UTC Project Information	
Project Title	Field Testing of Eco-Speed Control Using V2I Communication
University	Virginia Tech
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Funding Agencies	CVI-UTC (Tier 1 UTC)
Agency ID or Contract Number	451182
Project Cost	$150,000.00
Start and End Dates	September 1, 2012 – August 30, 2013
Project Duration	1 year
Brief Description of Research Project	This proposal being submitted for Connected Vehicle UTC funding is expected to use the Connected Vehicles test-bed being deployed on the Smart Road test facility at the Virginia Tech Transportation Institute for the field testing of eco-speed control of vehicles. Eco-speed control refers to controlling or providing speed advisory recommendations to drivers in response to incoming Signal Phasing and Timing (SPaT) information to reduce vehicle fuel consumption levels without compromising safety. The tests are intended to handle four levels of technological barriers in this study (defined by the four study cases defined later). The Smart Road tests will be supplemented with analysis of driver behavior in the Blacksburg test-bed using video data from “live” intersections to draw conclusions on typical driver behavior so that a comparison can be made with respect to the benefits gained. Measures of effectiveness studied will primarily be fuel-consumption, travel-time, delays and if possible emissions.

Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	The primary objective of the research proposed in this document is to test the eco-speed control system in a real environment and to get a hands-on on the implementation issues of this system. The Smart Road test bed with Connected Vehicles technology is a suitable place to do the first phase of this testing. In addition to studying the implementation issues, the research is anticipated to give valuable inference on at least the following issues: 1. Actual benefits sought when eco-speed control or ECACC is implemented and the feasibility of the system. 2. Error functions when a typical driver follows a proposed speed profile. 3. Deviation from the proposed speed profile when an automated cruising unit is used. 4. Driver-Vehicle Interface needed for an eco-speed control unit. 5. Effect of non-test vehicles in the traffic mix on (a) fuel benefits of the test-vehicle and (b) feasibility of speed adjustments. The proposed study will be the first of its kind field-testing of the proposed Eco-Speed Control Algorithm and will enable comparing simulation results with field study results. The study will also serve as the first step to identify implementation issues associated with Eco-Cooperative Adaptive Cruise Control and Eco-Speed Control strategies. This research will also address the issues of driver-acceptance of intelligent advisories such as how humans respond to alerts from an in-vehicle device or with what error humans or automated cruising devices can follow a particular advised speed profile. The error function generated for speed-following can be of high research value for studies involving speed-following.
Impacts/Benefits of Implementation (actual, not anticipated)	This study is still in progress, actual impacts and benefits of implementation will be determined in Summer 2013 when the study is completed. This page will be resubmitted in the next round of reporting to state these actual impacts and benefits.
Web Links • Reports • Project Website	http://www.connectedvehicleinfrastructure-utc.org/?q=node/65 http://rip.trb.org/browse/dproject.asp?n=32360