

**Project Information Form**

Project Title:	Analytical Modeling Framework to Assess the Economic and Environmental Impacts of Residential Deliveries and Evaluate Sustainable City Logistics Strategies
University:	University of California, Davis
Principal Investigator:	Miguel Jaller
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Funding Source(s) and Amounts Provided (by each agency or organization):	California Department of Transportation (Caltrans) - \$86,545.00
Total Project Cost:	\$86,545.00
Agency ID or Contract Number:	Caltrans 65A0686 Task Order 008 UCD-CT-FAST-008
Start and End Dates:	December 1, 2018 - November 30, 2019
Brief Description of Research Project:	In the last decade, e-commerce has grown substantially, increasing business-to-business, business-to-consumer, and consumer-to-consumer transactions. As a result, there has been a continuous growth in last mile operations, especially deliveries to residential areas, bringing along externalities such as congestion, air and noise pollution, and energy consumption. This project aims to develop an analytical framework to model last mile operations based on continuous approximation techniques. The model will help estimate the economic and environmental impacts of residential deliveries, from a growth perspective, and through comparative analyses between consumer decisions (e.g., trip complementarity and substitution, trip-induced demand). The model will estimate impacts for freight operators (shipper and carriers), and the community. Based on data from the National Household Travel Survey, and the American Time Use Survey, the researchers will conduct empirical analyses with the modeling framework. Moreover, to contend with the transportation issues, the team will evaluate a number of scenarios involving city logistics strategies such as the introduction of cargo consolidation facilities (CF), alternative delivery points, and the use of cargo bikes and zero emission vehicles for the last mile.
Describe Implementation of Research Outcomes (or why not implemented):  Place any photos here	



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Impacts/Benefits of Implementation (actual, not anticipated):	
Web Links <ul style="list-style-type: none"><li>• Reports</li><li>• Project website</li></ul>	<a href="https://ncst.ucdavis.edu/project/impacts-of-residential-deliveries-and-sustainable-city-logistics-strategies/">https://ncst.ucdavis.edu/project/impacts-of-residential-deliveries-and-sustainable-city-logistics-strategies/</a>