

# Commingling Paratransit and Other Trips in On-Demand Microtransit



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# Agenda

- Defining the Study
- Survey Results
- Case Examples
- Key Findings



Source: <https://www.rideco.com/post/commingling-service-model>

# Note on the Project

The findings in this presentation are based on research completed for TCRP Synthesis J-07/Topic SB-42: *Operational and Service Factors When Integrating/Consolidating ADA Paratransit and On-Demand Services*.

Mr. Hansen was the principal investigator (PI) for this synthesis project while working at the Texas A&M Transportation Institute.

Additional project team members: Will Rodman, Mahrokh Amiri, Suzie Edrington, Jarrod Butts

# Paratransit

- U.S. transit agencies providing fixed-route transit services are obligated to also provide ADA complementary paratransit to persons with disabilities who are unable to use or access the available fixed-route transit service
- For the project, the term “paratransit” service also includes other types of coordinated or sponsored paratransit trips:
  - Human service agency sponsored trips (such as Medicaid non-emergency medical transportation a.k.a. NEMT trips).
  - Trips/programs for older adults

# Microtransit

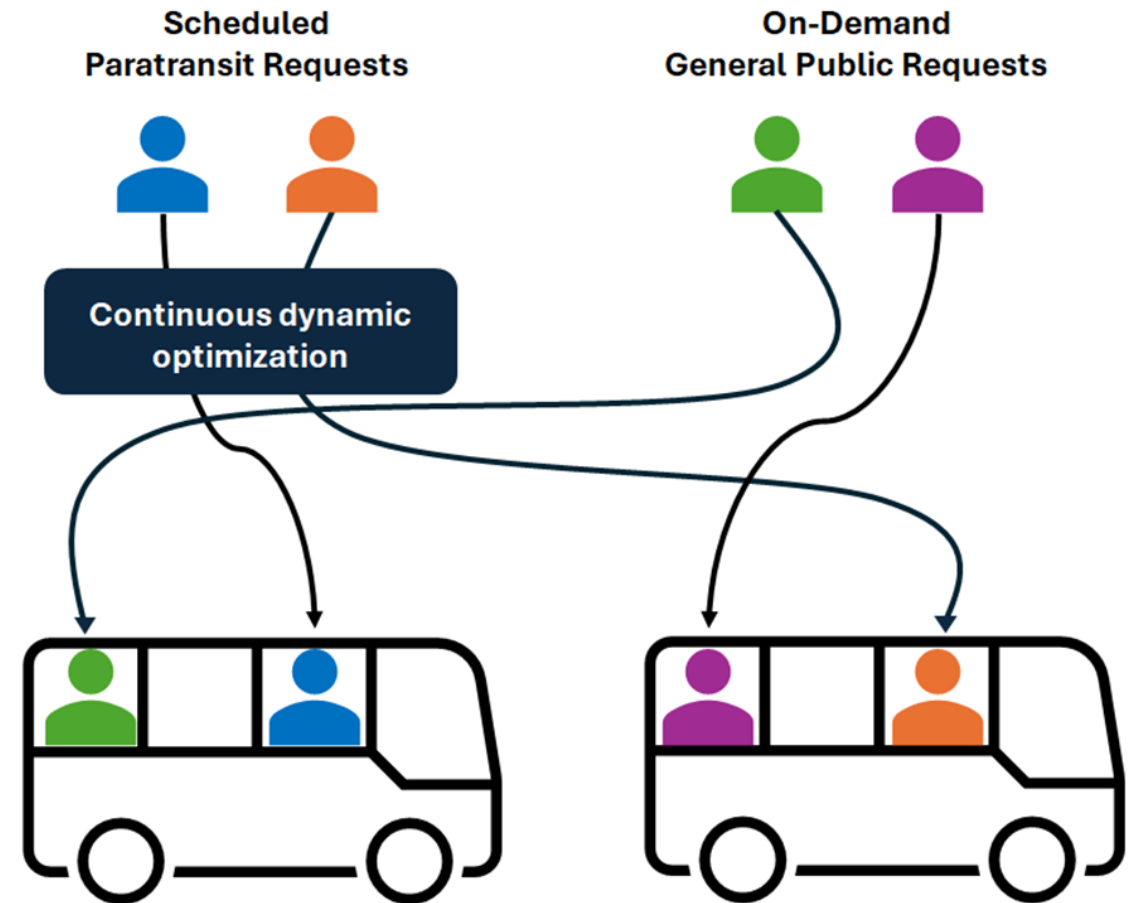
- Allows customers to request trips on an immediate fulfillment basis
- Microtransit service zones have been implemented in a variety of suburban, exurban, small town, and rural settings
- Service is typically available to the general public (or an otherwise specified eligible customer group)
- Zone sizes can vary widely
  - Smaller targeted zones (e.g., 3-7 square miles)
  - City or county-wide zone areas
- Different models available:
  - Directly operated
  - Turnkey
  - NDSPs as overflow



Source: <https://www.butlercountyrta.com/bgo-curb-to-curb/bgo/>

# Commingling in Microtransit

- Research scope was primarily concerned with commingled trips
  - Serving multiple trip types in the same vehicle(s)
  - Can be done with same software platform or separately
- Technology platform is tasked with tracking on-demand and pre-scheduled trip requests
  - Specific parameters by trip
  - Continuous dynamic optimization (CDO)
- Helps increase efficiency of demand response service
  - Increase in shared rides drives up productivity
  - Lowers the cost per trip
- Must be able to track specific service data by type



Adapted from: <https://sparelabs.com/en/blog/paratransit-change-management-webinar-takeaways>

# Key Definitions

- **Commingled trips:** Two trip types (e.g., ADA/coordinated paratransit with general public) are served at the same time on the same vehicle rather than transporting these different trip types with separate vehicles.
- **Consolidated service:** One uniform fleet (using the same vehicle type for the entire fleet), one set of drivers (all ADA paratransit-certified), and the same scheduling software is used to serve both ADA paratransit and microtransit service.
- **Integrated service:** Services use either different vehicle fleets, different sets of drivers, and/or different software platforms from each other, but some trips are commingled together.
- **On-demand:** Customers can request trips on the same-day of service for immediate fulfillment (a vehicle will be dispatched to them for pick-up once the request is confirmed)
  - Sometimes used for near-immediate fulfillment service as well (e.g., within one-to-two hours of the confirmed request)

# ADA Compliance

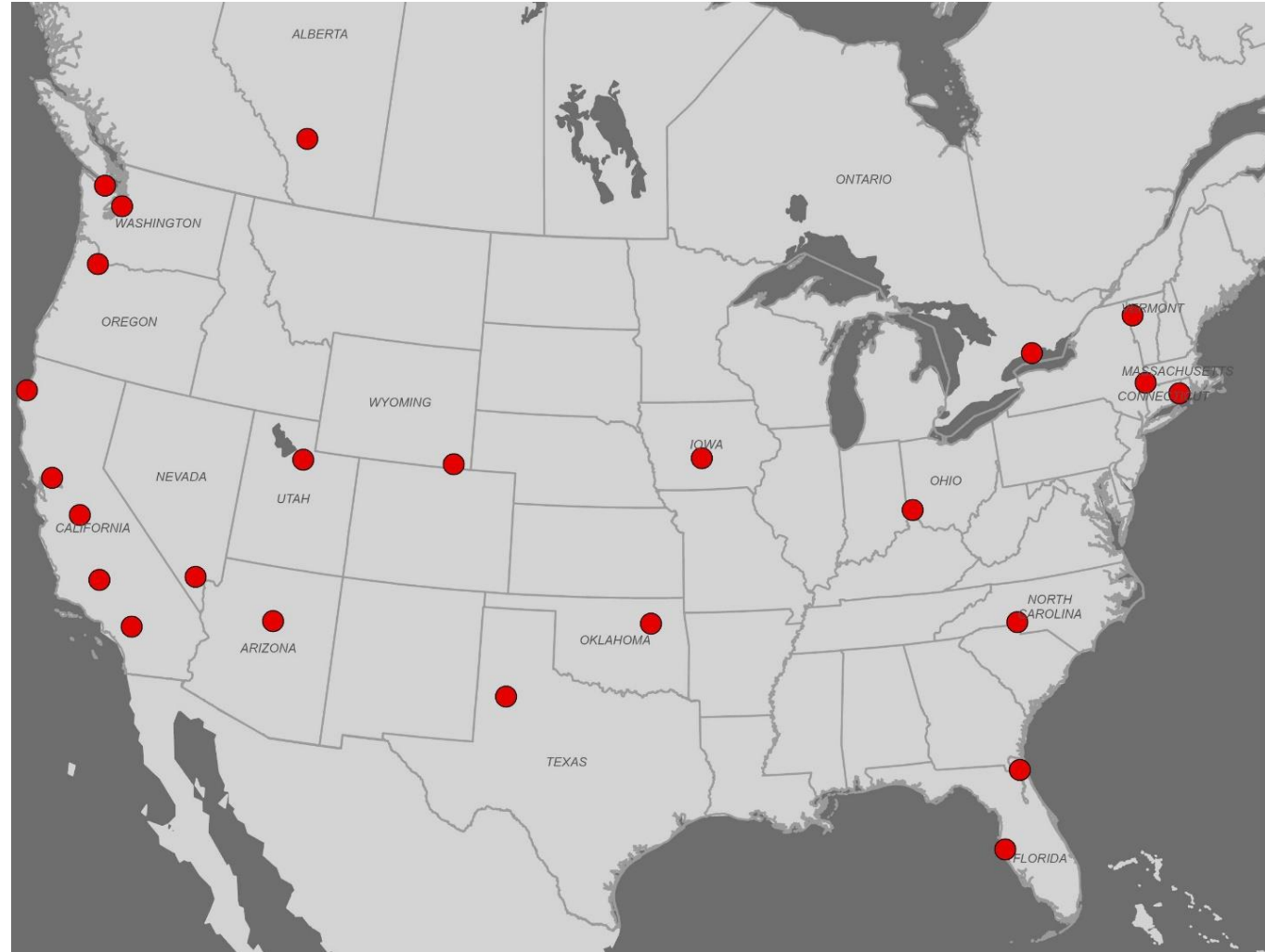
- ADA is civil rights legislation with regulatory requirements that must be met for ADA complementary paratransit service
  - Ensuring ADA requirements are met, prioritize paratransit trips
  - Service and operating parameters must be adhered to by the transit agency regardless of how the trips are delivered
- One of the key requirements for any DRT service is service equivalence
  - Providing the same level of service according to seven criteria
- ADA paratransit services cannot be capacity constrained
  - Guard against longer travel times, trip request denials, etc.
- General public microtransit trips do not carry ADA complementary paratransit requirements

# Survey Results

- 24 survey respondents
- 18 responses with commingling

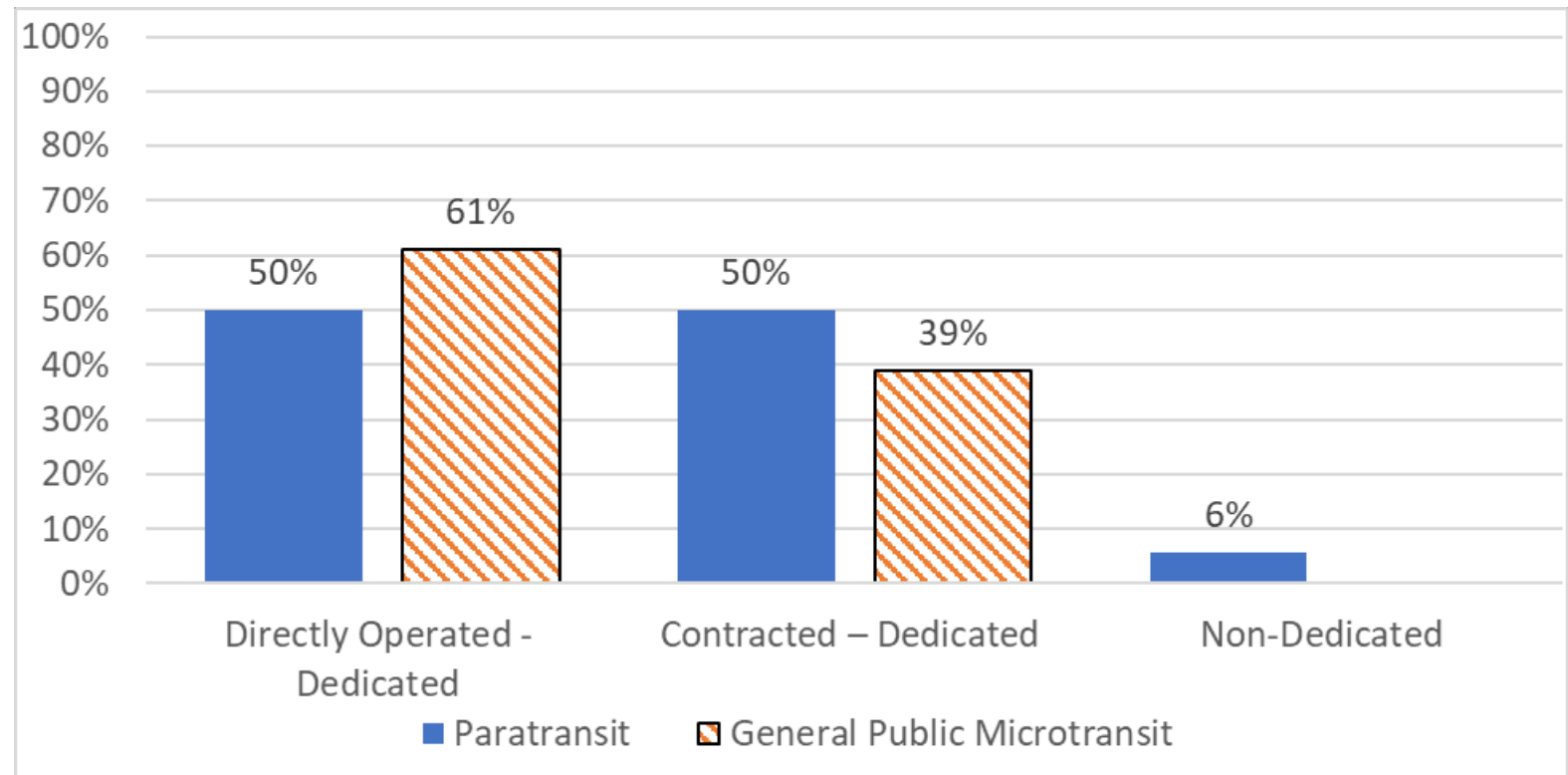
## Survey Sections:

- Service design, policies, and parameters
- Booking, scheduling, and communication
- Customer considerations and accommodations
- Fleet mixture and dispatching
- Benefits and impacts
- Lessons learned and challenges
- Further participant information



# Survey – Service Models

- Consolidated services were the majority (11 respondents)
- Integrated services (7):
  - 4 used different sets of vehicles
  - 3 used different sets of drivers
  - 2 used different software platforms
- Mostly directly operated and contracted dedicated services



# Survey – Roles and Responsibilities

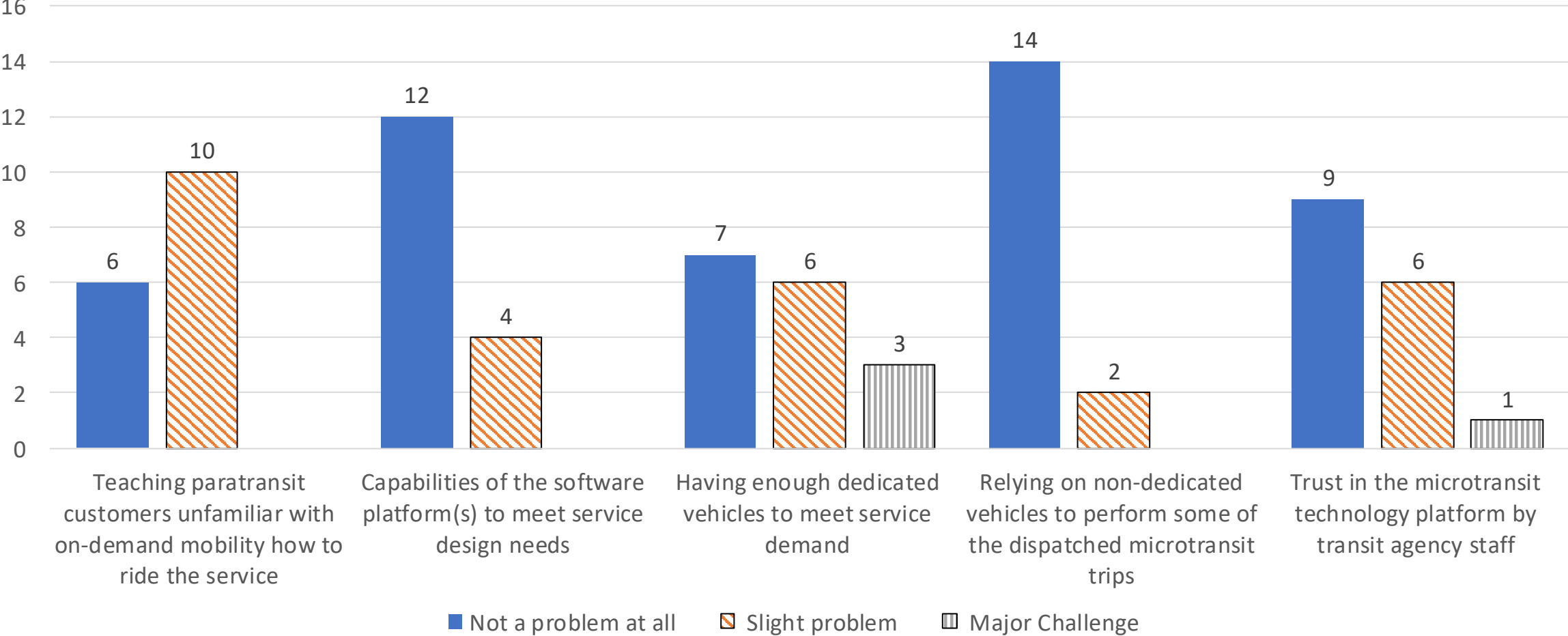
Contracted – Dedicated	Non-Dedicated
<ul style="list-style-type: none"><li>• Reservations (8 respondents)</li><li>• Scheduling (8)</li><li>• Dispatching (9)</li><li>• Call and control center (handling customer calls) (8)</li><li>• Vehicles provision (3)</li><li>• Vehicle maintenance (6)</li><li>• Vehicle operators (8)</li><li>• Other (driver hiring) (1)</li></ul>	<ul style="list-style-type: none"><li>• Vehicle provision (1)</li><li>• Vehicle maintenance (1)</li><li>• Vehicle operators (1)</li></ul>

Software platform companies named included RideCo, Routematch, The Routing Company, Spare Labs, Trapeze, TripShot, and Via


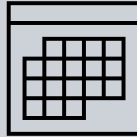



# Survey – Commingling Decisions

- Majority (11) from the relevant set of respondents commingle all trips together
- Exceptions:
  - Based on available capacity in dedicated vehicles (6)
  - Trips that do not require additional assistance (1)
  - Certain destinations (1)
  - Rider compatibility concerns (1)
- Review of software’s commingling decisions:
  - No review (11)
  - Automated, then checked (7) – some monitored in real-time (4)
- Most (14) apply CDO on paratransit trips
  - Others depend on the specific trip and/or customer type

# Survey – Lessons Learned and Challenges



# Case Example Overview – Airdrie Transit

Hello-to-Go – Integrated	
<b>Priority Trip Types:</b> <ul style="list-style-type: none"> <li>Persons with Disabilities</li> </ul> 	<b>Scheduling:</b> <ul style="list-style-type: none"> <li>Pre-booked</li> <li>Same day as available</li> </ul> 
<b>Other Trips Served:</b> <ul style="list-style-type: none"> <li>General Public (advance reservations and same-day)</li> </ul>	
<b>Non-Commingled Trips or Special Circumstances:</b> <ul style="list-style-type: none"> <li>Medical Trips</li> </ul>	
<b>CDO:</b> <ul style="list-style-type: none"> <li>Applied at all times</li> </ul> 	<b>Anchored Times:</b> <ul style="list-style-type: none"> <li>n/a</li> </ul>
<b>Mixed Fleet:</b> Cutaways (all WAVs), Minivans (some WAVs), Non-dedicated providers	
<b>Booked Directly:</b> <ul style="list-style-type: none"> <li>Persons with Disabilities</li> <li>General Public</li> </ul> 	<b>Booked Manually:</b> <ul style="list-style-type: none"> <li>n/a</li> </ul>
<b>User Profiles:</b> <ul style="list-style-type: none"> <li>One profile and system</li> </ul> 	



## Key Challenges

- Same-day availability
- Additional companions

## Notable Practices

- Published virtual stops
- NDSPs for long trips
  - i.e., medical trips to Calgary

## Lessons Learned

- Profile set-up
- Service constraints
  - Not cannibalizing fixed-routes

# Case Example Overview – Great Barrington

## TriTown Connector – Consolidated

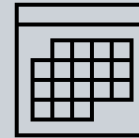
### Priority Trip Types:

- Older Adults
- Persons with Disabilities



### Scheduling:

- Pre-booked
- Same day as available



### Other Trips Served:

- General Public (same-day capacity only)

### Non-Commingled Trips or Special Circumstances:

- n/a

### CDO:

- Applied at all times



### Anchored Times:

- n/a

**Mixed Fleet:** Cutaways (all WAVs), Minivans (some WAVs), SUVs (no WAVs)

### Booked Directly:

- Older Adults
- Persons with Disabilities
- General Public



### Booked Manually:

- n/a

### User Profiles:

- One profile and system



## Key Challenges

- Driver availability
- Continual funding


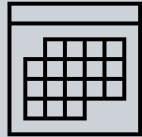





## Notable Practices

- Hybrid stop types
- Partner web portal access
  - E.g., ER rooms, service orgs.

## Lessons Learned

- Vehicle supply
- Prioritized rider groups
  - Hard to serve GP trips

# Case Example Overview – Butler County RTA

BGo Service – Consolidated	
<b>Priority Trip Types:</b> <ul style="list-style-type: none"> <li>• ADA Paratransit</li> <li>• Veterans (Contracted)</li> </ul> 	<b>Scheduling:</b> <ul style="list-style-type: none"> <li>- Pre-booked</li> <li>- Same day as available</li> </ul> 
<b>Other Trips Served:</b> <ul style="list-style-type: none"> <li>• General Public</li> <li>• SafeRide (Sponsored)</li> </ul>	Same-day capacity only
<b>Non-Commingled Trips or Special Circumstances:</b> n/a	
<b>CDO:</b> <ul style="list-style-type: none"> <li>• Applied at all times</li> </ul> 	<b>Anchored Times:</b> <ul style="list-style-type: none"> <li>• ADA Paratransit (P)</li> <li>• Veterans (P)</li> </ul> 
<b>Mixed Fleet:</b> Cutaway buses (all WAVs), Minivans (all WAVs)	
<b>Booked Directly:</b> <ul style="list-style-type: none"> <li>• ADA Paratransit</li> <li>• General Public</li> <li>• SafeRide (Sponsored)</li> </ul> 	<b>Booked Manually:</b> <ul style="list-style-type: none"> <li>• ADA Veterans</li> </ul> 
<b>User Profiles:</b> <ul style="list-style-type: none"> <li>• Single/Combined</li> </ul> 	



## Key Challenges

- Meeting demand
- Software integrations

## Notable Practices

- United profile
- Uniform pick-up windows
  - Streamlining messaging

## Lessons Learned

- Report development
  - Canned report for NTD
- Rider compatibility

# Findings – Service Design and Parameters

- Microtransit software platforms are capable of handling the parameters for multiple services in scheduling commingled trips together
- Many agencies prioritize available capacity to pre-scheduled paratransit trips first
  - May not have much day-of-service capacity remaining
- Expansive zones will can strain available capacity
- Starting small in a pilot can be useful when service demand is uncertain

# Findings – Fleet Mixture and Dispatching

- Agencies may use either uniform fleets composed with all WAVs or a mixture of vehicle types in the dedicated fleet
- NDSPs can be used for overflow trips or specific trip types
  - Automatic software settings or manual interventions
  - Branding and appearance are considerations
- Power or network outages will affect functionality of CDO in software platforms
- Need to plan for adequate spare ratios for dedicated fleets

# Findings – Commingling Processes

- Different approaches on the types of trips commingled
- Variety of considerations for not commingling certain trips
  - Specific accommodation needs
  - Mobility aids
  - Driver assistance
  - Appointments
  - Travel distance
- Applying CDO in all cases creates the most service efficiency
- Most agencies use the one software platform
  - Multiple platforms may help prioritize ADA paratransit management considerations

# Thank You!



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# Case Example Overview – TriMet

## TriMet Microtransit Service (future) – Integrated

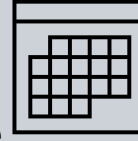
### Priority Trip Types:

- ADA Paratransit
- Contracted



### Scheduling:

- Pre-booked
- Same day as available



**Other Trips Served:** General Public (same-day capacity only)

### Non-Commingled Trips or Special Circumstances:

- Contracted Trips; Hand-to-Hand trips

### CDO:

- Applied at all times



### Anchoring:

- ADA Paratransit (P & D)



**Mixed Fleet:** Cutaway buses (all WAVs), Minivans (all WAVs), Non-dedicated providers (some WAVs)

### Booked Directly:

- ADA Paratransit
- General Public



### Booked Manually:

- Contracted



### User Profiles:

- Separate Platforms



## Key Challenges

- Fare integration
- Information overload
  - Platform capabilities


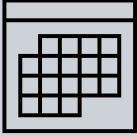





## Notable Practices

- Integrated software
- Customer accommodations
  - D2D for on-demand trips

## Lessons Learned

- Targeted service zone
- Commingling criteria

# Case Example Overview – Lubbock Citibus

On-Demand and CitiAccess – Consolidated	
<b>Priority Trip Types:</b> <ul style="list-style-type: none"> <li>• ADA Paratransit</li> <li>• Medicaid</li> </ul> 	<b>Scheduling:</b> <ul style="list-style-type: none"> <li>- Pre-booked only</li> </ul> 
<b>Other Trips Served:</b> <ul style="list-style-type: none"> <li>• General Public (same-day capacity only)</li> </ul>	
<b>Non-Commingled Trips or Special Circumstances:</b> n/a	
<b>CDO:</b> <ul style="list-style-type: none"> <li>• Applied at all times</li> </ul> 	<b>Anchoring:</b> n/a
<b>Mixed Fleet:</b> Cutaway buses (all WAVs), Minivans (all WAVs)	
<b>Booked Directly:</b> <ul style="list-style-type: none"> <li>• ADA Paratransit</li> <li>• General Public</li> </ul>  	<b>Booked Manually:</b> <ul style="list-style-type: none"> <li>• Medicaid</li> <li>• Will-call trips</li> </ul> 
<b>User Profiles:</b> <ul style="list-style-type: none"> <li>• Single/Combined</li> </ul> 	



## Key Challenges

- App integrations
- Demand growth

## Notable Practices

- App wallet
- Medicaid integration
  - Different trip parameters

## Lessons Learned

- Advance booking
- Required credentials
  - Drivers handling Medicaid