

Grant Deliverables and Reporting Requirements for UTC Grants

UTC Project Information	
Project Title	A Life Cycle Assessment Framework for Pavement Maintenance and Rehabilitation Technologies
University	University of South Florida
Principal Investigator	Qing Lu Fred Mannering
PI Contact Information	qlu@usf.edu
Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT: \$67,963 USF: \$35,624
Total Project Cost	\$103,587
Agency ID or Contract Number	Sponsor Source: Federal Government CFDA #: 20.701 Agreement ID: 69A3551747119
Start and End Dates	■ Start date: 11/30/2016 ■ End date: 11/29/2017
Brief Description of Research Project	<p>This project develops a life cycle assessment (LCA) framework for pavement maintenance and rehabilitation (M&R) technologies. Pavement is a key component of transportation infrastructure and accounts for a large portion of annual agency expenditure on transportation infrastructure maintenance. Traditional scheduling of pavement M&R activities is primarily based on minimization of life cycle cost incurred by both agencies and users. Environmental impact of pavement is typically ignored. This project defines the functional unit, develops the LCA modules of pavements, identifies and develops needed data sources, and develops time-variant models to quantify the environmental impact of pavement, in terms of energy consumption and emission originating during the entire pavement life cycle. Outcomes from this project can provide guidance on rational pavement M&R policies that reduce the environmental impact of pavement on the society. The developed framework will be used to evaluate and optimize pavement M&R alternatives in follow-up studies.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>Research outcomes are adopted in a follow-up study (under the same Agreement ID) on pavement rehabilitation policy for reduced life-cycle cost and environmental impact based on multiple pavement performance measures. The outcomes may be implemented by transportation agencies to schedule pavement rehabilitation activities. At current stage, however, further work is needed to develop details of input data and component models for the developed framework to be implementable by agencies.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>No actual impacts/benefits are available.</p>
<p>Web Links</p> <ul style="list-style-type: none">• Reports• Project website	<p>http://ctech.cce.cornell.edu/final-project-reports/</p>