

Project Information Form

Project Title:	Using Connected Vehicle Technology for Advanced Signal Control Strategies
University:	University of California, Riverside
Principal Investigator:	Matthew Barth
PI Contact Information:	Email: barth@cert.ucr.edu
Funding Source(s) and Amounts Provided (by each agency or organization):	US DOT \$59,387
Total Project Cost:	\$59,387.00
Agency ID or Contract Number:	UCR-DOT-009 DTRT13-G-UTC29
Start and End Dates:	October 1, 2013 – September 30, 2015
Brief Description of Research Project:	<p>For arterial roadways, most Active Traffic and Demand Management (ATDM) strategies focus on traffic signal timing optimization at signalized intersections. A critical drawback of conventional traffic signal control strategies is that they rely on measurements from point detection, and estimate traffic states such as queue length based on very limited information. The introduction of Connected Vehicle (CV) technology can potentially address the limitations of point detection via wireless communications to assist signal phase and timing optimization. In this project report, the researchers presented an agent-based online adaptive signal control (ASC) strategy based on real-time traffic information available from vehicles equipped with CV technology. They then evaluated the proposed strategy in terms of travel delay and fuel consumption, relative to a Highway Capacity Manual (HCM) based method in which hourly traffic demand is assumed to be known accurately a priori. The Connected Vehicle Adaptive Signal Control (CV-ASC) strategy was applied to an isolated traffic intersection, as well as to a corridor of traffic intersections. The baseline signalization strategy for the corridor of traffic intersections was coordinated signal control. Study results indicated that for both the isolated intersection and corridor contexts, the proposed strategy outperformed the HCM based method and was very robust to traffic demand variations.</p>
Describe Implementation of Research Outcomes (or why not implemented):	



National Center for Sustainable Transportation

Place any photos here	
Impacts/Benefits of Implementation (actual, not anticipated):	
Web Links <ul style="list-style-type: none">• Reports• Project website	https://ncst.ucdavis.edu/project/connected-vehicle-technology-for-advanced-signal-control-strategies/