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### Title

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# Integrating Microtransit Service with Traditional Fixed-Route Transit Costs More but Greatly Improves Access to Jobs

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## Issue

Microtransit is a mobility service that dynamically routes and schedules 6- to 20-seat vehicles to serve passengers within a defined region. Microtransit services are similar to ride-pooling services operated by Transportation Network Companies (e.g., Uber, Lyft); however, microtransit services are owned by cities or transit agencies. Integrating microtransit services with traditional fixed-route transit (FRT) has been touted as a means to attract more riders to public transit generally,<sup>1</sup> improve mobility and sustainable transportation outcomes (e.g., reduce greenhouse gasses and local pollutants), and provide better accessibility to disadvantaged travelers. However, few academic studies have evaluated these claims. To address this gap, we surveyed California transit agencies that currently operate or recently operated microtransit services to obtain insights into integration challenges. We also developed an agent- and simulation-based modeling framework to evaluate alternative system designs for integrating FRT and microtransit in downtown San Diego and Lemon Grove, a suburban area in San Diego County. See Figure 1.

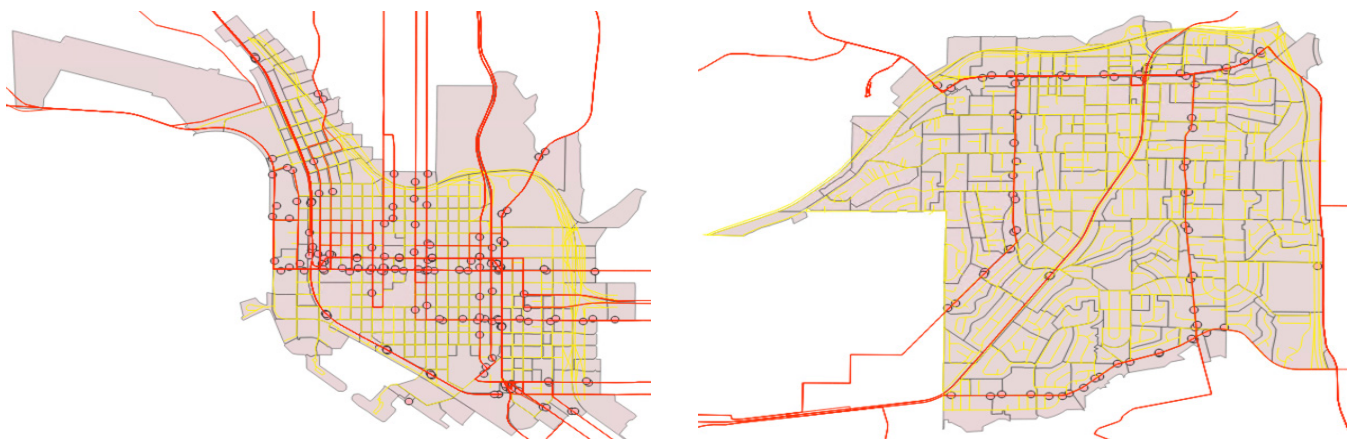


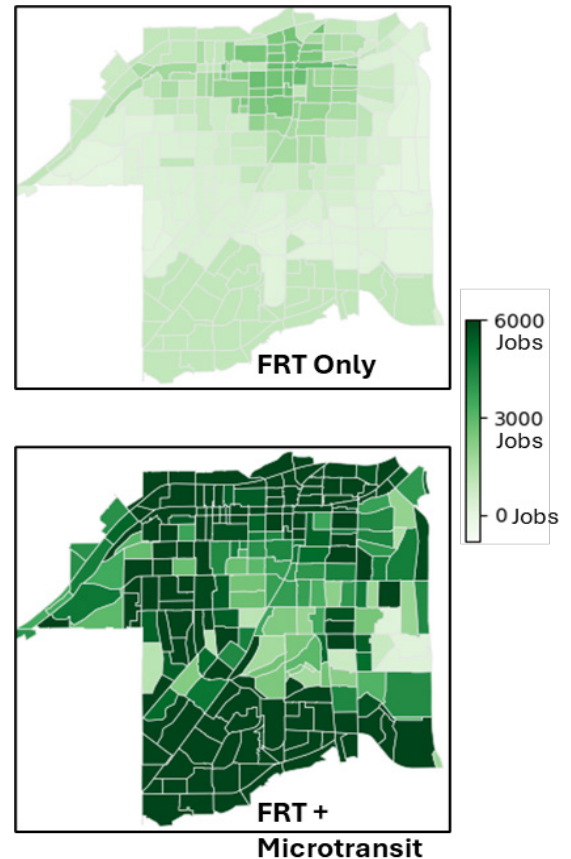
Figure 1. (Left) Downtown San Diego and (Right) Lemon Grove case studies. (The red dots represent FRT stops, and the red lines are FRT lines.)

## Key Research Findings

**Microtransit is expensive.** In both interviews and model-based scenarios, we found that microtransit significantly increases transit agency operating costs when replacing or complementing FRT. Simulation results suggest that while microtransit can increase transit ridership, the average subsidy per transit rider still increases with microtransit. LA Metro reports that their microtransit service requires an average subsidy of \$43 per ride.<sup>2</sup> One California transit agency we interviewed confirmed that they also subsidize microtransit at \$40 per rider.

**Microtransit noticeably increases access to jobs.** In downtown San Diego, our model results suggest that microtransit increases rider access to jobs by 5-10% when operating alongside existing FRT lines. However, in Lemon Grove, job access goes up by over 300%, as shown in Figure 2, when microtransit complements or replaces existing FRT service. While our study only analyzed job access, we expect to find similar results for healthcare, groceries, and other economic and social opportunities.

**Microtransit does not reduce vehicle miles traveled.** Model results suggest that despite shifting some travelers from private vehicles to transit, adding microtransit services increases overall vehicle miles traveled since microtransit’s other riders switch from walking and FRT, and microtransit involves deadheading miles.



## Conclusion

This study highlights the fact that complementing or replacing FRT lines with microtransit will increase transit agency operating costs. On the other hand, microtransit can significantly increase access to jobs and, most likely, other activities. Transit agencies and cities must determine whether the benefits of improved accessibility, particularly for those who do not or cannot use a personal vehicle, outweigh the additional operating costs.

## More Information

This policy brief is drawn from the report “Is Microtransit a Scalable Complement to Traditional Public Transit?” available at [www.ucits.org/research-project/rimi-4i/](http://www.ucits.org/research-project/rimi-4i/). For more information, please contact Mike Hyland at [hylandm@uci.edu](mailto:hylandm@uci.edu).

<sup>1</sup>In this policy brief, the terms “public transit” and “transit” include both FRT and microtransit services.

<sup>2</sup><https://www.latimes.com/california/story/2023-09-14/the-1-ride-that-costs-metro-43-is-this-pilot-van-program-worth-the-costs>

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