



**Project Information Form**

Project Title	Micro-Dynamics of Business Location and Growth and its Effects on the Transportation Network and Congestion in Georgia and the Southeast Region						
University	Georgia Institute of Technology						
Principal Investigator	Dr. Vivek Ghosal and Dr. Frank Southworth						
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Funding Source(s) and Amounts Provided (by each agency or organization)	<table> <tr> <td>Georgia DOT:</td> <td>\$ 134,907</td> </tr> <tr> <td>Woodruff Foundation:</td> <td>\$ 100,172</td> </tr> <tr> <td>UTC (NCTSPM):</td> <td>\$ 58,538</td> </tr> </table>	Georgia DOT:	\$ 134,907	Woodruff Foundation:	\$ 100,172	UTC (NCTSPM):	\$ 58,538
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Woodruff Foundation:	\$ 100,172						
UTC (NCTSPM):	\$ 58,538						
Total Project Cost	\$293,616						
Agency ID or Contract Number	DTRT12GUTC12						
Start and End Dates	06/01/12 – 10/31/2014						
Brief Description of Research Project	<p>The research explores the little understood linkages between the micro-foundations of industry dynamics and economic activity, and the macro-congestion aspects of freight transport. The principal purpose of the project is to explore the potential for collecting detailed economic and shipment data that will allow more accurate economic impacts from new and large manufacturing plants to be estimated than is generally carried out. The automobile manufacturing industry in the southeast GA, and specifically the Kia Motors manufacturing plant near West Point, GA was selected for in-depth empirical analysis. Data collection involves the identification and assessment of both OEM and parts supplier employment and industrial activity growth around the auto plant. It also involves a detailed functional and spatial mapping of the domestic and international supply chain inputs and outputs and the demands they place on the region's transportation system. Of particular interest from a transportation planning perspective are any freight movement bottlenecks that exist or are projected to exist in the future as a result of the anticipated growth in highway and rail traffic, and that may hinder future industrial growth within Georgia and the SE region.</p>						
Describe Implementation of Research Outcomes (or why)	A detailed database has been developed that includes multi-sourced economic activity data that allows us to measure changes in a number						



<p>not implemented)</p> <p>(Attach Any Photos)</p>	<p>variables, including regional area populations, migration, income, occupations (manuf., retail, education, healthcare, etc) education. Comparisons between the 2005-2007 pre-auto plant opening situation and the 2007-2010 post-plant operating situation have been drawn and growth multipliers developed for the above data sources , including estimates of the dollar increases in mean and median household incomes in the region since the plant opened, compared to other areas in the state. Data on the size and geographic location of the region’s auto parts suppliers has been compiled and geo-coded, along with detailed multi-year data on imported parts shipments from Asia and Europe. These flows have been mapped in GIS software, using a multimodal (truck-rail-waterway) representation of the US transportation network linked to a global network of trans-oceanic shipment routes, and including intermodal connections through major US and supply-chain identified foreign seaports. A multi-modal/ inter-modal least cost path finding routine has been developed for estimating network-based source-to-destination shipment costs by mode of transport on a US continental and global basis. An extensive Powerpoint presentation and a Final Report have been submitted and reviewed by the Georgia DOT.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	
<p>Web Links</p> <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project website</li> </ul>	<p>Final Report: Ghosal, V. and Southworth F. (2014) <i>Micro-Dynamics Of Business Location And Growth And Its Effects On The Transportation Network And Congestion In Georgia And The Southeast Region</i>. Georgia DOT Research Project No. 12-24, Atlanta, GA. FHWA-GA-14-1224. August 24, 2014.</p>
<p>Names of students who are financially supported by this grant</p>	<p>Amy Marie Moore (Civil &amp; Environmental Engineering) EE) and Mingtao Xu (Economics)</p>
<p>Names of students who are participating (but not financially supported) by this project</p>	