



Caltrans Division of Research,  
Innovation and System Information

# Research Results

Planning/  
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**Project Title:**

Logistics Augmentation of the Pilot Study Investigating the Interaction and Effects for State Highway Pavements, Trucks, Freight, and Logistics

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## Private Sector Road-Freight Logistics and Roadway Preservation

The interdependency between private freight companies, public transportation agencies, and California's infrastructure and economy benefits from collaboration and sharing information

### WHAT IS THE NEED?

Freight transport is the cornerstone of California's economy as well as the nation. The state supplies more than 50% of the country's agricultural goods, and about 40% of freight enters and exits the United States through California's sea, land, and air gateways. The predominant mode of transporting freight in California is by road, with 78% of the state's communities connected exclusively by road. While California's economy is dependent on trucking to move goods within the state and beyond its borders, privately owned freight companies rely on the capacity and performance of publicly owned roads to remain competitive. Despite the importance of this interdependence, the divergent roles and purposes of the two sectors hamper collaboration. Public agencies need to focus their resources and efforts on managing, maintaining, and improving these roadways for the general well-being of all travelers, taking into account safety and environmental impacts. Freight companies require an efficient and reliable highway infrastructure, yet public agencies can encounter difficulties in acquiring information about private sector operations, in part because of a company's concerns that sharing operational information might compromise its competitive advantage. In addition, increasing freight volumes are speeding up infrastructure deterioration and congestion, which affects all transportation modes. This study on road-freight logistics is part of a multiphase project to investigate the interaction between the movement of goods and the maintenance and preservation of the state's highway system and the economic repercussions.

### WHAT WAS OUR GOAL?

The goal was to identify and examine the interdependencies of the public and private sectors that affect road-freight



Caltrans provides a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability.

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transportation in California to support economic analysis, roadway preservation, and long-range transportation planning.

## WHAT DID WE DO?

Caltrans collaborated with the University of California Pavement Research Center to investigate the private-sector strategic, operational, and tactical decisions and perspectives that are affected by the condition, capacity, performance, and regulation of California's roadways.

The study focused on 2 out of the 10 identified goods movement-dependent industry sectors—agriculture, forestry, and fishing and transportation and warehousing—working with one company from each sector to develop case studies.

Anonymity of the private sector participants was maintained, and a strong partnering relationship was established for future interaction and consultation.

## WHAT WAS THE OUTCOME?

This pilot study presented a methodology to analyze how and when road infrastructure and regulation influence supply chain vulnerability for the different industries. The case studies describe the interdependence of public sector and private sector decisions. The data and information gathered support Caltrans freight-related efforts, including implementation of the California Freight Mobility Plan and meeting mandated federal and state legislation and policies. The project also supports the work of other agencies, such as the California Air Resources Board's development of the Sustainable Freight Initiative.

## WHAT IS THE BENEFIT?

Growing freight volumes and the increasing demands on freight transportation systems to be reliable, cost-efficient, time-efficient, and flexible have highlighted the importance of the

interdependence between the public and private sector in providing the market with the essential freight systems it requires. Yet trucking also affects the performance and lifespan of public roadways used by all travelers. Caltrans must make critical cost-benefit decisions for maintaining the highway system network and all modes of transportation. The partnering relationship established between Caltrans and the private firms in the case studies provide a potential opportunity for ongoing research collaboration that contribute to the interdependency of freight, pavement, vehicles, and the economy.

## LEARN MORE

To view the complete report:

[www.ucprc.ucdavis.edu/PDF/UCPRC-RR-2014-02.pdf](http://www.ucprc.ucdavis.edu/PDF/UCPRC-RR-2014-02.pdf)

To view a compilation of executive summaries of the various stages of this project:

[www.ucprc.ucdavis.edu/PDF/UCPRC-SR-2014-01.pdf](http://www.ucprc.ucdavis.edu/PDF/UCPRC-SR-2014-01.pdf)

## IMAGES



Figure 1: National truck freight flows to and from California in 2007

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