

Project Information Form

Project Title	Development of a Freight System Conceptualization and Impact Assessment (Fre-SCANDIA) Framework
University	University of California, Davis
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Funding Source(s) and Amounts Provided (by each agency or organization)	California Department of Transportation (Caltrans) - \$74,870.97
Total Project Cost	\$74,870.97
Agency ID or Contract Number	UCD-CT-TO-034.2 Caltrans 65A0527 Task Order 034.2
Start and End Dates	January 9, 2017 through March 31, 2018
Brief Description of Research Project	<p>The freight system is a key component of California's economy, but it is also a critical contributor to a number of externalities. Public agencies, private sector stakeholders, and academia are currently engaged in the development of the California Sustainable Freight Action Plan (CSFAP). This plan put forward a number of improvement strategies/policies. However, the freight system is so complex and multifaceted, with a great number of stakeholders and freight operational patterns, that evaluating or assessing the potential impacts of such strategies/policies is a difficult task. To shed some light, this project develops a freight system conceptualization and impact assessment framework of the freight operations in California. The framework assesses the impact of commodity flows from different freight industry sectors along supply chains within, originating at, or with a destination in, the state of California. The conceptual framework analyzes the freight flows in supply chains and the type of freight activity movements and modes. The framework uses a Life Cycle Assessment (LCA) Methodology.</p> <p>This report discusses the main components of the conceptual framework based on a comprehensive review of existing methodologies. The implementation is limited to the Life Cycle Impact Assessment (LCIA) following the Environmental Protection Agency's Tool for Reduction and Assessment of Chemicals and Other Environmental Impacts (TRACI). Additionally, the report describes the results from the LCIA implementation for a number of case studies. Specifically, the work estimated the impacts of moving a ton of cargo over a mile for various industry categories and commodity types. These results show the relative difference across industries and commodities and could serve to identify freight efficiency improvement measures in the state of California.</p>



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Describe Implementation of Research Outcomes (or why not implemented) (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/development-of-a-freight-system-conceptualization-and-impact-assessment-fre%E2%80%90framework/