

**Project Information Form**

Project Title	Environmentally Friendly Driving Feedback Systems Research and Development for Heavy Duty Trucks
University	UC Riverside
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Funding Source(s) and Amounts Provided (by each agency or organization)	Caltrans \$136,000
Total Project Cost	\$136,000
Agency ID or Contract Number	DTRT13-G-UTC29
Start and End Dates	October 1, 2014 to September 30, 2015
Brief Description of Research Project	<p>Among several strategies to reduce fuel consumption and greenhouse gas emissions from heavy duty trucks, “eco-driving” is one that has the potential to be very cost effective. Eco-driving can be defined as fuel-efficient operation of a vehicle to achieve better fuel economy and lower tailpipe emissions while not compromising the safety of oneself and other road users. The core of eco-driving programs is to provide drivers with a variety of advice and feedback to reduce fuel consumption. The advice and feedback can be provided through various means including websites, classes or training, and in-vehicle driving feedback systems. UCR CE-CERT researchers have developed a variety of next-generation eco-driving technologies as part of a three-year Department of Energy research program and now are planning on applying these technologies to heavy-duty trucks to determine their potential at improving fuel efficiency. The developed eco-driving technology includes: 1) Eco-Friendly Fleet Planning; 2) Eco-Routing Navigation, 3) Connected Eco-Driving Feedback, and 4) an Eco-Score and Eco-Ranking System. Three of these technologies (numbers 2, 3, and 4 above) will be adapted and integrated with a state-of-the-art truck driving simulator located at UCR, where experienced truck drivers will comprehensively test the technology across</p>

	<p>a range of truck driving scenarios. By establishing a baseline of driving, and then introducing the eco-driving technology, it will be possible to quantitatively measure the potential fuel and GHG emission benefits. It is expected that these eco-driving technologies will collectively result in fuel and GHG emission savings in the range of 5% - 20% depending on the driving scenarios</p>
<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>(Attach Any Photos)</p>	
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>The research has led to UC Riverside being awarded a grant from the California Energy Commission to demonstrate eco-driving technology on 20 heavy-duty drayage trucks serving the Port of Los Angeles for one year. The project is currently ongoing.</p>
<p>Web Links</p> <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project website</li> </ul>	<p><a href="http://ncst.ucdavis.edu/project/ucr-ct-to-007/">http://ncst.ucdavis.edu/project/ucr-ct-to-007/</a></p>