



Commingling 101:

How to integrate microtransit with paratransit.



As transit agency leaders and operators know well, the mission of a successful paratransit program is to provide equal access to mobility for every eligible rider as efficiently as possible. Even with sophisticated routing software, a well-maintained fleet, quick reservationists, and compassionate, well-trained drivers, challenges still arise every day such as traffic jams, driver call-outs, and same-day rider requests for updated trip information (i.e. “where’s my ride?”). **Operational flexibility is key to delivering successful paratransit**, and transit agencies are keener than ever to explore new approaches to help their operations staff respond to real-time events and deliver a quality rider experience more in line with on-demand services that have grown in popularity for the general public.

Modern TransitTech, like routing algorithms that adjust to traffic conditions and are able to re-optimize passengers trips, can facilitate this flexibility, but the high complexity and tight regulatory environment of paratransit operations has made agencies understandably cautious when it comes to adoption. Nevertheless, paratransit providers across the US are successfully replacing their legacy software and implementing new solutions that include key features — such as same-day or on-demand trips, continuous re-optimization, app- or web-based booking, and multi-use or “commingled” fleets — while maintaining ADA compliance.

In this guide, we focus on one example of a new, technology-enabled trend in paratransit: the commingling of ADA paratransit with other demand-responsive transit programs to improve quality of service and reduce operational costs. Though some agencies have implemented versions of commingling for years — utilizing the same vehicles, or the same staff, for paratransit and dial-a-ride services — the rise of on-demand or “microtransit” technology has opened up new possibilities for greater efficiencies and improved quality of service.

Read on to learn:

- **The primary benefits — and limitations — of commingling.**
- **The different forms commingling can take, and the key factors and best practices to consider for each.**
- **Guidance on selecting the right technology partner to implement a commingled service.**



What is commingling?

“Commingling” is a deceptively simple concept with often outsized promises: run an ADA paratransit service in conjunction with a non-ADA demand-response service — anything from traditional dial-a-ride to app-based microtransit — and share resources to improve quality of service and reduce costs. But commingling neither reflects a single operational strategy, nor functions as a cure-all for inefficient paratransit service. When looking to implement commingled service, agencies should seek to understand the exact benefits — and limitations — of commingling in their contemplated use case.

Commingling has two primary benefits for paratransit riders and the agencies:

Improved service experience

Commingled services can offer paratransit riders several concrete benefits:

- More booking flexibility with spontaneous same-day, on-demand trips available through the accessible microtransit service.
- Reduced perception and/or stigma of “separate” service with paratransit and microtransit service operating under the same brand.
- Opportunity for travel training for microtransit and other app-based services in a familiar, low-stress environment.

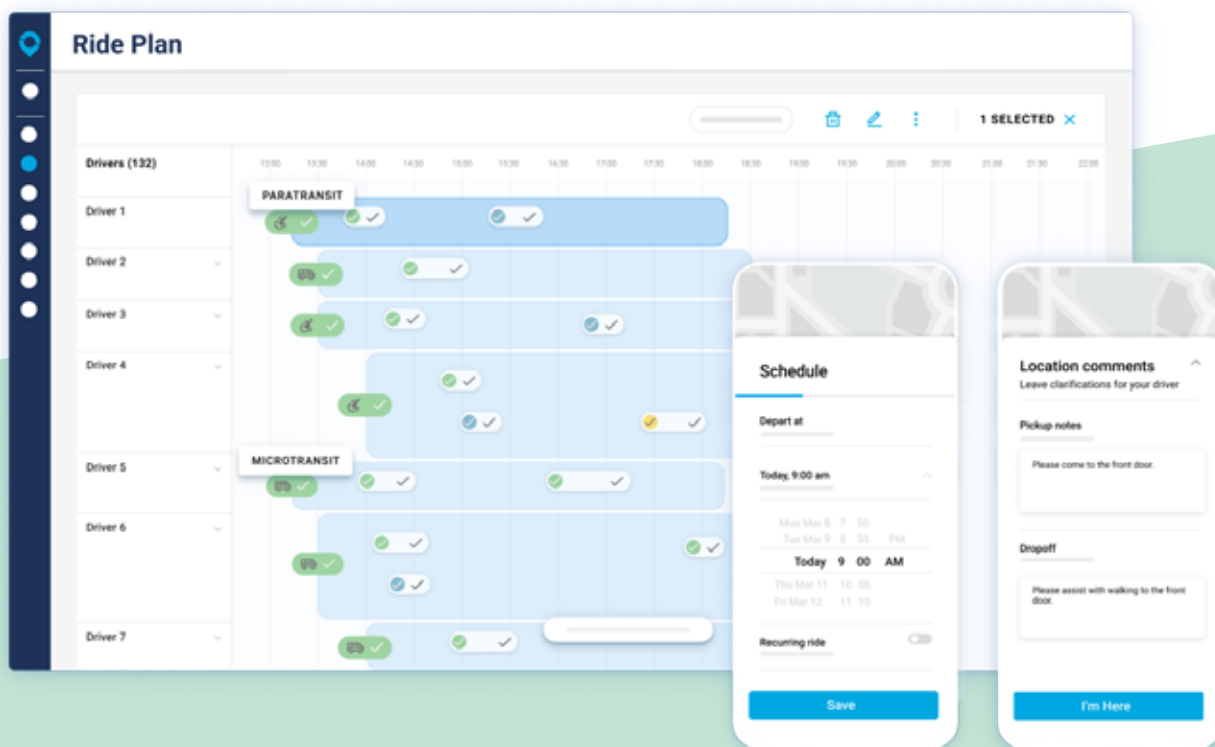
Lowered cost per trip

Commingled services can lower the average cost per trip of paratransit service in a few ways:

- Offering paratransit riders accessible microtransit trips when available at a lower cost to the agency.
- Increasing overall vehicle utilization by slotting on-demand microtransit trips into available space on paratransit vehicles.
- Combining support resources — customer support agents, reservationists, mechanics — for both services within combined management software.

Though a powerful strategy, commingling cannot improve a paratransit system all on its own. Commingling delivers the best results when these fundamental best practices for paratransit and microtransit are already in place:

- Paratransit booking, routing, and dispatching software maximizes vehicle utilization, even in the absence of commingled microtransit trips.
- Demand-response or microtransit software offers dynamic ride assignments and automated re-booking or re-routing.
- Drivers are trained to provide high-quality service to both microtransit and paratransit riders.
- App- or web-based booking systems are accessible, compliant with Section 508 or WCAG standards.





How does commingling work?

Commingling can take **three main forms**, each with distinct benefits for agencies. Below, find a summary of each model, an example of that model in action, and the key factors agencies should consider when implementing each type of commingling.



Option 1: Commingled fleets

Paratransit and demand-response services share the same fleet of vehicles. While an individual vehicle will only operate as paratransit or demand-response during a given driver shift, the proportion of vehicles assigned to paratransit and microtransit can change depending on demand.



Green Bay Metro
Green Bay, Wisconsin

Partnering with Via for both technology and operations, Green Bay Metro (GBM) now offers ADA paratransit and microtransit with the same fleet of accessible vehicles. Green Bay relaunched its paratransit service with Via in March of 2020, and soon faced a new challenge in the form of declining fixed route ridership as a result of the COVID-19 pandemic. By August 2020, the agency had leveraged its spare paratransit vehicles to launch a cost-effective microtransit service in place of its hardest hit bus routes.

The commingled fleet has performed well since launch, delivering 98% of trips on time — a 7% improvement over the previous operator. After being negatively impacted by COVID in 2020, utilization improved in 2021 and has returned to pre-pandemic levels. At the same time, GBM is delivering a new on-demand service — critical for providing flexible mobility during COVID-19 and beyond — without investing in new vehicles, software, or changing its existing management structure. Reservationists, support agents, drivers, and mechanics are shared freely between the services and coordinate with each other through the Via platform, reducing overhead for each service.

Key considerations:

- Vehicles are optimized for both paratransit and microtransit, with sufficient wheelchair capacity and multiple ambulatory seats to facilitate high utilization.
- Service branding is unified such that vehicles are easily identifiable to both paratransit and microtransit riders.
- By analyzing pre-booked paratransit trips, sophisticated routing and dispatch software can optimize the number of shifts designated for paratransit and microtransit on a daily basis.
- Software facilitates smooth coordination with drivers, so that each driver knows at the beginning of their shift which service they will be operating. Agencies can also consider implementing a tiered driver system where only more qualified drivers take ADA paratransit shifts.



Option 2: Commingled shifts

Paratransit and microtransit riders are not only served by the same vehicles, but during the same driver shifts. A dispatch algorithm optimizes these shifts for efficiency, slotting on-demand microtransit rides in between pre-booked paratransit rides, but does not assign microtransit riders and paratransit riders to share a vehicle at the same time.



High Valley Transit

Summit County, Utah

In May 2021, Summit County, a mountainous region near Park City, Utah, embarked on a bold new endeavor: launching its own transit agency, High Valley Transit, from scratch. With fixed route and paratransit services previously provided by neighboring Park City Transit, High Valley Transit partnered with Via to redesign its existing network and add a new microtransit service to fill gaps in the system. To increase utilization across the network, drivers of accessible vehicles pick up microtransit and paratransit riders within the same shift, allowing for greater aggregation by slotting route-compatible on-demand trips in between pre-scheduled paratransit trips.

The results have been striking: within three months of launch, ridership of the combined service quickly grew to three times even the pre-COVID paratransit ridership. Even better, utilization improved by more than 150%, representing a considerably more efficient service delivering more rides within an integrated demand-responsive transit network. This efficiency has come while maintaining quality of service: even as drivers transported more passengers per hour on commingled shifts, trip duration was comparable (at around ~11 minutes) to microtransit-only service.



Utah Transit Authority

Salt Lake County, Utah

In and around Salt Lake City, UTA oversees a complex network of transit options: light and commuter rail services, fixed-route bus services, on-demand microtransit zones, and complementary ADA paratransit. In addition, for riders with disabilities who live outside the ADA paratransit service area, UTA offers shuttle service to hubs where they can be picked up by the ADA service. In August of 2021, UTA began commingling this shuttle service with UTA On Demand, the Via-powered microtransit service, to deliver accessible transit with higher overall efficiency.

During commingled driver shifts, microtransit riders are booked on-demand in between pre-scheduled paratransit trips. The results have been highly encouraging: drivers working commingled shifts spent twice as much time transporting passengers than drivers working single-service shifts. And quality of service, as measured by time on board, remained comparable at ~13 minutes for both kinds of shifts.

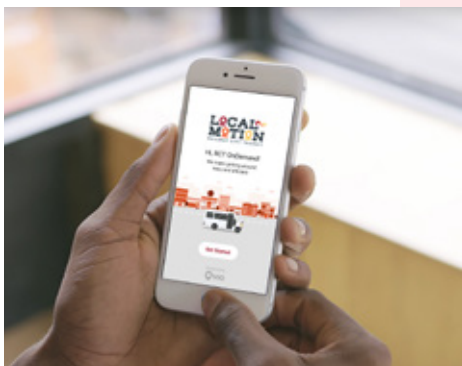
Key considerations:

- The driver app is able to support unique trip types, communicate whether an upcoming pickup is a paratransit or microtransit rider, and indicate whether the rider has any special needs or requires boarding assistance.
- Routing and dispatch software is able to dynamically book on-demand trips into gaps between already-optimized, pre-booked paratransit trips, to ensure that ADA requirements are met. "Pre-scheduled" trips, assigned to vehicles near the requested pickup time, are often insufficient for meeting strict on-time-percentage (OTP) requirements.
- The agency ensures that all drivers in its pool are trained to provide high-quality paratransit service and microtransit service.



Option 3: Commingled trips

Paratransit and demand-response riders can be scheduled and grouped together on the same vehicle at the same time.



Railway City Transit On-Demand

St. Thomas, Ontario, Canada

Introduced as a part of a comprehensive network redesign, the City of St. Thomas launched Railway City Transit (RCT) On-Demand to complement its redrawn fixed routes. Integral to the appeal and feasibility of on-demand was the City's plan to commingle trips with its existing accessible parallel transit service. Leveraging Via's flexible booking and routing technology, riders can book available seats on vehicles already engaged in paratransit trips headed in the same direction — all while ensuring that pre-booked paratransit trips are completed on-time and with minimal time on board.

With commingled trips in place, utilization has improved by nearly 70% and ridership has almost doubled — reflecting increased efficiency and a return to transit after the acute phase of the COVID-19 pandemic. Importantly, parallel transit customers continue to make up two thirds of total riders, meaning that St. Thomas is fulfilling its mission to provide accessible transit while achieving efficiency gains by bringing on-demand riders into the same vehicles.

Key considerations:

- The agency determines and implements a method for ensuring paratransit riders have guaranteed trips. This can involve allowing paratransit riders to pre-book, but requiring that microtransit riders book on-demand, or ensuring that there is a dedicated provider available to handle overflow.
- The agency prioritizes communication with both paratransit and microtransit riders to set expectations: for example, letting paratransit riders know that their trip may briefly stop to pick up a microtransit rider, and letting microtransit riders know that paratransit riders may require additional assistance from drivers or longer boarding times.
- The agency considers how to use commingled trips as an opportunity for travel training for paratransit riders, who may prefer the flexibility of on-demand trips but be wary of unfamiliar drivers or non-dedicated service.

How to get started.

Though introducing commingling can be an effective method for improving customer experience and reducing cost-per-trip, the operational complexity can be daunting. Agencies often find themselves asking three main questions:

- 1 How do I know if commingling is right for my paratransit service?
- 2 How do I select a commingling model?
- 3 How do I select a technology partner for my commingled service?

The short answer is that like any transit system, a commingled paratransit/microtransit service is never “one-size-fits-all.” Below, find guidance on how to work through each question.



How do I know if commingling is right for my paratransit service?

A version of commingled service can work well for any agency, but particularly in the following situations:

1 An accessible, popular, high-utilization microtransit service is already available in the area.

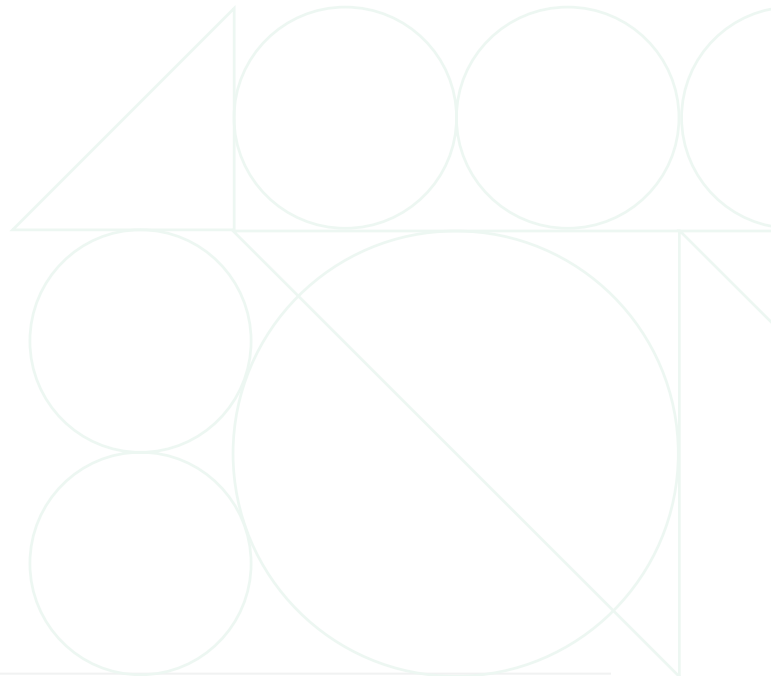
If your agency, city government, or other entity is already operating a microtransit service with good efficiency, leveraging its resources to improve paratransit efficiency can be the natural next step. If the service is not already accessible, retrofitting some of the vehicles will be worth the investment.

2 A low overall number of paratransit trips are booked within a large zone, with limited fixed route public transit.

High utilization is difficult to achieve with low, diffuse ridership, contributing to high cost-per-trip. If the region lacks robust public transit, introducing a microtransit service can improve quality of service for both paratransit riders and the general public.

3 An underutilized ADA paratransit system has additional vehicles and drivers available for a new service.

Accessible, agency-branded vehicles and fully-trained paratransit drivers are an asset that can be leveraged to provide additional trips to the general public while retaining the ability to serve paratransit riders on the same shifts, or even within the same trips.



How do I select a commingling model?

Selecting the right model is critical both for the potential economic impact of the service and its adoption by riders. At the same time, it can be difficult to know in advance which model will be right for your riders, drivers, and administrative staff. Even relatively basic questions such as estimating the anticipated microtransit demand in a proposed new zone can be tricky to answer, though more tools and support, like [Remix On Demand Planning](#), are available than in the past.

Extensive consultations between your agency, your stakeholders, and your selected technology provider are recommended before reaching a decision on a commingling model. Many agencies choose to take a phased approach, starting with a shared fleet — administered through a shared technology suite — and carefully testing the impacts of shared shifts and shared trips before implementing these more highly-integrated models. Crucially, your chosen technology partner must be able to assist with, or even lead, this testing process, in order to help design a customized commingled service that is the most responsive to your agency's needs.

How do I select a technology partner for my commingled service?

A complicated operational model requires an **experienced technology partner** to ensure successful implementation. Even more importantly, given how uniquely tailored each commingled service must be to local conditions, your technology partner must be **flexible** and able to adapt and optimize the service as initial results and reactions come in.

During the procurement process — whether you start with an RFI, go straight to an RFP, or interview several firms for a potential sole-source — it is critical to get beneath the surface marketing materials and determine the following:

Experience

- **Can their technology actually implement every model of commingling we are considering?**
 - Does it allow both pre-booked and on-demand trips, for example?
 - Does it facilitate efficient messaging between reservationists, dispatchers, drivers, and riders?
 - Is it proven to improve aggregation and utilization, in microtransit and paratransit services separately and as commingled services?



- **Are they experienced at implementing every model of commingling that my agency is considering? Interrogate promotional materials by asking:**
 - What models of commingling are actually represented?
 - How many independent microtransit and paratransit services has the company launched, and how many commingled?
 - On what scale are these types of services implemented? How many rides per day, and what proportion paratransit and microtransit — and does this match my area’s demand level?
- **Can they support the service both technically and operationally on a long-term basis?**
 - Do they offer high-quality service design and/or consulting services to scope the commingled launch?
 - Do they provide marketing and community outreach support to assist with rider messaging? Is their experience paratransit-specific?
 - What long-term support guarantees are made, and how is this support delivered? By a personal representative, or a helpline?

How do commingled services evolve?

There is no reason why an agency must commit to one form of commingling forever. Indeed, an advantage of selecting the right technology partner is the ability to analyze service results and make appropriate changes as needed, without going out to procurement once again.



Option 4: Evolving commingled service

Agencies launch a service with commingled fleets or shifts, and then pursue further commingling of shifts or trips in an effort to further increase efficiency.



Golden Empire Transit

Bakersfield, California

GET operates three types of demand-responsive services in overlapping zones: on-demand microtransit, paratransit, and non-emergency medical transport (NEMT). For years, the agency contracted with different software providers and operated separate call centers to run these services. In late 2020, they embarked on a phased launch of all three services with Via, under the same technological umbrella.

At first, the services leveraged the same accessible fleet, the same scheduling and routing software, and the same dispatchers and reservationists. This degree of commingling had a significant impact on dispatching efficiency, with an overall reduction in call times, freeing up staff for more tasks requiring human intervention. And the integrated call center made microtransit an appealing option for paratransit-eligible riders, who have taken 9% of all microtransit trips.

In late 2021, the agency began to explore a new commingling model: fully commingled shifts, with drivers available to take any type of rider within a given shift. Though trips themselves are not commingled — a microtransit rider won't be onboard at the same time as an NEMT rider, for example — the service has still seen a dramatic increase in utilization of 60%. Via and GET continue to work together to refine the commingling model to best suit their passengers' needs.

Key considerations:

- Does the software provider have operationally experienced personnel available to analyze and, if necessary, make changes to the service zone, parameters, or model?
- Will their technology allow us to change our commingling model as needed? For example, if we want to switch from commingled shifts to commingled trips, can they support that? And how easy will it be to make the switch?
- Do they have a track record of growing and evolving services, in microtransit, paratransit, or both? How many long-term partners do they have?

Want to learn more about Via's paratransit solution?
Don't be a stranger! Visit ridewithvia.com/solutions

And reach out to Yannis Simaiakis, General Manager of Paratransit at Via!



Chris Campbell

Director of Paratransit Partnerships | Via

✉ chris.campbell@ridewithvia.com

☎ (404) 493-6276