

UTC Project Information	
Project Title	Locating and Costing Congestion for School Buses and Public Transportation (Project E3)
University	North Carolina State University
Principal Investigator	Kai Monast Director, Public Transportation Group Institute for Transportation Research and Education (ITRE)
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Funding Source(s) and Amounts Provided (by each agency or organization)	STRIDE: \$119,997 NCDOT: \$74,997 FDOT: \$45,000
Total Project Cost	\$119,997
Agency ID or Contract Number	69A3551747104
Start and End Dates	January 1, 2020 – March 31, 2021
Brief Description of Research Project	<p>Roadway congestion creates delays and increased costs for all roadway users, including buses. When buses are subjected to congestion, operating and capital costs increase, travel time reliability decreases, and the overall competitiveness and attractiveness of these modes decreases. This research integrates 3 big datasets to create a practitioner tool that allows transportation planners and engineers to model the bidirectional relationship between traffic flow data (via RITIS) with public transportation (GTFS) and school travel data (EDULOG). This practitioner tool will allow for the spatial identification of congestion impacts affecting public transportation and school buses, along with estimates of the costs incurred by these modes resulting from congestion. This methodology will allow practitioners to prioritize locations where treatments will be the most cost-effective and impactful.</p> <p>The initial research will focus on two areas that share compatible data platforms (RITIS, GTFS, and EDULOG), one in North Carolina and one in Florida. Both sites will share similar spatial density</p>

	<p>distributions that allow for urban, suburban, and rural context. Future research will allow for additional site evaluation, which will increase the explanatory power and generalizability. This initial research establishes the modeling framework and identification of key congestion factors.</p> <p>This research is unique for two reasons. First, it quantifies the financial impacts of congestion on school and public transportation at the segment-level. Second, it combines big data from three different sources representing three different modes to create a large-scale picture of where congestion is most impactful on publicly-supported bus modes.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>Not available. Research is in progress.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>Not available. Research is in progress.</p>
<p>Web Links</p> <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project website</li> </ul>	<p><a href="https://stride.ce.ufl.edu/project-e3/">https://stride.ce.ufl.edu/project-e3/</a></p>