

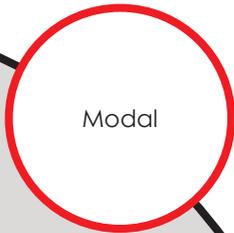


Caltrans Division of Research,  
Innovation and System Information

# Research



# Results



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**Project Title:**

Innovations in Transit? An In-Depth Case Study of the City of Monrovia/Lyft Public-Private Partnership to Increase Transit Ridership in Suburbia

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## Innovations in Transit? An In-Depth Case Study of the City of Monrovia/Lyft Public-Private Partnership to Increase Transit Ridership in Suburbia

To assess whether the public-private partnership with a transportation network company constitutes a viable and equitable option to address the first/last mile issue in a suburban community.

### WHAT WAS THE NEED?

The proposed research was an in-depth case study of a public-private partnership (PPP) between Lyft and the City of Monrovia, where a station on the LA Metro rail system opened in March 2016. Lyft is an on-demand transportation company providing ride-hailing services and based in San Francisco. Monrovia, a suburban community, with a population of 37,100 is located 20 miles northeast of downtown Los Angeles.

Launched in March 2018, this PPP is designed to provide an innovative way to bridge first mile/last mile connections between transit stops and origin/destinations as well as to provide residents a more convenient, faster, and personalized public transportation. Lyft serves as Monrovia's primary public transit provider for ADA and all non-ADA related services. To this date, the PPP has been so successful that it has led to a significant deficit in the transportation budget of the City, resulting in two successive price increases for non-transit-related rides since the beginning of the public-private partnership.

### WHAT WAS OUR GOAL?

The study was conducted to address the following research questions:

1. What was the socioeconomic and demographic profile of the first/last mile users?
2. To what extent did the program meet the first/last mile mobility needs of Monrovia residents, especially those of low-income and/or transit dependent residents?



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3. Could the PPP be considered a new model of “transit suburb,” where subsidized Transportation Network Company (TNC) rides support transit ridership and reduce automobile dependence?
4. From an institutional and sustainability perspective, what were the lessons learned, and how might this model be replicated in other suburban communities?

## WHAT DID WE DO?

Throughout this study, the research team presented several analyses that examined the implementation of the GoMonrovia program. Overall, these analyses were not exhaustive and could only be extended if additional data (e.g., Monrovia Metro station ridership statistics) were available. Nevertheless, they illuminated the program’s outcomes across two dimensions.

The first dimension was an equity one: what was the socioeconomic and demographic profile of first/last mile users, and to what extent did the program meet the first/last mile needs of those with low incomes and/or transit dependency? The second dimension was an environmental and transit system one: to what extent has the GoMonrovia program reduced personal vehicle usage? The answers to these questions can help us understand the program’s level of success and its replicability in other suburban communities.

To answer the first question regarding equity – did the GoMonrovia program increase transit capabilities of disadvantaged households – the research team began conducting analysis at the neighborhood scale. They implemented a cluster analysis that sorted Monrovia neighborhoods (i.e., census block groups) into five distinct groups based on their sociodemographic and housing characteristics.

Then, the researchers studied the extent to which neighborhoods’ group assignments explained variations in GoMonrovia use to/from these neighborhoods, both generally and to/from the

Gold Line Metro station area. The results suggested that a significant association for travel to/from the station area, although they did not reveal individual household traits driving GoMonrovia usage as a first/last mile mechanism. After all, the cluster analysis incorporated 15 sociodemographic and housing characteristics.

The research team then pursued this question at the individual household scale via responses to the survey. Relative to all respondents, those who used GoMonrovia at least weekly to access the Gold Line station were: less likely to have regular access to a personal vehicle; more likely to live beyond one mile from the station; more likely to be in prime working age (25 - 44 years old); and less likely to live in a household earning at least \$100,000. From a descriptive perspective, usage of GoMonrovia as a first/last mile transit mechanism seems attractive to households that are more transit-dependent, lower income, relatively young, and outside convenient walking distance to the Metro station.

The results of regression models run on the same survey responses, however, qualify these descriptive findings. The research team confirmed that transit-dependent households (i.e., those without regular personal vehicle access) and those living beyond one mile of the Metro station are significantly more likely to use GoMonrovia as a first/last mile mechanism.

However, the researchers failed to generate evidence that those of prime working age or of retirement age are more likely to use the program similarly; and in fact, they uncovered consistent evidence that they were less likely to do so. Meanwhile, the research team also failed to generate evidence that lower-income households were more likely to use the program as a first/last mile mechanism. Therefore, the results suggested that GoMonrovia has served as a first/last mile mechanism not for households with economic challenges or mobility issues (i.e., the senior population) but instead for those lacking a personal vehicle and/or living far from the Metro station.

To answer the second question regarding environmental and transit benefits – did GoMonrovia encourage households to substitute Lyft rides for personal vehicle usage – the researchers failed to find meaningful evidence based on households' survey responses. More specifically, their regression modeling did not reveal a significant substitution effect for those who used GoMonrovia at least weekly. Therefore, the effect's estimated coefficient was negative in direction and had a level of significance near the 10% confidence level. As a result, it was possible that a larger sample of survey responses would indicate a significant substitution effect.

## WHAT WAS THE OUTCOME?

Before considering the larger conclusions regarding the ongoing feasibility and replicability of the program, the research team noted two substantial limitations to the findings. First, survey responses were collected during the COVID-19 pandemic, which asked households about their current characteristics (e.g., employment status) as well as their current and pre-pandemic usage of the GoMonrovia program. As a result, they predicted that households' pre-pandemic travel behaviors using their current characteristics, yet some of those characteristics may have changed between pre-pandemic and the present day. Second, the regression model specifications were relatively parsimonious in nature, and that was due to the low number of survey responses they were able to collect, i.e., a sample size of approximately 200 for these models.

Collecting a larger number of survey responses after the pandemic subsides, preferably via probability sampling, would accomplish three things. First, the researchers would be able to explore variations in travel behavior uninfluenced by COVID-19 concerns using respondents' contemporaneous characteristics, addressing the first limitation above. Second, they would be able to specify less parsimonious regression models, which would allow them to explore relationships between respondents' travel behaviors and

their characteristics on more granular scales. For example, instead of employing a single indicator of household income (i.e., households earning at least \$100,000), they could employ multiple indicators (e.g., households earning \$25,000 - \$49,999; households earning \$50,000 - \$99,999, etc.). Furthermore, the near-significant substitution effect the research team estimated between GoMonrovia and personal vehicle usage may, in fact, be deemed significant once a sufficient sample size became available for analysis. Finally, the use of probability sampling rather than convenience sampling would mitigate issues of bias in their descriptive and regression analyses.

The results presented several analyses that examined the implementation of the GoMonrovia program, a public-private partnership between the City of Monrovia and Lyft. In response to the questions mentioned, the researchers confirmed that households without regular access to a personal vehicle are significantly more likely to use GoMonrovia as a first/last mile mechanism.

The same holds true for those living beyond one mile of Monrovia's Metro station. At the same time, they failed to generate evidence of those prime working age or retirement age, as well as those who are relatively low-income, utilize GoMonrovia similarly. Furthermore, they did not observe a significant substitution effect between GoMonrovia and personal vehicle usage. Based on these results, the researchers recommended several policy for enhancing the community benefits of GoMonrovia and improving its replicability in other suburban areas of Southern California.

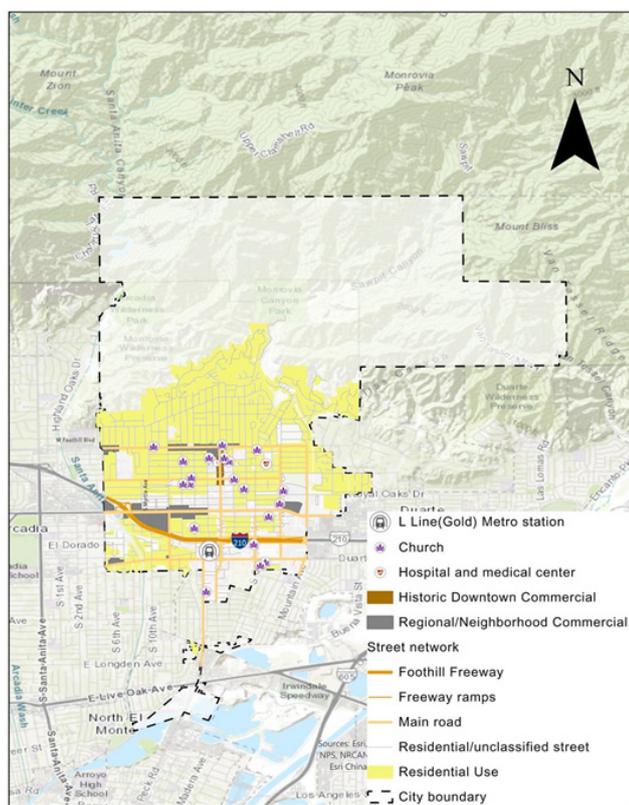
## WHAT IS THE BENEFIT?

- A detailed case study of a PPP between a suburban city and a TNC -- a best practice.
- Knowledge on the profile of transit users, addressing an equity question, whether it serves transit-dependent population most in need of first/last mile options in the suburban context.



- Some clarity on the modal shifts induced by the introduction of novel transportation modes in a suburban context—in this case a combination of transit and TNC.
- An assessment of the program with a specific focus on the institutional and fiscal arrangements supporting it with an eye on possible replication in other suburban communities.

**IMAGE**



Community Destinations within the City of Monrovia, California

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