# THE TIME FOR MICROTRANSIT IS NOW

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Years ago, fanciful notions of flying cars and personal jetpacks were perhaps the earliest examples of microtransit. Today, things are a bit more grounded; and more flexible ways to travel beyond fixed routes and schedules are becoming part of modern transit systems. The perfect storm of technology, culture and economics is driving the transformation of demand-response transportation:

- App-powered transportation network companies (TNCs) like Uber and Lyft serving an "always on, constantly connected" populace
- Societal norms that place less importance on car ownership and have fueled the resurgence of city centers
- Socially conscious and often mandated commitments to sustainability and "green" choices
- Financial realities that preclude low wage earners from living within reasonable commuting distances from their jobs
- An economic climate that provides motivation for improving efficiency and lowering expenses for riders and municipalities alike

The time is right for microtransit. The need for more readily available transit options is undeniable. But, the conundrum of how to create viable public microtransit options presents a real challenge.

## The MicroTransit Simulator™

The key to success is data and using that data to create virtual simulations that portray the winning approach. The new MicroTransit Simulator from TransLoc presents "what if" scenarios that can be vetted before putting a single vehicle on the road. Examining microtransit demand and service options via customized computer simulation (in silico) offers unprecedented visibility to predict and plan with a whole new degree of confidence.

Recently, transit leaders in a city with a population of approximately 110,000 ran a simulation to determine how best to serve off-peak riders who needed to travel to medical appointments outside the city. The data variables used for this actual simulation included all combinations of 50/100/300 trips during an 11-hour service period using a range of 1/2/4/6/10 vehicles. Six of the fifteen total scenarios met feasible performance parameters (shown in the table on the right). The MicroTransit Simulator helped eliminate all the risk and guesswork by providing answers to the transit agency's core questions:

| What will the rider experience (such as wait and ride times) be with this service? | 2-minute wait times. 17-min avg ride time. |
|---|---|
| Which locales and how many rides can we serve with a given number of vehicles? | 2 vehicles in service (the map would be modified to show locations). |
| If the demand is twice what we anticipate, what would that mean in terms of rider experience? | 10-minute wait times. 24-min avg ride time. |
| How many vehicles would have to be added to serve twice the demand while maintaining service quality? | 4 vehicles (complete data set provided). |
| Would that increase our cost per trip? | No. The cost per trip would remain the same ($28). |
| What is the relationship between service quality and service cost? | Simulation data show that increasing ride-pooling can positively impact the inverse relationship between service quality and cost—increasing capacity, efficiently using 6 vehicles. |

*Performance parameters from a recent MicroTransit Simulation:*

| # OF TRIPS | # OF VEHICLES | HRS OF SERVICE | RIDES PER HR. PER VEHICLE | AVG. WAIT TIME (MIN) | AVG. RIDE TIME (MIN) | COST PER TRIP ($) | RIDE POOLING (%) |
|---|---|---|---|---|---|---|---|
| 50 | 2 | 11 | 2.3 | 2 | 17 | 28 | 25 |
| 100 | 2 | 11 | 4.5 | 10 | 24 | 14 | 41 |
| 100 | 4 | 11 | 2.3 | 2 | 15 | 28 | 20 |
| 100 | 6 | 11 | 1.5 | 0 | 15 | 43 | 15 |
| 300 | 6 | 11 | 4.5 | 8 | 23 | 14 | 40 |
| 300 | 10 | 11 | 2.7 | 2 | 16 | 24 | 25 |

Note:
- Ride pooling represents the percent reduction in number of vehicle stops due to pooling of rides
- Cost per trip is based on $65 per vehicle hour

## Keeping Transit Agencies in the Driver's Seat

It is important to keep in mind that only municipal transit agencies are best positioned to fully enable the future of demand-response transportation. As government entities, they have the specific mission and public mandate to serve the transportation needs of their entire community. This includes those members of the community that do not meet the customer criteria for TNCs—who incidentally are big consumers of public transit. Regardless of new technologies, new services and all kinds of hybrid offerings, transit agencies need to take their rightful place at the center of the new world order in public transportation, and establish themselves as the driving force behind innovation and meaningful change. Applying big data predictive modeling through simulations represents a breakthrough in getting it right the first time.

## About TransLoc, Inc.

TransLoc is the technology provider of the most flexible agency-owned demand-response transit solutions. The MicroTransit Simulator™ from TransLoc empowers transit agencies with predictive models that simulate rider demand and fleet operations, as well as the expertise to plan and deliver the optimal microtransit solutions to meet the unique needs of each community. A leader in public transit technology since 2004, TransLoc enables agencies to test drive the right solutions before putting a single vehicle on the road. From simulations and risk-free pilots to actual deployments, TransLoc is here to help your agency deliver the ultimate rider experience.