REPORT
SUMMARY

FTA Report No. 0206
December 2021

FTA
RESEARCH
FEDERAL TRANSIT ADMINISTRATION

MOBILITY ON DEMAND (MOD) SANDBOX DEMONSTRATION: CITY OF PALO ALTO AND BAY AREA FAIR VALUE COMMUTING

EVALUATION REPORT

Background

The City of Palo Alto and Bay Area Fair Value Commuting (FVC) project is one of 11 Mobility on Demand (MOD) Sandbox Demonstrations funded by the Federal Transit Administration (FTA). Four cities in the San Francisco Bay Area of California—Palo Alto, Cupertino, Menlo Park, and Mountain View—partnered with Prospect Silicon Valley, RideAmigos, and Commuter Wallet to implement a project aimed at reducing Bay Area single-occupant vehicle (SOV) commutes by developing an integrated trip planning platform and executing a set of strategies to shift commuting behavior.

Despite the number of major public transportation systems and the higher-than-average transit mode share, commuting in the San Francisco Bay Area is still predominantly done with SOVs. This is partially due to the limited number of alternative modes that exist in low-density areas connecting to traditional public transportation services serving key congested corridors. Broadly, Bay Area commuters are hindered in their ability to conduct multimodal or non-SOV mode trips for commuting. To encourage non-SOV commuting, the Bay Area FVC project aimed to develop an integrated commute planning platform and mode shifting incentive system. The project provided users with the ability to plan, compare, and pay for alternative transportation modes and incorporated different commute incentives and benefits when applicable. The cashout system was an incentive-based program where an incentive was paid to employees who used non-SOV commute modes.

Objectives

Through the MOD Sandbox Program, FTA enabled the four cities to explore innovative business models and partnerships to deliver high quality, seamless, and equitable alternative mobility options. The project set out with multiple objectives to 1) reduce overall SOV commuting, 2) reduce SOV vehicle miles traveled (VMT) and fuel consumption, 3) benefit lower income workers , 4) improve access to pre-tax payments for use of transit, 5) develop a mobility aggregator, a sustainable feebate or cashout policy, and gap-filling analytics to encourage reduced use of SOVs, 6) enhance the attitudes of employees towards transit, and 7) produce lessons learned for future projects. An independent evaluation was conducted to access the demonstration impacts and outcomes based on the project goals and objectives.

Findings and Conclusions

The project evaluation revealed that the program had positive impacts in the form of shifting commuting away from SOVs, reducing VMT and fuel consumption, shifting benefits to lower-income workers, and improving attitudes towards public transit.

This report presents the results of an independent evaluation of the Palo Alto MOD Sandbox Demonstration, with lessons learned that potentially can help advance similar initiatives within other transit systems.

The evaluation was guided by nine hypotheses analyzed using survey data, activity and other data, and expert (stakeholder/project partner) interview data. Key findings include the following:

- **The mode share of commuting by SOVs declined and that by non-SOVs increased**. Survey and trip activity data supported this finding, and a majority reported reduced driving due to the pilot.
- **The total commute VMT, energy consumption, and CO_2 emissions, declined**. Survey and trip activity data showed that the total commute VMT, energy consumption, and CO_2 emissions decreased by 40%, 46%, and 10.2 metric tons, respectively.
- **The FVC benefitted lower-income workers more than higher-income workers.** Savings experienced by lower-income participants were higher as percentage of their income relative to higher-income participants.
- **The attitudes of employees towards public transit became more positive**. The FVC strategy enhanced the perception of public transportation by pilot participants.

Benefits

The Bay Area FVC project was a learning experience for all stakeholders about contractual negotiations, project operation, technological challenges, and other issues related to the continuation of the project. Project partners reported their satisfaction of the multi-city partnership because it allowed cities to work together and overcome challenges. Participants liked the gamified experience and leaderboards for non-SOV use to compare their progress with co-workers.

Overall, the demonstration reduced SOV use, benefitted lower-income workers, and improved the attitudes of employees towards transit and demonstrated the capabilities of a trip-planning platform and a cashout system to shift traveler behavior, streamline the payment process, and improve the traveler experience. The lessons learned from the pilot project can support future projects through building on this experience and advancing common objectives within other transit systems.

FTA Report No. 0206
Project Information

This research project was conducted by Elliot Martin, Ziad Yassine, Adam Cohen, and Susan Shaheen of UC Berkeley and Les Brown of ICF. For more information, contact FTA Project Manager Steven Mortensen at (202) 493-0459 or Steven.Mortensen@dot.gov.

All FTA research reports can be found at https://www.transit.dot.gov/about/research-innovation.