

Project Information Form

Project Title:	Energy and Environmental Impacts of Atlanta's Reversible Express Toll Lanes and High-Occupancy Toll Lanes
University:	Georgia Institute of Technology
Principal Investigator:	Haobing Liu, Ph.D. Co-PI(s): Michael O. Rodgers, Ph.D.
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Funding Source(s) and Amounts Provided (by each agency or organization):	U.S. Department of Transportation (US DOT) - \$60,000.00 Georgia State Road and Tollway Authority (SRTA) - \$60,000.00
Total Project Cost:	\$120,000.00
Agency ID or Contract Number:	DOT 69A3551747114 GT-DOT-516
Start and End Dates:	September 30, 2018 – March 31, 2019
Brief Description of Research Project:	<p>Nationwide, there is growing trend in using managed lane concept to enhance operations on freeways. As part of their \$16 billion proposed buildout of managed lanes in Georgia, the Georgia Department of Transportation (GDOT) is opening reversible express toll lanes on the I-75 / I-575 Northwest Corridor, and is expanding the High-Occupancy Toll (HOT) lanes on I-85 in Fall 2018.</p> <p>The Federal Highway Administration (FHWA) national performance management measures under MAP-21 require states to assess the performance of the National Highway System (23 CFR 490.511) to ensure the most efficient investment of Federal transportation funds. Transportation performance goals include: congestion reduction, system reliability, freight movement, economic vitality, and environmental sustainability. However, a detailed assessment of changes in per-capita energy use has never been conducted for these projects. This research primarily aims to evaluate the effects of two newly-constructed Express Toll Lanes along the I-75 corridor and I-85 corridor in the Metro Atlanta region in the energy and environmental context, including the impact of per-vehicle and per-person energy consumption and air pollutant emissions (PM10, PM2.5, NOx, CO, CO2, VOCs, etc.) modeling, and near-road pollutant concentration predictions.</p> <p>This study is supported by a comprehensive before-and-after data collection effort being conducted by Georgia Tech researchers for the State Road and Tollway Authority (SRTA). Tools combining dispersion model AERMOD, emission model of conventional vehicles MOVES-Matrix,</p>



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	and emission model of Alternative Fuel Vehicles (AFVs) Autonomie will be applied in this research.
Describe Implementation of Research Outcomes (or why not implemented): 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/energy-and-environmental-impacts-of-atlantas-toll-lanes/