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Project Information Form

Project Title:	A Tool to Predict Fleet-Wide Heavy-Duty Vehicle Fuel-Saving Benefits from Low Rolling Resistance Tires
University:	Georgia Institute of Technology
Principal Investigator:	Franklin Gbologah
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Funding Source(s) and Amounts Provided (by each agency or organization):	United States Department of Transportation (USDOT) - $30,000 Matching Funds - $30,000
Total Project Cost:	$60,000
Agency ID or Contract Number:	GT-DOT-311 DTRT13-G-UTC29
Start and End Dates:	September 2017 – February 2017
Brief Description of Research Project:	The cost of fuel represents a major portion of the costs of operating on-road heavy-duty vehicles (HDV). Over the next couple of decades, the total energy demand from the HDV sector will likely increase due to forecasted growth in freight demand in many global markets, including the United States, and much of this energy will continue to be provided by fossil fuels. Therefore, carbon dioxide emissions from the HDV sector are also expected to increase in the absence of effective mitigating measures to reduce the sectors reliance on fossil fuels. Along with other fuel-saving technologies, the United States Environmental Protection Agency identified the use of Low Rolling Resistance (LRR) tires as an effective method of reducing fuel consumption. It is estimated that LRR tires can improve fuel economy in HDV by about 10 percent. However, adoption of LRR faces many barriers and the most fundamental of these barriers relate to potential performance uncertainties under real-world operating conditions. In this study, we develop a tool to predict the fleet-wide fuel-saving benefits from low rolling resistance tires. Unlike previous studies, the developed tool is applicable to both stabilized speed operations and transient speed operations. The tool is based on empirical models that estimate the fuel consumption contribution from tires as a function of vehicle payload, aerodynamic drag, road grade, duration of acceleration,

National Center for Sustainable Transportation

	duration of deceleration, and road facility type (freeway, major arterial, and minor arterial/local road). The primary purpose of the Tool to Predict Fleet-Wide Heavy-Duty Vehicle Fuel-Saving Benefits from Low Rolling Resistance Tires is to assist fleet operators, regulatory agencies, and policy analysts in assessing the fuel consumption savings from low rolling resistance tires. In the future, this tool can be extended to other vehicle segments.
Describe Implementation of Research Outcomes (or why not implemented): Place any photos here	
Impacts/Benefits of Implementation (actual, not anticipated):	
Web Links • Project website • Report • Project calculator	https://ncst.ucdavis.edu/project/a-tool-to-predict-fleet-wide-heavy-duty-vehicle-fuel-saving-benefits-from-low-rolling-resistance-tires/ https://escholarship.org/uc/item/4wg9g21f Access the Heavy Duty Vehicle Low Rolling Resistance Tire Fuel and Emission Reduction Calculator here: http://transportation.ce.gatech.edu/node/95