



Caltrans Division of Research,
Innovation and System Information

Research

Notes

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JULY 2022

Project Title:
Integrating Micromobility with Public
Transportation

Task Number: 3368

Start Date: October 1, 2021

Completion Date: November 30,
2022

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Integrating Micromobility with Public Transportation

Continuing research on designing public transit stations to enhance access to first/last mile mode choices.

WHAT IS THE NEED?

This project will build upon a previous project nearing completion titled, Designing Public Transit Stations to Enhance Access to First/ Last Mile Mode Choices. The research team has conducted site surveys of 19 Bay Area Rapid Transit (BART) rail stations in the California Bay Area, which are served by seven shared micromobility operators (Table 1). In the previous project, the researchers have explored the ways in which the built environment can support first- and last-mile transit mode choices with their partners at BART. Due to COVID-19, BART ridership dropped by 90%, which had an impact on this first phase of the work as it was not possible to observe normal travel behavior in 2020. Many micromobility operators plan to expand their Bay Area fleets in summer 2021, which will be a great opportunity to continue this timely research.

WHAT ARE WE DOING?

This project has three main research objectives:

1. Bay Area Micromobility Transit Map

The researchers plan to continue their work with the UC Davis Center for Regional Change to map the bicycle facilities around 19 BART stations in the Bay Area in the operation zone of seven micromobility operators. They hope the map will reveal opportunities to develop future bike lanes that would connect last-mile commuters to BART stations. The researchers also expect the map will help regulators see where different companies are permitted to operate and how that affects travel behavior. They will identify and map the different types of cycling infrastructure such as bike paths, bicycle boulevards, cycle tracks, bike lanes, sharrows and yield-flow streets.



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2. Bay Area Stakeholder Interviews and Surveys

Conversations with key stakeholders will help the researchers to consider the challenges that public transit managers experience to keep various micromobility systems organized and available at their transit stations to provide a last-mile solution. They plan to interview transit and micromobility operators and planners by Zoom, and survey micromobility users via outreach posters with a survey link (bit.ly) and QR code posted at BART stations, and announced at regional bicycle and pedestrian meetings.

3. BART Station Micromobility Inventory

In 2020, the researchers surveyed the physical features of 19 BART stations. In 2021, they will return to the 19 BART stations and see how micromobility has changed with COVID-19 recovery efforts. They plan to complete that with both in-person observations and with city-provided data from the Mobility Data Specification (MDS) API that shows anonymous user activity per street segment. For user behavior, they will use a behavior setting approach to document activities at shared micromobility stations, which includes quantifying the number of users and describing activity patterns.

WHAT IS OUR GOAL?

This new project would continue stakeholder interviews, update ArcGIS map files (bicycle lane, operator zones, transit stations) (Figure 1), explore travel behavior, and monitor best practices to increase micromobility and public transit ridership post-COVID-19.

WHAT IS THE BENEFIT?

The researchers will produce a final report synthesizing the research, literature review, documentation of field work, and design recommendations. They will also produce a policy brief summarizing the work and framing it according to relevant policies or policy opportunities.

WHAT IS THE PROGRESS TO DATE?

The project team met with the Caltrans team to go over the survey and interview documents. The documents have been approved by Caltrans and IRB to move forward with planned interviews and surveys this month.

IMAGES

	San Francisco	Berkeley	Oakland	San Jose	Fleet Model
BART Stations	Embarcadero	North Berkeley	Rockridge	Berryessa / North	
	Montgomery	Downtown Berkeley	MacArthur		
	Powell	Ashby	W. Oakland		
	Civic Center		19th		
	16th		12th		
	24th		Lake Merritt		
	Glen Park		Fruitvale		
Operator	Lyft Bay Wheels (262 stations and 2,600 bikes)				bike
		yes	yes	yes	e-bike
					e-scooter
	Spin				e-scooter
	Lime		1000		e-scooter
	Bird / Scoot		1000		e-scooter
	Gruv		200		e-scooter
Razor				yes	e-scooter
	Revel	432 (soon)	1000		e-scooter
Total Permitted Operators	5	1	5	2	
Total Permitted Vehicles	3000	?	3200	?	

Image 1: Bike, e-bike and e-scooter share (docked and undocked) operators permitted in San Francisco, Berkeley, Oakland, and San Jose, July 2020

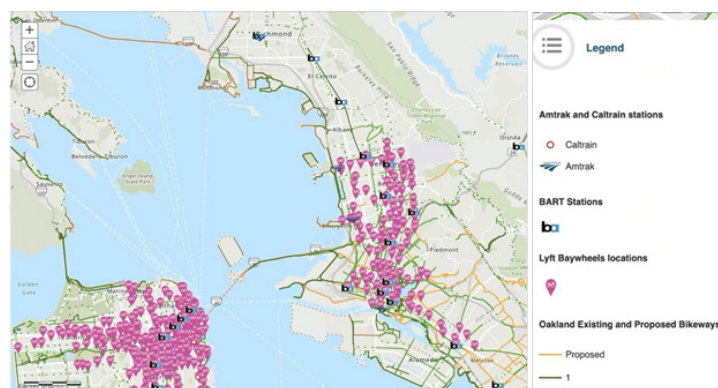


Image 2: Bay Area Micromobility Transit Map View ArcGIS, online at <https://arcg.is/1jPmXm>