



# SYNTHESIS REPORT: FINDINGS AND LESSONS LEARNED FROM THE INDEPENDENT EVALUATION OF THE MOBILITY ON DEMAND (MOD) SANDBOX DEMONSTRATIONS

## Background

The Federal Transit Administration (FTA) Mobility on Demand (MOD) Sandbox effort developed around a vision of a multimodal, integrated, automated, accessible, and connected transportation system in which personalized mobility is a key feature. In 2016, FTA selected 11 MOD Sandbox demonstration projects that tested strategies to advance the MOD vision. In partnership with public transportation agencies, the MOD Sandbox Program demonstrated the potential for innovations to support and enhance public transportation services by allowing agencies to explore partnerships, develop new business models, integrate transit and MOD strategies, and investigate new, enabling technical capabilities.

Broadly, MOD Sandbox projects took several approaches including the development of new or improved trip planners, integration of innovative mobility services with traditional public transportation functions, and implementation of new integrated payment and incentive structures for travel using public transportation. Several Sandbox projects focused on improving first/last mile access to public transportation through collaboration with private sector operators including bikesharing, carpooling, ridesourcing/transportation network companies, and other shared mobility operators. Many of the MOD Sandbox demonstrations explored public-private partnerships serving a variety of use cases including trip planning and payment integration, first and last mile solutions, supplemental and extended service, flexible pricing and incentives, innovative paratransit service, and parking utilization.

## Objectives

An independent evaluation (IE) is required by federal public transportation law 49 U.S.C. § 5312(e)(4) for demonstration projects receiving FTA Public Transportation Innovation funding. As part of this assessment, the independent evaluation sought to understand the achievement of project goals, project impacts, lessons learned, needed policies, most successful business and partnership models, and scalability of innovations considering a variety of context-specific variables, such as built environment characteristics and mode split. Ultimately, the evaluation of each project's benefits and impacts sought to guide the future implementation of mobility innovations.

## Findings and Conclusions

*The evaluation of hypotheses designed to test the effectiveness of the 11 MOD Sandbox demonstrations revealed a diverse set of conclusions. On balance, the evaluation team found most of the projects' objectives were supported, mostly supported, or partially supported. Conversely, a significant number of objectives were unsupported or not able to be conclusively tested due to data availability/sharing limitations and changes to demonstration scopes or partnerships. At the programmatic level, there were several cross-cutting findings related to user impacts, system operations, and institutional considerations. Considerations for future mobility innovation projects and programs include the importance of flexible contracting, dedication of time and*

*resources for stakeholder engagement, and conducting internal due diligence and feasibility assessments in the project scoping phase. Areas for future research and guidance are also highlighted in the report.*

This report provides a synthesis of findings from the 11 MOD Sandbox demonstrations. The report presents an overview of the IE methodology and framework used for developing test procedures and conducting evaluations. Cross-cutting findings from the data analysis on user impacts and systems operations are explored alongside various institutional factors that influenced project development and outcomes. Considerations for future mobility innovation demonstration programs gathered through interviews with project partners are also included. Finally, site-specific summaries of findings from the 11 evaluations are shared in an appendix.

The synthesis of evaluation findings revealed a wide variety of outcomes across common areas and themes, including:

- **User Impacts:** Evaluation of user/traveler surveys and travel activity data revealed projects' abilities to improve first/last mile challenges, improve access and/or travel information for customers with disabilities and disadvantaged travelers, and to reduce personal automobile use.
- **System Operations Impacts:** Evaluation of transit agency and travel activity data revealed projects' abilities to improve multimodal trip options and to decrease emissions/fuel consumption and the overall cost of public transportation service delivery.
- **Institutional Impacts:** Project stakeholder interviews addressed issues related to data sharing, public-private partnerships, service provision characteristics, cost-effectiveness, and marketing.

Highlighted findings in each of these areas and themes are discussed in the Synthesis Report. Readers should refer to individual evaluation reports for in-depth presentations of findings and methods.

## **Benefits**

Multiple project partners reported that the MOD Sandbox Program was instrumental in testing new service models and that demonstrations would not have been possible without FTA funding and institutional support. A number of these projects have continued to operate beyond the demonstration period. Additionally, the public transportation community has witnessed widespread adoption of many of the technologies and business models demonstrated through the MOD Sandbox Program. The comprehensive independent evaluation of these projects provides an unbiased assessment of their impacts and supports evidenced-based decision making for those considering similar investments.

## **FTA Report No. 0242 Project Information**

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