

Project Information Form

Project Title	Freight Load Balancing And Efficiencies In Alternative Fuel Freight Modes
University	University of Southern California
Principal Investigator	PI: Petros Ioannou Co-PI: Maged Dessouky, Genevieve Giuliano
PI Contact Information	ioannou@usc.edu
Funding Source(s) and Amounts Provided (by each agency or organization)	South Coast Air Quality Management District (SCAQMD): \$200,000
Total Project Cost	\$200,000
Agency ID or Contract Number	USC-SCAQMD-417 SCAQMD Contract Number: 17278
Start and End Dates	November 3, 2017 – November 2, 2019
Brief Description of Research Project	<p>There are many inefficiencies in today's freight system as a result of information constraints, lack of coordination across the supply chain, as well as institutional and organizational constraints. In addition, as zero-emission freight vehicles are developed, the performance of those vehicles will likely differ from traditional internal combustion engines for a period of time.</p> <p>In this project, the researchers will develop a methodology to reduce such inefficiencies by incorporating a centrally coordinated load balancing system. In the system, a central coordinator with access to information from all parties involved, including port terminals, trucking fleets and railyards, will be responsible for achieving optimum load balancing strategies. The researchers will also investigate the impact of new technologies such as hybrid and zero-emission freight vehicles on load balancing and management. The research will aim to identify the best use of these trucks in combination with conventional trucks to achieve desired energy efficiency and reduction in criteria pollutants and greenhouse gases through simulation modeling.</p>
Describe Implementation of Research Outcomes (or why not implemented)	



National Center for Sustainable Transportation

(Attach Any Photos)	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links <ul style="list-style-type: none">• Reports• Project website	https://ncst.ucdavis.edu/project/freight-load-balancing-efficiencies-alternative-fuel-freight-modes/