



Grant Deliverables and Reporting Requirements for UTC Grants

<b>UTC Project Information</b>	
Project Title	Evaluating the Traffic and Emissions Impacts of New York City Cordon Pricing
University	Cornell University
Principal Investigator	H. Oliver Gao
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT: \$82,444 Cornell: \$8,949
Total Project Cost	\$91,393
Agency ID or Contract Number	Sponsor Source: Federal Government CFDA #: 20.701 Agreement ID: 69A3551747119
Start and End Dates	 Start date: 06/01/2019  End date: 12/31/2020
Brief Description of Research Project	Traffic congestion has been a serious issue for metropolitan areas. People waste millions of their productive hours in traffic jams and it deteriorates public health by polluting the air. Several strategies have been proposed to relieve traffic congestion or curb transportation externalities. Congestion pricing is among the most promising strategies that could change travel demand by increasing trip disutility for personal vehicles. This study aims to investigate travel behavior changes in response to cordon pricing in New York City. Several pricing schemes from a combination of vehicle type and time of the day were designed and analyzed in the New York activity-based model (NYBPM). Results will help show the impact on transit ridership, trips by single-occupant vehicles and taxis, modal splits, and vehicle emissions. This study was the first of its kind for the largest metropolitan area in the U.S. and its impact on traffic emissions for the study area.

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<ul style="list-style-type: none"> <li>• A robust integrated modeling framework to evaluate traffic congestion and vehicle emission impacts of transportation strategies at high-resolution level.</li> <li>• Provides the ability to conduct sensitivity analysis on the outcome of different charging scenarios.</li> <li>• A non-linear pattern regarding the pricing charges was observed in changes in both traffic congestion and vehicle emission.</li> <li>• A significant reduction in taxi trips across the NYC that was shifted mostly to transit system.</li> <li>• Beside the changes in the travel mode preferences, a change in trip distributing due to the charging schemes were also noticed.</li> </ul>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<ul style="list-style-type: none"> <li>• Congestion pricing is one of most promising travel demand management strategies. Despite the successful implementation in few case studies around the world, political barriers have deterred their implementation in the U.S.</li> <li>• NYC would be the first the metropolitan area in the U.S. to implement cordon pricing.</li> <li>• Findings from our study, including the establishment of integrated modeling framework, enables decision makers to precisely estimate traffic and emission impacts of cordon pricing plans.</li> <li>• The modeling framework is transferable to other metropolitan areas, to evaluate their pricing strategies as well as other travel demand management strategies.</li> </ul>
<p>Web Links</p> <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project website</li> </ul>	<p><a href="http://ctech.cee.cornell.edu/final-project-reports/">http://ctech.cee.cornell.edu/final-project-reports/</a></p>