility of vehicles going against traffic flow by using state of the art technology.

### WHAT WAS OUR GOAL?

The main goal of this research was to evaluate methods of controlling vehicle traffic entering from low volume access points in work zones, and to test one commercial product suited to this task.

### WHAT DID WE DO?

This research started with a literature review that collected information about traffic control devices and techniques used to manage low volume access points. A presentation was



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developed and presented to the research project panel, which consisted of AHMCT staff and Caltrans staff. This presentation looked at different types of commercially available traffic control devices and techniques used to control driveways in low volume access points. The project panel decided to look at three traffic control devices called Driveway Assistance Devices (DAD) that are used to control driveways in low volume access points. After reviewing three different DADS' from three different manufacturer's, the panel chose to use a Driveway Management Unit (DMU) from Superior Traffic Services.

A test plan was developed by the project panel to evaluate the DMU. Two different tests were conducted at UC Davis using drivers recruited from the UC Davis student population. After completing the test, the drivers were asked to fill out a questionnaire. The data from this questionnaire along with the test data helped the researchers form their conclusions and recommendations.

All work from this research was documented and presented in a final report.

## WHAT AS THE OUTCOME?

The research found that using a DAD type device to control low volume access points without having a human flagger stand in a traffic lane will increase safety. The testing also discovered some driver anxiety about wait times. The use of a Changeable Message Sign (CMS) was considered to broadcast wait times, but the researchers were unable to test the CMS because of Covid-19 restrictions.

The researchers noted that future testing or use of a DAD type device should include a CMS with accurate wait times.

## WHAT IS THE BENEFIT?

Caltrans is dedicated to investigating equipment that can increase safety for its employees. The ability to control low volume access points without having a human flagger stand in a traffic lane has a direct benefit to employee safety.

## LEARN MORE

The final report documenting this research can be found at:

[ahmct.ucdavis.edu/pdf/UCD-ARR-20-06-30-02.pdf](http://ahmct.ucdavis.edu/pdf/UCD-ARR-20-06-30-02.pdf)

## IMAGE



Figure: Picture of Driveway Management Unit from Superior Traffic Services.