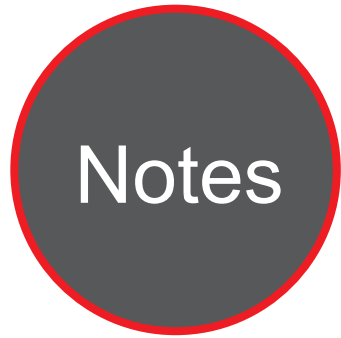




Caltrans Division of Research,
Innovation and System Information

Research



Notes



Planning, Policy
& Programming

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Project Title:
Mineta Transportation Center

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Assessing Public Health Benefits of Replacing Freight Trucks with Cargo Cycles in Last Leg Delivery Trips in Urban Centers

Data collected from the interviews, focus groups, and modeling will inform cargo cycle policy development for the study area and will encourage adoption of cargo cycles for other municipalities.

WHAT IS THE NEED?

With increased urbanization, population growth and changes in goods movement patterns favoring just in time delivery, combined with reduced stock in stores, there has been increased freight movement in cities. It is not surprising that now freight makes up a large segment of urban daily traffic, contributing to emissions, noise and safety concerns. In addition, urban freight logistics and supply chains are often hindered by "last mile" delivery in areas of high population.

Under such an unsustainable context, decision-makers, engineers and planners are considering innovative ways of promoting urban sustainability and guaranteeing mobility and quality of life, while ensuring an efficient urban goods distribution system.

One innovative mode gaining widespread attention for urban deliveries is cargo cycles, also known as cargo bikes. As online shopping has increased leading to concerns about congestion and climate change, cargo bikes have been introduced to several cities, including Paris, London and Dublin. Despite the recognized potential and possible success of transporting at least 25% of freight via cycle, research in this growing area is limited.

This proposed study seeks to cultivate interest in policy and practice to understand and examine the use of motorized and non-motorized cargo cycles as an innovative strategy to freight-induced congestion, pollution and noise problems in urban centers.



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WHAT ARE WE DOING?

Our research will investigate the potential of cargo cycles to deliver last mile freight in Oakland, California, with a focus on West Oakland.

The research will involve seven tasks:

- **Task 1A:** Conduct a literature review on national and international efforts to utilize cargo cycles for freight delivery. Identify Oakland specific rules for cargo bicycle use in bike lanes, sidewalks, or regular traffic lanes.
- **Task 1B:** Develop relationships with the Oakland community, including Oakland Caltrans contacts, community leaders, and local business leaders.
- **Task 2:** Collect community level data to examine the nature and extent of the problem of noise and pollution produced by freight vehicles in the selected community.
- **Task 3:** Analyze the problem of noise and pollution produced by freight.
- **Task 4:** Collect data required for model development.
- **Task 5:** Conduct model simulation.
- **Task 6:** Implement data analysis plan.
- **Task 7:** Produce draft and final reports and disseminate research findings.

WHAT IS OUR GOAL?

Data collected from the interviews, focus groups, and modeling will inform cargo cycle policy development for the study area and will encourage adoption of cargo cycles for other municipalities where congestion, pollution and other public health impacts from freight delivery are of concern.

WHAT IS THE BENEFIT?

1. Evaluate the impact of replacing freight trucks with cargo cycles on mobility, traffic efficiency and emissions.

2. Determine what circumstances cargo cycles can replace freight trucks and how private commercial businesses can change their packing/delivery practices to achieve policy goals of sustainability, mobility, improved environmental and public health (noise, road safety) outcomes.
3. Provide recommendations to improve the availability of facilities, such as consolidation centers and dedicated bike lanes, to adopt this freight delivery.

WHAT IS THE PROGRESS TO DATE?

This research project started in March 2020. The research team and research plans are in place. The next steps will be to start Tasks 1A and 1B as listed below.

- **Task 1A:** A literature review and synthesis on current cargo cycle efforts and Oakland city rules regarding cargo cycles
- **Task 1B:** Formation of relationships with Oakland community contacts

IMAGE



Image 1: A customized cargo cycle.