UTA Paratransit Forward Study

Task 3: Alternatives Analysis

University of Utah
Via Strategies

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Executive Summary

The Paratransit Forward Study, commissioned by the Utah Transit Authority (UTA), aims to evaluate and enhance the current state of UTA's paratransit services to better serve riders with disabilities. Currently, UTA provides Americans with Disability Act (ADA) paratransit service in full compliance with federal ADA laws and regulations. This service is available within a ¾-mile radius of existing bus routes and light rail stations, operates during the same hours as those fixed routes, and requires advance reservations. Task 3 of this study focuses on identifying key areas for improvement to create a more inclusive, accessible, and efficient paratransit system. By leveraging community feedback, stakeholder input, and data analysis, the study outlines a strategic framework that addresses both immediate and long-term needs, ensuring that UTA's paratransit services not only meet but exceed the ADA requirements.

The recommendations in this report are designed to bridge existing service gaps and improve the overall customer experience for paratransit users. A frequent request from riders and stakeholders is to accommodate trips within the UTA service district that fall outside the current ADA paratransit service area. The following alternatives explore potential solutions to address this need and extend service beyond existing boundaries. These enhancements include strategies for optimizing operational efficiency, reducing costs, and increasing rider satisfaction, all while promoting sustainable growth and adherence to UTA's strategic goals. Each opportunity discussed in the report offers a unique approach to meeting UTA's objectives of accessibility, efficiency, and sustainability. Together, these strategies offer a holistic framework for UTA to improve its paratransit services to meet the diverse needs of its riders. The alternatives outlined in the following sections go beyond current regulatory requirements, and therefore, would necessitate additional resources for implementation. It is important to note that these alternatives are presented as conceptual options, designed to inform UTA leadership, and would require further development and operational planning before implementation.

While the study outlines several cost-saving opportunities, it is important to note that these figures represent potential savings under ideal conditions. In reality, UTA's costs are influenced by fixed expenses, such as vehicle maintenance and staffing, which do not decrease on a per-trip basis. Achieving actual savings will require systemic changes, like optimizing fleet size and staffing levels. Moreover, each alternative was evaluated independently. Should UTA proceed with implementations of more than one alternative, the estimated impacts would likely be different. Further analysis is recommended to evaluate the estimated impacts of specific combinations of alternatives

Six main alternatives were evaluated:

1. Integrating Transportation Network Companies

One of the key opportunities identified in this study is the potential use of Transportation Network Companies (TNCs), such as Uber and Lyft, to provide same-day paratransit trips. It is important to note that offering same-day service is beyond the requirements of the ADA for complementary paratransit, which mandates next-day booking. Incorporating TNCs offers several advantages, including greater flexibility in trip scheduling, reduced wait times, and potential cost savings through dynamic pricing models. TNCs can enhance the scalability of paratransit services by utilizing their existing driver networks and platforms, which allows UTA to meet fluctuations in demand without the need for significant investment in additional vehicles or resources. This approach can also help address gaps in service availability, particularly in areas where traditional paratransit coverage is limited. To promote the use of TNCs among paratransit riders, UTA could consider various incentive programs, potentially offering benefits such as bonus trips, discounted fares, or other rewards for choosing this option.

The analysis evaluated three primary subsidy models to determine the most effective financial structure for TNC integration:

- **Fixed-based subsidy:** provides a fixed subsidy amount per trip, with any additional costs borne by the rider.
- **Distance-based subsidy:** fully subsidizes trips up to a certain distance (e.g., 10 miles), with riders covering any additional mileage costs.
- **Co-pay subsidy:** involves a fixed co-pay by riders, with UTA covering the remaining cost up to a predetermined maximum.

The project team used trip data from UTA's paratransit service and conducted a comparative cost analysis against estimated TNC costs, applying various fare models and considering real-world factors like surge pricing and trip distance. The study revealed the following key findings:

- Traditional paratransit services have a higher cost per trip, averaging $67 for a 10-mile journey, compared to TNCs, which range from $20 (without surge pricing) to $40 (with surge pricing).
- The co-pay subsidy model demonstrated the most significant cost savings, reducing UTA's expenditure by approximately $1.4 million in 2022, balancing affordability for riders with overall cost-effectiveness for UTA.
- Transitioning approximately 15% of paratransit trips (based on 2022 ridership data) to TNCs could result in cost savings, with the cost of providing these trips via TNCs being roughly one-quarter of the of the current paratransit expenses.

Should UTA proceed with TNC integration, there is potential to achieve significant financial savings while ensuring the service remains accessible and reliable for all paratransit users.

The project team also outlined several operational and administrative changes necessary to support TNC integration, such as adjusting service policies, setting clear eligibility criteria, and ensuring ADA compliance among TNC providers. These recommendations are further detailed in the Implementation section of this report. Cost estimates provided in the analysis include potential costs associated with these changes. Should UTA choose to move forward, collaboration with TNC vendors will be crucial to finalize the pricing, the implementation requirements, and the expected savings.

2. Expanding Paratransit Service Coverage

Another critical opportunity lies in expanding paratransit service coverage beyond the standard ADA-required ¾-mile boundary, presenting a strategic opportunity for UTA to enhance service accessibility and inclusivity. This initiative aims to serve more riders in underserved areas, improve customer satisfaction, and provide flexible service models that balance cost and coverage. However, expanding coverage also poses challenges related to operational costs, financial sustainability, and equitable service delivery.

Three primary scenarios were developed to explore different approaches for expanding paratransit service:

- **Scenario 1: Legacy Service Continuation**
  This scenario focuses on maintaining paratransit coverage in areas that would otherwise lose service due to future changes in the fixed-route network but still have residual demand. The approach maintains continuity of service for areas with ongoing customer usage while aligning with ADA compliance. The primary advantage of this scenario is its low operational complexity and cost-effectiveness, as it leverages existing infrastructure and does not require major service changes. However, its impact is limited to specific regions with historical ridership, potentially overlooking areas with emerging needs.
- **Scenario 2: 1-Mile (or More) Premium Expansion**
  This scenario proposes extending the paratransit service boundary by up to 2 miles beyond the current ADA limit. It aims to increase accessibility in suburban and rural areas that currently have limited paratransit coverage. A tiered fare structure would be introduced, charging higher fares for extended coverage zones. This approach provides broader geographic coverage and service options, balancing accessibility with revenue generation. However, it involves higher operational costs and requires clear communication about the new fare tiers and service boundaries.
- **Scenario 3: Paratransit Expansion into Innovative Mobility Zones**
  In this scenario, paratransit services are extended into existing or planned Innovative Mobility Zones (IMZs). This approach allows paratransit vehicles to enter and operate within these flexible zones, providing additional coverage beyond the standard boundary. The IMZ expansion leverages existing infrastructure while offering scalable, long-term savings. It provides more coverage options for riders in areas where traditional paratransit services are less effective.

The outcome of these proposed scenarios is closely tied to UTA's Five-Year Service Plan (FYSP) for 2025-2029, which serves as a strategic roadmap for service changes. Each scenario implicates specific elements of the FYSP, such as restoring services in areas with historical demand (Scenario 1) or expanding coverage through new routes and IMZs (Scenarios 2 and 3). At the time of this study's analysis, the FYSP phasing schedule was still under development; however, it has now been finalized.

The demand for expanded paratransit services was estimated using data from the American Community Survey (ACS) to calculate the capture rate — the percentage of the eligible population expected to use the service. The analysis showed that extending coverage by up to 1 mile could lead to a 270% increase in potential customers, particularly in areas just beyond the current boundary. However, further expansion beyond 1.5 miles showed diminishing returns, with fewer additional customers relative to the increased cost.

Cost projections were developed for each expansion scenario based on the estimated number of additional trips and a detailed fare structure analysis. For example, extending coverage to 1.5 miles is projected to increase total costs by approximately 43% by 2029, compared to maintaining the current boundary. The analysis considered various fare structures, including a tiered premium fare model, to improve cost recovery. The financial viability of the coverage expansion depends on the fare structure chosen. At the current $4 fare, farebox recovery remains low, covering only about 5% of the total costs for a 1-mile expansion. To improve cost recovery, the team evaluated alternative fare models, such as distance-based fares ranging from $6 to $14 for different coverage tiers. This tiered fare approach could help UTA recoup between 8% and 12% of the total costs by 2029, depending on the expansion distance.

3. Commingling Paratransit with UTA On Demand Services

Another opportunity is to commingle paratransit trips with the Innovative Mobility Solutions' (IMS) UTA On Demand service, using the UTA On Demand service to take on paratransit passengers and, ideally, resulting in a lower overall cost for UTA, as the paratransit service is significantly more expensive on a per-trip basis. This form of commingling would effectively serve as a paratransit overflow service. "Overflow" generally refers to transferring ride requests from one demand response service to another. In this instance, the project team uses "paratransit overflow service" to refer to the idea of using the UTA On Demand service to serve paratransit trips. This is sometimes also referred to as "relief" or "support" service, but for the purposes of this report, it will be referred to either as commingling or overflow.

This analysis explored three different criteria for choosing which paratransit trips could be transferred to the UTA On Demand service:[1]

- **Within IMZs only:** commingle paratransit overflow rides for paratransit rides that start and end in the current IMZs and potential new IMZs
- **Within IMZs and nearby catchment areas:** commingle paratransit overflow rides for rides occurring within current IMZs, as well as in select areas nearby the current IMZs
- **Under a given duration during peak hours:** expand paratransit availability based on time of day (e.g., peak hours) and trip length (e.g., for trips less than 35 minutes in duration)

Additionally, any paratransit trip that is selected through any combination of criteria determined by UTA could be designated for service by UTA On Demand. Each scenario analyzed assumes that all paratransit trips that fit the criteria will be served by UTA On Demand, therefore representing the maximum potential savings. The number of paratransit trips sent to the IMZ was estimated using trip data from UTA's current paratransit service and UTA On Demand service in 2022 and 2023.[2] The existing service parameters, such as booking models and pick-up location, were applied to trips of each of the two service types, where applicable. The team then calculated the following outputs:

- Additional UTA On Demand vehicles needed for the incurred ridership demand
- Estimated additional cost to UTA On Demand of serving paratransit trips with UTA On Demand vehicles (including additional recommended driver training)
- Estimated savings realized by UTA's paratransit service by reallocating some trips to UTA On Demand
- Overall cost impact to UTA as a whole based on the estimated costs and savings (calculated as the cost savings to UTA paratransit minus the additional cost to UTA On Demand).

For each scenario, the maximum potential cost savings for UTA are estimated. Furthermore, each proposed scenario can be independently applied to an IMZ or potential service area or combined with other scenarios to launch a holistic paratransit overflow service. Scenario 1, which investigated commingling within both the proposed East Salt Lake County (SLCO) and proposed West SLCO

[1] This study does not address or discuss existing UTA On Demand capacity challenges. All analysis assumes that the current level of service for UTA On Demand will be consistent. Any additional vehicle hours that are calculated as costs to UTA as part of this study are costs associated with serving commingled paratransit rides, not existing unmet UTA Demand.

[2] UTA currently does not track how often paratransit eligible riders are currently using UTA On Demand. Separate from this approach, UTA could also conduct outreach and marketing efforts to understand how many paratransit riders are using UTA On Demand and how to encourage more use of the service among the paratransit community.

IMZs, would result in the greatest savings for UTA overall relative to the other scenarios. When considering proposed IMZs, this is UTA's greatest opportunity for cost savings. Across existing IMZs, Scenario 2, which would entail enabling UTA On Demand to serve some additional paratransit trips outside of current IMZ boundaries, would result in savings of around $600,000 total, or the greatest savings across existing IMZs (based on about $900,000 in UTA Paratransit savings and about $300,000 in additional cost to UTA On Demand). Scenario 3, which would commingle paratransit trips under a certain duration during peak service hours, could be added to Scenario 1 for additional cost savings. Results aim to inform UTA's decisions about whether to move forward with a commingled paratransit overflow service and, if so, about the potential for commingling in the proposed new zones.

The project team also investigated several operational and administrative changes that are required to support a commingled service, which are included in the Implementation section. Recommendations include training drivers and dispatchers in both UTA On Demand and paratransit services, ensuring that UTA On Demand drivers and operators are trained to deliver the same level of service to paratransit passengers as paratransit drivers and operators. Note that all cost estimates included in this report account for the additional costs required to train drivers. The table below summarizes the findings from the analysis. Should UTA decide to move forward with paratransit commingling, it is recommended that UTA work with their on-demand vendor to finalize the pricing, implementation requirements, and potential savings for the decided commingling approach.

4. Adjusting Fares for Off-Peak Periods

Another promising opportunity to optimize UTA's paratransit operations involves implementing fare adjustments during off-peak periods. The goal is to encourage riders to shift their trips from peak hours (7 to 10 a.m. and 1 to 4 p.m.) to off-peak times by reducing fares during less busy periods. This strategy aims to alleviate high demand during peak times, improve service reliability, and potentially reduce operational costs without compromising affordability for riders who are predominantly low-income or have limited transportation options.

The effectiveness of off-peak fare adjustments depends on the price sensitivity, or elasticity, of UTA's paratransit riders. While paratransit demand is generally considered inelastic due to the limited transportation alternatives available to riders, fare reductions during off-peak hours could still encourage some riders to shift their trips outside of peak demand periods. Based on research from the Transit Cooperative Research Program (TCRP) and general assumptions about fare elasticity, the team estimated the potential impact of introducing reduced fares during off-peak periods:

- **Impact of $1 fare reduction:** A reduction in off-peak fares by $1 (from $4 to $3) is projected to decrease peak trips by approximately 16,400 annually. However, this would also reduce fare revenue by about $35,000 due to the lower price point.
- **Impact of $2 fare reduction:** A reduction of $2 (from $4 to $2) could lead to a more significant reduction of around 60,000 peak trips annually. The resulting fare revenue loss is estimated at about $50,000.

These estimates are based on current ridership patterns, where 70% of total trips occur during peak hours, and reflect the potential demand shift as riders take advantage of the lower fares outside of peak periods.

Introducing reduced fares during off-peak periods could yield several benefits for UTA:

- **Reduced peak demand:** By incentivizing off-peak travel, UTA could shift some demand away from peak periods, potentially reducing the required peak fleet size and the number of drivers needed.
- **Improved on-time performance:** Lower demand during peak periods would likely improve on-time performance, as drivers would have more flexibility and buffer time between trips, minimizing delays and service disruptions.
- **Less trip negotiation:** With fewer rides scheduled during peak hours, the need for trip negotiations (adjustments to pick-up times due to simultaneous demand) could decrease, reducing operational complexities and manual intervention.

While fare adjustments during off-peak periods could offer operational and financial benefits, further research into the specific price sensitivity of UTA's paratransit riders is recommended to fine-tune the approach. Factors such as the type of trips (essential versus non-essential) and rider demographics (transit-dependent versus choice riders) will play a critical role in determining the overall effectiveness of this strategy. Additionally, any fare changes must comply with the Federal Transit Administration's (FTA) regulations that ADA paratransit fares should not exceed twice the fare charged on the entity's fixed-route system.

5. Expanding Eligibility Centers

Expanding eligibility centers represents an opportunity for UTA to enhance access to its paratransit services by reducing the travel burden for current and potential riders. Currently, all applicants must visit the Mobility Center in Murray for in-person functional assessments and mobility device certifications, a process that can be time-consuming and challenging for those living in more distant areas, such as Ogden and Provo.

To address this issue, the project team explored the potential benefits of adding new eligibility centers in strategic locations, such as Ogden, Salt Lake City, Provo, and West Valley City. Additional centers would reduce travel distances for many applicants, improve the overall accessibility of the service, and potentially lower costs for UTA by shortening trip distances for applicants traveling to the centers.

While establishing new centers would involve significant operational costs (approximately $400,000 per year, similar to the current center), UTA could seek funding through federal grants, such as the Bus and Bus Facilities Program, to support capital expenses. Alternatively, UTA might consider more cost-effective options, like partnering with community organizations to utilize existing facilities for mobility device certifications.

These initiatives would reduce barriers for paratransit riders and ensure a more equitable assessment process across UTA's service area.

6. Enhancing Communication Through a Rider App and Web Portal

Improving communication through a rider app and web portal presents an opportunity for UTA to enhance the accessibility and efficiency of its paratransit service. This new platform would allow riders to book, edit, and cancel trips, as well as track vehicle arrival times, without needing to call UTA, offering greater flexibility and convenience.

By supplementing the existing call-in booking system, the app and web portal could reduce manual processes for UTA staff, decrease no-show rates through ride reminders, and improve overall operational efficiency. Survey results show strong support for these features, with over 50% of respondents indicating that app-based booking and vehicle tracking would increase their likelihood of using paratransit services.

In addition to streamlining ride booking, the platform could result in cost savings by reallocating dispatcher hours, reducing vehicle wait times, and minimizing rider complaints related to service timing and missed rides. These enhancements are expected to improve the overall user experience and operational performance of UTA's paratransit services.

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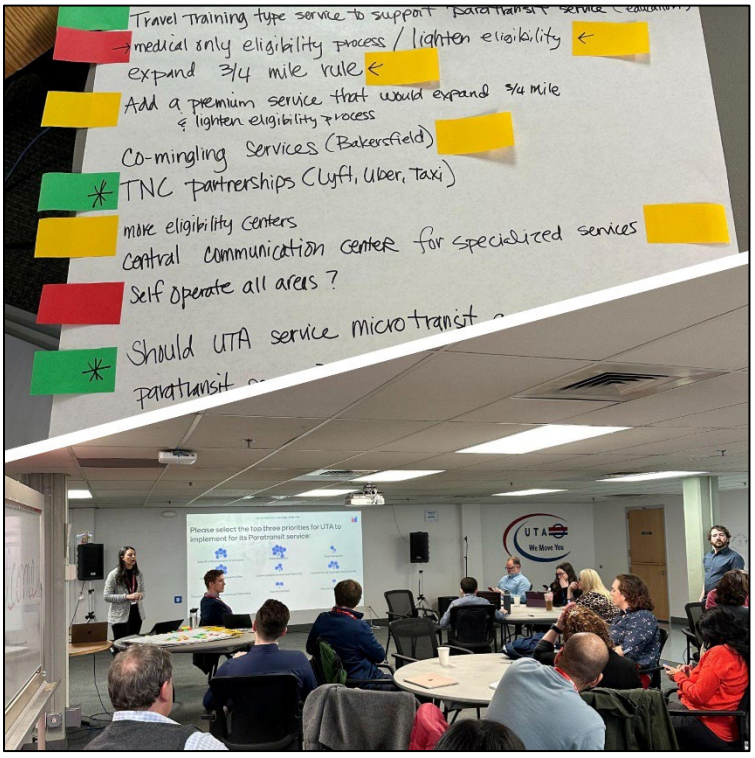
1. Background

The Utah Transit Authority (UTA) paratransit service operates a specialized fleet designed to serve individuals with disabilities, ensuring accessible transportation within a ¾-mile boundary of fixed-route services and during standard operating hours. As part of its commitment to promoting equity, sustainability, and service efficiency, UTA launched the Paratransit Forward Study to evaluate the current state of its paratransit operations and identify areas for improvement. The initial assessment, alongside comprehensive surveys of current and potential future users, highlighted several inefficiencies within the existing system. Additionally, insights gathered from stakeholder interviews and peer transit agencies presented examples of alternative service models and strategies that could significantly enhance overall service delivery if implemented. The Alternatives Analysis study presented here is a critical phase aimed at identifying, evaluating, and comparing various operational strategies that could enhance UTA's paratransit services. The goal of this analysis is to develop viable service delivery scenarios that address the unique needs of the customers within the UTA service area while promoting access, reliability, and cost-efficiency.

The community engagement sessions and peer agency interviews provided critical insights that were further explored during a paratransit workshop held on February 27, 2024. In this workshop, stakeholders engaged in a comprehensive brainstorming session, leading to the generation of multiple opportunities aimed at enhancing UTA's paratransit services. Based on these discussions, the alternatives were categorized into two key areas:

1. **Focused Analysis** involves ideas that require detailed data examination and sophisticated modeling techniques. These alternatives focus on in-depth assessments of operational changes that could substantially impact service delivery, reliability, and cost-effectiveness. The complexity of these analyses is justified by the potential for significant improvements.
2. **High-Level Exploration** includes strategies that are less data-intensive but still hold promise for meaningful enhancements. These alternatives are primarily evaluated through a broad overview of their benefits and potential costs, offering a quicker path to implementation if found feasible.



Brainstorming session at the paratransit workshop

Figure 1 presents the ideas generated during the workshop, organized into six key areas that are particularly relevant to UTA and its customers. These ideas can be classified under either Focused Analysis or High-Level Exploration, based on their level of complexity, data requirements, and potential impact. From this list, UTA identified seven initiatives with the highest potential to enhance the paratransit service.

For the Focused Analysis, UTA prioritized the following initiatives:

- **Allow same-day TNC trips:** Facilitate same-day paratransit bookings through third-party services like Uber and Lyft, providing greater flexibility for riders.
- **Enable commingling of vehicles and shifts between UTA On Demand and Paratransit:** Optimize resource allocation by allowing shared use of vehicles and driver shifts from UTA On Demand to serve paratransit trips to enhance coverage and operational efficiency.
- **Expand service coverage:** Explore the possibility of extending the paratransit service area beyond the current ¾-mile radius of fixed-route services.

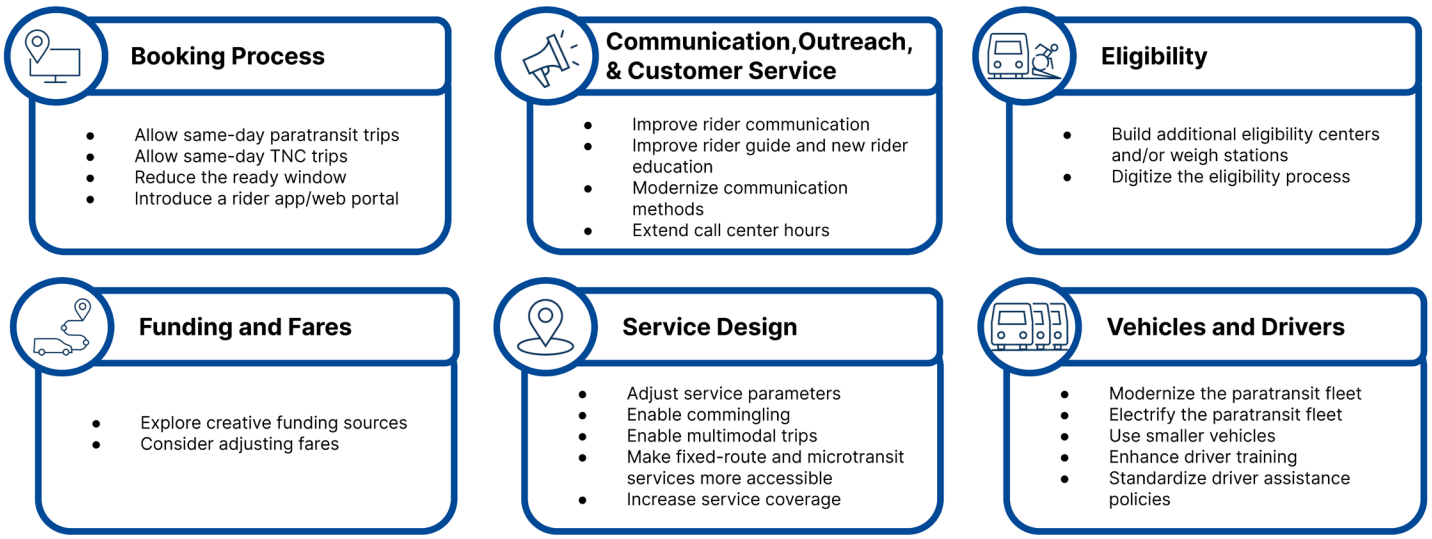


Figure 1 – Proposed Opportunities for Analysis: This figure categorizes ideas from the workshop into six key areas: Booking Process, Communication, Outreach & Customer Service, Eligibility, Funding and Fares, Service Design, and Vehicles and Drivers. These categories outline the proposed strategies for improving service delivery and efficiency.

- **Evaluate fare adjustment:** Investigate fare modifications, such as off-peak discounts or premium fares for certain rides, aimed at improving affordability and optimizing service efficiency.

In terms of High-Level Exploration, UTA selected the following strategies:

- **Build additional eligibility centers and/or mobility certification centers:** Expand the number of locations where potential riders can complete eligibility assessments and certify mobility devices, reducing the travel burden for many current and prospective users.
- **Introduce a rider app or web portal:** Develop a digital platform, either a mobile app or a website, that allows riders to conveniently book trips, manage their accounts, and receive real-time updates.
- **Improve rider communication:** Implement improvements in communication channels to provide timely updates on eligibility status, ride scheduling, service alerts, and other critical information to better serve riders' needs.

Consequently, this task will prioritize the highest-potential initiatives identified by UTA that offer the greatest benefits.

2. Needs Assessment

The UTA paratransit service area spans 475 square miles and provides coverage within a ¾-mile boundary from UTA's fixed routes. In 2022, UTA delivered 303,282 paratransit trips to various locations within this service area. The average travel time to the top 30 destinations was approximately 44 minutes, covering an average distance of 8 miles. These trips are generally short and often take a reasonable amount of time when considering the need for assistance, boarding, and alighting. However, the financial implications are significant. According to 2022 financial data, UTA operates at an average cost of $74 per trip. Compared to other transit modes, this cost is substantially higher. Under FTA regulations, paratransit fares cannot exceed twice the fare charged for a comparable trip on the fixed-route system. This regulation limits farebox recovery, which currently covers only about 5% of operating costs, highlighting the financial challenges inherent in the current paratransit model.

While traditional paratransit services can be effective for trips scheduled at least 24 hours in advance, they are less flexible and more costly for on-demand, same-day travel. Transportation Network Companies (TNCs) and comingling with on-demand vehicles within the Innovative Mobility Zones (IMZs) offer a cost-effective solution for these same-day trips due to their ability to dynamically match supply with demand and provide immediate service. This improved flexibility benefits riders by better accommodating spontaneous or urgent transportation needs, which traditional paratransit services may struggle to fulfill efficiently.

Another key challenge is the restriction that the current paratransit service model places on UTA's ability to redesign and optimize its fixed-route network. Because ADA paratransit service is required to mirror fixed-route service areas, any adjustments to bus or rail routes must account for the corresponding impact on paratransit coverage. This limits UTA's ability to make changes that improve efficiency, expand service to high-demand corridors, or restructure routes to better meet evolving community needs. Expanding paratransit coverage beyond the ¾-mile boundary, particularly through flexible service models like premium-fare zones, could provide UTA with greater operational freedom. By decoupling fixed-route modifications from paratransit constraints, UTA can plan a more effective transit network while ensuring that paratransit users retain or even gain access to high-quality services.

Moreover, UTA could also benefit from expanding eligibility centers and weight stations across the service area to streamline the rider eligibility process, reduce wait times, and improve accessibility. Additionally, implementing a rider app and web portal would allow for more flexible trip management, reducing the dependency on call-in services and improving communication through features like real-time tracking and ride notifications. Finally, adjusting fare structures, particularly by offering reduced off-peak fares, could help balance demand throughout the day and optimize resource allocation during peak hours.

The high operating costs are driven by factors such as low passenger density, specialized vehicles, and extended trip distances, which make it difficult to achieve cost efficiency while maintaining compliance with ADA requirements. The alternatives discussed in this study aim to address these financial pressures by introducing more flexible and scalable service models and qualitative improvements. This needs assessment is informed by findings from previous studies, survey results, stakeholder feedback, and peer agency insights. It highlights the challenges faced by current and prospective paratransit users. Therefore, the suggested strategies enhance service accessibility, improve efficiency, and elevate overall customer satisfaction.

The following sections outline the selected alternatives identified to address the customers desired service highlighted in this assessment.

An ambulatory wheelchair rider using UZURV. UZURV is an Adaptive TNC designed to provide safe, reliable, and affordable transportation for individuals with mobility needs.

2.1 TNC Integration: Addressing Service Gaps and Improving Operational Efficiency

While the current paratransit service model effectively serves many riders, the inherent limitations of a pre-scheduled, shared-ride system can lead to challenges in specific situations. These situations may include long-distance trips, peak-hour demand, and service to less densely populated areas,

potentially resulting in longer wait times, extended ride durations, or less direct routing for some riders. These challenges were highlighted in the Task 1 report, which underscored the operational strain and customer burden associated with existing service patterns. Integrating TNCs such as Uber and Lyft can alleviate these issues by offering a flexible and scalable alternative. Importantly, TNC integration is not limited to same-day trips; it can also enhance scheduled paratransit services by providing more options for riders who need timely, reliable transportation. However, it is crucial to acknowledge that TNC integration presents challenges regarding regulatory compliance and service provision. TNCs may face difficulties in meeting all FTA regulatory requirements for paratransit, particularly concerning drug and alcohol testing and driver training. Furthermore, UTA's contract with the State of Utah to provide trips through the Division of Services for People with Disabilities (DSPD) includes requirements that TNCs may not be able to meet. TNCs also typically offer very limited support for passengers requiring mobility device transport and may not be equipped to respond to reasonable modification requests as mandated by the ADA.

With these substantial limitations in mind, integrating TNCs could offer a flexible and scalable alternative for specific trip types or situations. Importantly, TNC integration is not limited to same-day trips; it can also enhance scheduled paratransit services by providing more options for riders who need timely, reliable transportation, provided that the aforementioned challenges can be addressed.

Survey results further support the need for TNC integration. Approximately 15% of respondents (190) reported that they currently use rideshare services in addition to paratransit, while 16% (269) expressed interest in same-day booking options. Peer agencies interviewed during this study also emphasized the significant operational benefits of incorporating TNCs, which have proven effective for overflow, rescue rides (trips that address immediate service gaps due to operation or logistics errors, such as vehicle breakdowns, driver shortages, or scheduling conflicts), and as a supplementary service during peak times. In terms of costs, peer agencies reported that integrating TNCs resulted in per-trip costs as low as $15 to $20, far below the $74 currently incurred by UTA’s paratransit service. For example, the Denver Regional Transportation District (RTD), which uses TNCs for 40% of their paratransit trips, reported substantial savings while maintaining service quality and compliance with ADA requirements. It is important to note that these cost savings may not be directly transferable to UTA's context without careful consideration of the specific challenges and requirements outlined above. Expanding TNC use can result in reduced ride times, enhanced service reliability, and better customer experiences. However, achieving these benefits would require UTA to implement a robust driver training program for any TNC drivers participating in the paratransit program, ensuring they meet the necessary standards for assisting passengers with disabilities and complying with ADA regulations.

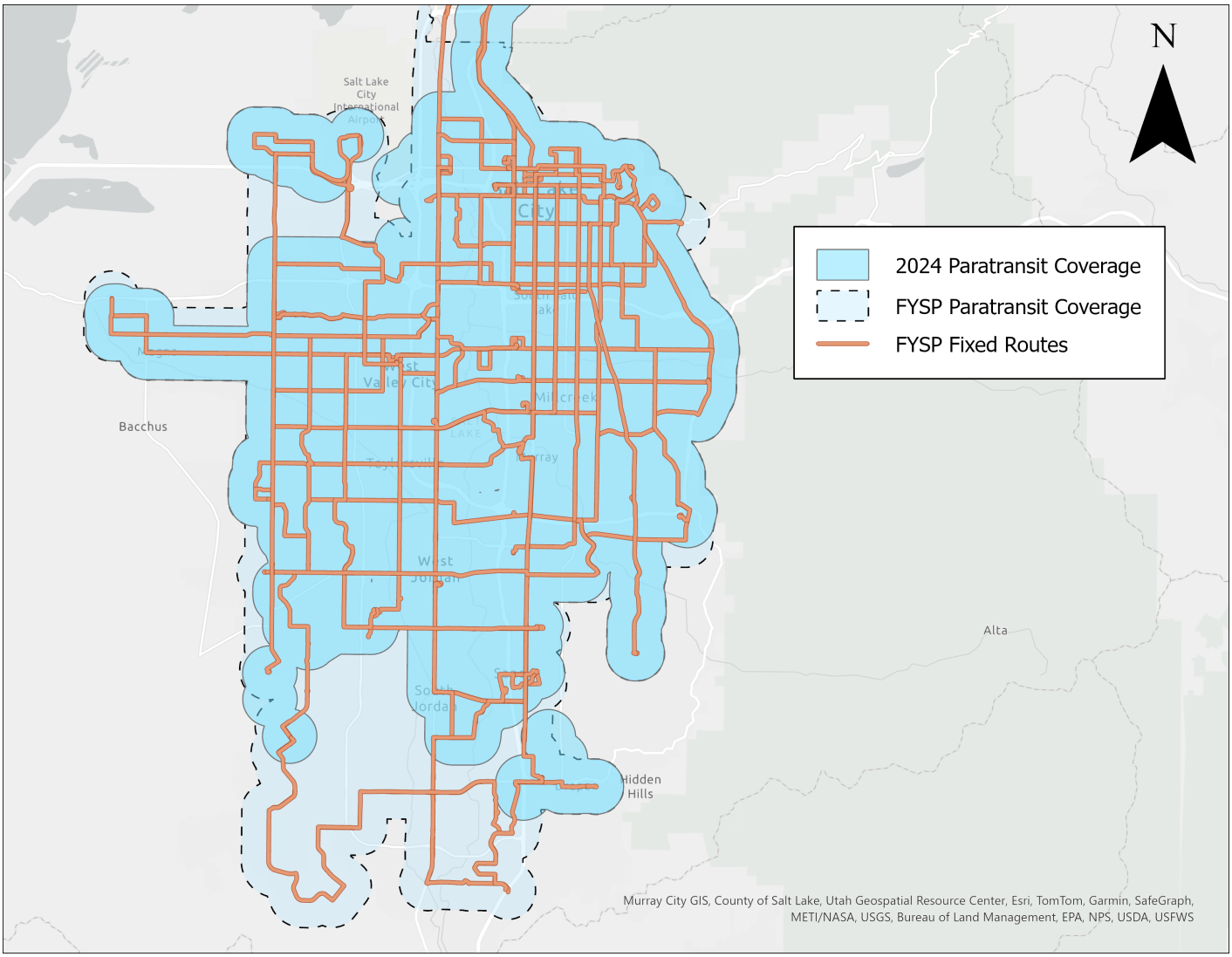
2.2 Coverage Expansion: Bridging Accessibility Gaps and Meeting Demand

The existing service coverage, which adheres to the ¾-mile boundary from fixed routes, limits accessibility for a significant portion of potential riders. According to the survey results, 53% of respondents (210) indicated that they are unable to use paratransit for specific trips due to their location outside the current service area. Additionally, 20% (269) of respondents prioritized coverage expansion as a key area for improvement in UTA's paratransit service.

Expanding service coverage also aligns with broader community goals of improving accessibility and mobility for underserved populations and particularly Areas of Persistent Poverty (AoPP). Feedback from the workshop indicated strong support for increasing paratransit ridership by reaching more communities, particularly in suburban and rural areas that currently fall outside the coverage zone. This feedback, combined with survey data and peer agency experiences, highlights the potential benefits of thoughtful coverage expansion, both in terms of service equity and operational effectiveness.

Although expanding paratransit coverage improves accessibility, the actual ridership growth depends on other factors. Estimates suggest up to 10% of the population may have disabilities. However, actual paratransit enrollment and utilization are much lower due to eligibility criteria, alternative transportation options, and individual travel preferences. For example, many individuals rely on personal vehicles, accessible fixed-route transit, or community programs that reduce their need for paratransit.

Therefore, service expansion alone will not proportionally increase ridership. Factors such as ADA eligibility, existing mobility choices, and public awareness influence adoption. To maximize the benefits of expanded coverage, UTA must pair geographic expansion with outreach, travel training, and coordination with other transit options. This approach ensures accessibility improvements while maintaining service efficiency.



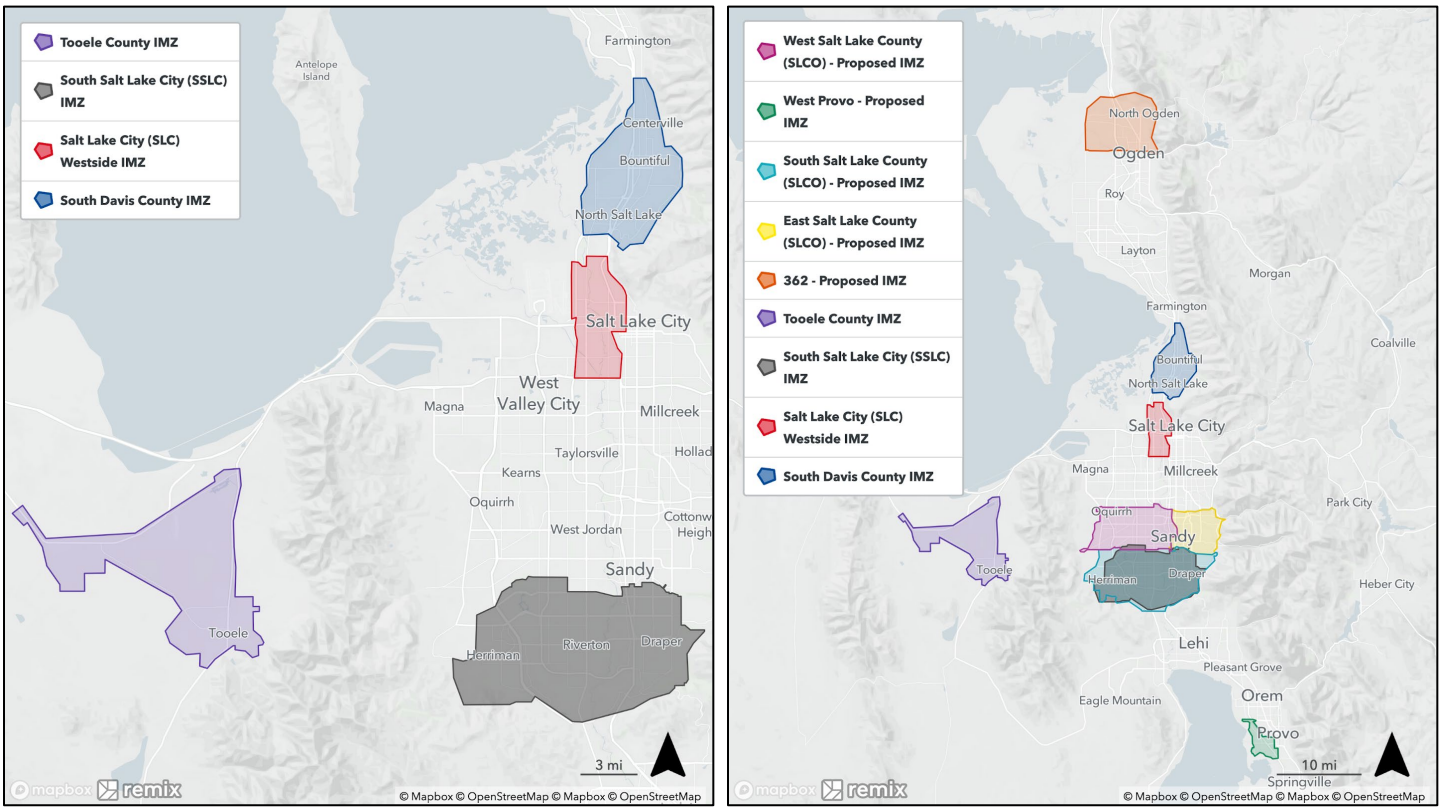
Map of Paratransit Coverage in Salt Lake County: This map highlights the existing 2024 paratransit coverage, and the proposed expansions identified in the Five-Year Service Plan (FYSP). The map illustrates how the new fixed-route services will extend paratransit access, significantly expanding the coverage area.

2.3 Commingling: Optimizing Service Delivery Through Integrated Operations

Like many ADA-compliant services, UTA's paratransit service is costly to operate — significantly more so than UTA On Demand, which averages between $19 and $22 per ride across all Innovative Mobility Zones (IMZs). Given UTA's commitment to maintaining affordable fares for high-need, low-income passengers, managing these high operating costs is crucial. A key strategy for cost reduction involves commingling paratransit trips with UTA On Demand, allowing UTA to leverage the less expensive, flexible service while maintaining ADA compliance.

Integrating these services through a commingling approach, utilizing a unified fleet for both paratransit and on-demand trips, could address high operational costs, improve vehicle utilization, and enhance service flexibility. UTA's On Demand platform supports this strategy by dynamically allocating vehicles to meet diverse service needs, providing a cost-effective, reliable, and fully accessible transportation solution.

A successful commingling model requires partnerships with vendors who understand agency needs and can deliver tailored, accessible solutions. Examples of transit agencies successfully commingling riders using on-demand platform technology platforms



(a) UTA IMZs

(b) Current and Proposed UTA IMZs

This figure illustrates the (a) current UTA IMZs and (b) the proposed expansions under the Five-Year Service Plan (FYSP). The existing IMZs highlight areas where on-demand services are currently offered, while the proposed expansions aim to extend coverage, enhancing flexibility and access to paratransit and general transit services within the UTA network.

include High Valley Transit in Summit County, Utah; Golden Empire Transit District in Bakersfield, California; StarTran in Lincoln, Nebraska; and Citibus in Lubbock, Texas.

2.4 Addressing Peak Demand with Off-Peak Fare Adjustments

Managing peak demand is a critical component of improving the cost-effectiveness and service quality of UTA's paratransit operations. One potential strategy to achieve this is through the adjustment of fare structures, specifically by introducing reduced fares during off-peak hours. Currently, a significant portion of paratransit trips occur during peak periods, placing substantial pressure on UTA's resources, such as vehicle availability and driver capacity.

By lowering fares during off-peak hours, UTA could incentivize riders to schedule trips outside of peak times, thereby balancing demand throughout the day. This approach would help reduce congestion during high-demand periods, improve on-time performance, and potentially decrease the need for additional vehicles and drivers during peak hours.

Interpreting Cost Savings and Operational Realities

While the cost savings presented in this study provide a useful baseline for evaluating different alternatives, it is essential to understand that these numbers represent the maximum potential savings under ideal conditions. The alternatives explored in this study are designed to highlight opportunities for optimizing resource use and improving cost-efficiency. However, these savings are not guaranteed and depend on several operational factors.

The per-trip cost estimates used in the analysis are based on a simplified model that assumes direct cost reductions by shifting trips to lower-cost alternatives. In reality, UTA's cost structure is largely influenced by fixed and semi-fixed overhead costs — such as vehicle maintenance, administrative staffing, and contractor management — that do not decrease on a trip-by-trip basis. To achieve actual savings, there would need to be systemic reductions in these overhead costs, such as decreasing fleet size, optimizing staffing levels, or renegotiating service contracts.

For example, while commingling UTA On Demand trips with paratransit has the potential to reduce the cost per trip by better utilizing vehicles and drivers, it may also introduce new administrative and operational complexities. Commingling requires additional coordination and scheduling resources to manage trips effectively, particularly to ensure ADA compliance and service quality for paratransit riders.

2.5 Expanding Eligibility Centers

Building additional eligibility centers and mobility device certification sites throughout the UTA service area is essential to enhance the accessibility and efficiency of paratransit services. Currently, having one center cover the entire service area results in many passengers and potential passengers having to travel long distances for eligibility approval. Expanding the network of these centers would help streamline the eligibility determination process, ensuring that new riders can access services promptly.

In addition to improving service accessibility, strategically located mobility device certification centers would reduce travel times for current riders who must get their mobility devices approved more often than they are required to take the full eligibility assessment. During recent workshops and stakeholder surveys, feedback indicated a strong preference for more localized eligibility centers to better serve the geographically diverse UTA service area. Implementing these expansions would not only facilitate faster eligibility assessments but also optimize the use of vehicles tailored to specific mobility needs, ultimately contributing to a more efficient and responsive paratransit system.

2.6 Enhancing Rider Communication Through a Rider App and Web Portal

Introducing a rider app and web portal is a critical step toward modernizing UTA's paratransit services and improving rider communication. The app would allow users to book, modify, or cancel trips directly, reducing reliance on the traditional call-in method and offering greater convenience and flexibility. During community engagement sessions, over 50% of surveyed participants expressed a preference for app-based booking and vehicle tracking features, indicating a strong demand for digital tools to enhance the user experience.

Furthermore, the app could provide real-time vehicle tracking, ride reminders, and push notifications for service updates, enhancing transparency and reliability. This feature set would be particularly beneficial in reducing no-show rates and improving on-time performance by keeping riders informed about their trips. Enhanced communication capabilities were highlighted as a priority in stakeholder meetings and feedback from riders, highlighting the need for a digital platform that supports seamless communication and better service management. By adopting these tools, UTA can improve customer satisfaction, streamline operations, and ultimately lower costs associated with manual booking and trip coordination.

3. Opportunity #1: TNC

TNCs are an established mode of transportation, often referred to by the general public as rideshare services, that leverage online platforms to provide on-demand rides by connecting passengers directly with drivers. TNCs offer both exclusive rides for individual passengers and shared trips where multiple passengers with similar destinations are grouped together. Integrating TNCs into paratransit services is an increasingly popular approach among transit agencies seeking cost-effective and responsive solutions to meet diverse rider needs. However, for UTA, the primary consideration in evaluating TNC integration is the overall customer experience; any cost savings must not come at the expense of significantly diminished rider experience.

Agencies across the U.S. have successfully implemented TNC partnerships with various fare and subsidy models that attract and accommodate paratransit riders. For example, the Greater Richmond Transit Company (GRTC) partnered with UZURV and Roundtrip to launch CARE On-Demand, a same-day service for paratransit customers that has achieved a 97% on-time performance rate and saved approximately $574,000 since its launch in 2017. CARE On-Demand trips cost an average of $26, with GRTC subsidizing up to $15 of the fare, illustrating significant savings compared to the $74 average cost per trip of traditional paratransit services.

Lessons from peer agencies interviewed, such as Denver RTD and Dallas Area Rapid Transit (DART), highlight the importance of clear trip eligibility criteria, adaptable fare structures, and strong performance monitoring to ensure cost savings and service quality. Additionally, effective integration requires managing operational challenges, such as ADA compliance and system coordination, to provide a seamless, equitable experience for all riders.

Building on the success of other transit agencies, UTA is exploring the integration of TNCs into its paratransit services to offer more flexible, cost-effective, and responsive transportation options for riders. Unlike UTA's current ADA paratransit service, which requires trips to be booked at least 24 hours in advance, the proposed TNC integration would allow for same-day or real-time booking, giving riders more flexibility and freedom. This service would be particularly valuable for those with spontaneous or urgent transportation needs, providing a convenience that the current system does not offer. Additionally, TNCs can operate in areas and during times when paratransit services might not be available, thereby enhancing overall service coverage and accessibility.

Therefore, implementing TNCs would offer several value-added benefits:

- **Same-day booking:** Allowing riders to book trips on the same day provides flexibility for last-minute needs.
- **Expanded reach:** TNCs can extend UTA’s service area to locations that are costly or difficult for traditional paratransit to serve.
- **Cost savings:** Using TNCs for simpler trips reduces reliance on specialized vehicles, lowering operational costs.
- **Improved experience:** App-based booking, real-time tracking, and precise pick-up windows enhance convenience and satisfaction.

Following the description of the proposal, this section evaluates how TNC integration could be implemented, potential challenges (such as ensuring ADA compliance and maintaining service quality), and the projected financial impact of these changes.

3.1 Evaluating TNC Integration Criteria

Partnering with TNCs to supplement certain ADA paratransit services could potentially optimize operating costs and increase service flexibility for UTA. However, to evaluate the feasibility and effectiveness of this integration, several key factors must be examined to ensure the approach is equitable, meets service standards, and aligns with UTA’s goals. The following criteria outline the key considerations that were assessed in this study to determine the potential benefits and challenges of TNC integration:

TNC Demand and Eligible Trips

First, it is essential to identify the target ridership for TNC integration. Understanding which segments of the paratransit user base are most likely to adopt TNC services is crucial. This could involve analyzing rider demographics, preferences, and mobility needs to determine what percentage of customers are open to incorporating TNCs into their daily commute.

To determine which trips are best suited for TNC integration, a series of selection criteria that focus on rider needs and trip characteristics is used:

1. **Ambulatory vs. wheelchair users:** TNC services are generally more suitable for ambulatory passengers, as most TNC vehicles and/or drivers are not equipped to accommodate mobility devices such as wheelchairs. Since ADA compliance for TNCs remains a challenge, it is crucial to prioritize paratransit services for riders who require specialized vehicles and assistance.
2. **Solo riders vs. personal care attendants and additional passengers:** Riders who travel alone are generally better suited for TNC trips because these services typically use smaller vehicles and are designed for individual or single-passenger transport. For group trips involving multiple passengers or individuals who travel with personal care attendants (PCAs), traditional paratransit services are more appropriate. Paratransit vehicles are larger and better equipped to accommodate multiple passengers and any necessary mobility aids, ensuring adequate space and support for all riders.
3. **Subscription vs. casual trips:** TNCs are generally designed for on-demand, casual trips rather than regular, subscription-based rides. Subscription trips — those scheduled on a recurring basis — are more efficiently handled by traditional paratransit services, which can plan routes and allocate resources more effectively for repeated journeys. Conversely, casual trips that are more sporadic or unpredictable align well with the flexibility offered by TNCs.

By applying these criteria in succession, we can effectively segment the ridership and determine which trips can be shifted to TNC services. The goal is to match the right mode of service with the unique needs of each rider. Paratransit riders have varying needs, with some using mobility devices or requiring specialized equipment, such as ramps, to board vehicles. For the first selection criterion, as discussed earlier, ambulatory riders are the most suitable candidates for TNC services, given the limited availability of WAVs in TNC fleets.

Table 1: Mobility device information for UTA paratransit riders

Mobility Device / Equipment Tags	Number of Trips	Type of Mobility
Ambulatory	177,514	Ambulatory
Needs a Ramp	53,352	Ambulatory
Wheelchair	40,569	Wheelchair
Power Chair	27,744	Wheelchair
Scooter	1,828	Wheelchair
Rider Requires 2 Seats	1,766	Ambulatory
Not Available	405	-
Extra Wide Long WC	84	Ambulatory
Total	303,282	

UTA's ridership data includes detailed information on the mobility devices used by passengers. Leveraging this data, the team applied a filtering process to identify potential riders who meet the first selection criterion. In this process, mobility devices were categorized based on whether the system indicates that the rider is ambulatory or requires a wheelchair. The data shown in Table 1 reveals that a significant portion of trips involve ambulatory riders, suggesting substantial opportunities for outsourcing these trips to TNCs. In total, from the first selection criterion, 232,778 trips are deemed candidates for TNC outsourcing.

Paratransit vehicles are specifically equipped to handle multiple passengers, including those traveling with PCAs or mobility aids, and provide trained drivers who can offer assistance beyond what a typical TNC driver might provide. Thus, while both TNCs and paratransit can serve solo riders and those with PCAs, paratransit remains the better option for group trips or when specialized

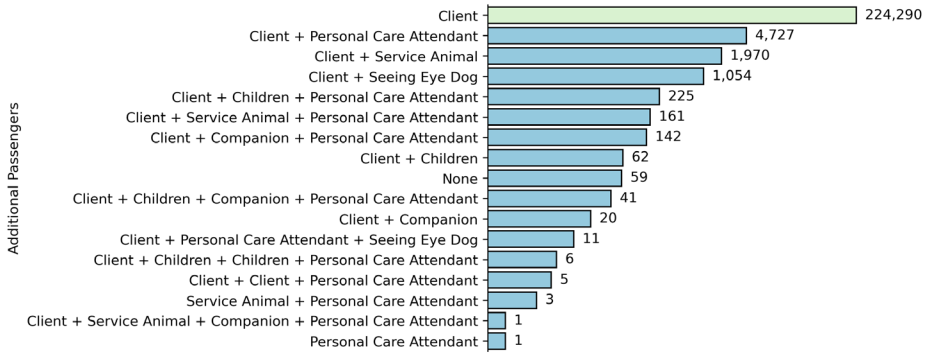


Figure 2 – Distribution of Additional Passenger Types in Paratransit Trips: The figure displays a bar plot (not to scale) showing the distribution of different passenger types accompanying paratransit riders. Solo riders represent the most significant category by a wide margin, accounting for the majority of trips. Other categories, such as riders traveling with a PCA or companions, are present in smaller numbers.

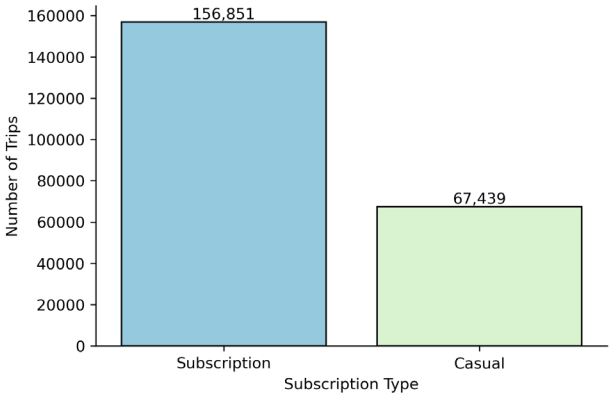


Figure 3 – Distribution of Subscription vs. Casual Trips for Paratransit Riders: The bar plot illustrates the distribution of subscription and casual trips among UTA paratransit riders in 2022. Out of the 224,290 trips identified from the second selection criterion, 67,439 (or 30%) are casual trips, while the remaining trips are subscription-based.

support and larger vehicle capacity are required. Therefore, for the second selection criterion, the team examined the presence of additional passengers traveling with the primary rider. Out of the 232,778 trips identified from the first selection criterion, 224,290 were completed by solo riders, as illustrated in Figure 2. These trips are considered more suitable for outsourcing to TNCs, as they align with the capabilities of current TNC services for riders who do not require additional support.

The final selection criterion considers the type of trips, categorizing them as either 1) subscription or 2) casual. Subscription trips are recurring rides scheduled regularly, such as weekly medical appointments or work commutes, whereas casual trips are more sporadic and typically requested on-demand, such as grocery shopping or leisure activities. Given that TNC services are predominantly designed for on-demand real-time bookings, they are less suitable for subscription trips that require advanced scheduling and consistent service reliability. Pre-booking through TNC platforms is not only less common but often incurs higher costs compared to on-demand requests.

As shown in Figure 3, out of the 224,290 trips selected based on the second criterion, 67,439 are designated as casual trips. This means that, from the total of 303,282 trips provided in 2022, approximately 67,439 trips — 22% of all trips — could potentially be shifted to TNC services. In terms of ridership, out of a total of 1,906 riders in 2022, 1,222 riders — approximately 64% of all riders — are identified as potential TNC users.

TNC Coverage Area

Service area coverage is another key consideration. Should TNCs be available across the entire service area, or should trips be limited to specific zones, such as low-density areas or regions where traditional paratransit is less efficient? Defining the geographic boundaries for TNC use will be critical to optimizing both cost and service delivery. For this study, it is reasonable to assume that TNC services would initially be offered within the existing paratransit coverage area, which encompasses a ¾-mile radius from fixed routes. Depending on the performance, the service area could be downsized to limited zones, expanded to provide 24/7 service throughout the service area (similar to Denver RTD's approach), or include specific regions outside of the service area such as underserved zones or AoPP.

TNC Subsidy Model and Service Cap

Cost considerations are central to the success of any TNC partnership. Determining an appropriate fare strategy, including how much UTA should subsidize each ride, will directly impact both rider participation and financial sustainability. The fare structure should provide a balance between affordability for riders and cost-effectiveness for UTA. For example, Table 2 highlights the various subsidy models employed by the agencies interviewed. Among these, the **shared cost model**, implemented by agencies like DART and Denver RTD, and the **capped fare model**, used by Pinellas Suncoast Transit Authority (PSTA), stand out as effective approaches.

To ensure fair and manageable usage of TNC services, a service cap should be implemented. For instance, the Denver RTD applies a maximum of 60 TNC requests per rider per month (equivalent to 30 round trips). For this study, the team analyzed the 67,473 eligible trips to understand the distribution of trip counts per rider per month. The analysis shown in Figure 4 indicates that almost all riders use paratransit services fewer than 60 times per month, with approximately 80% of riders taking between 2 to 20 trips monthly. Based on these results, there is no immediate indication that a strict service cap needs to be enforced under a 60-trip limit. However, a modest cap during the pilot phase may be advisable to monitor rider behavior and gauge the voluntary adoption of TNC services, helping UTA better understand patterns of usage before full-scale implementation.

Alongside service caps, the study also considers three primary fare and subsidy models for integrating TNC services:

1. **Fixed-based subsidy:** UTA would cover a fixed amount per trip (for example, up to $20) with any additional cost being the rider's responsibility.
2. **Distance-based subsidy:** UTA would fully subsidize trips up to a certain distance, with this analysis assuming a limit of 10 miles. Any distance beyond that would be covered by the rider.
3. **Co-pay subsidy:** In this model, similar to what the DART uses, the rider pays a fixed co-pay of $4 (the current paratransit fare), while UTA covers the remaining cost up to a $20 maximum.

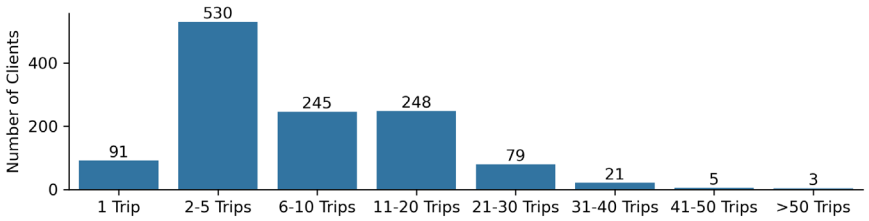


Figure 4 – Distribution of Paratransit Usage per Rider per Month: The figure shows a bar plot illustrating the distribution of how frequently riders use paratransit services on a monthly basis. The majority of riders (about 80%) utilize the service between 2 to 20 times per month, with very few exceeding 60 trips. This indicates that most riders fall well below the proposed service cap of 60 trips per month, supporting the conclusion that a strict cap may not be necessary.

UTA has shown particular interest in the co-pay subsidy model due to its potential to balance affordability for riders with cost-effectiveness for the agency. Currently, UTA charges a fare of $4 per trip for paratransit services, which is less than twice the standard fixed-route fare of $2.50, in compliance with FTA regulations. The co-pay subsidy model allows UTA to maintain an affordable fare structure for riders while potentially reducing the overall cost per trip by covering only a portion of the fare, rather than the entire cost, making it a financially sustainable option.

Vehicle Accessibility and ADA Compliance

A critical aspect of integrating TNCs is ADA compliance. While TNCs offer flexibility, many agencies struggle to fully comply with ADA requirements, particularly in terms of vehicle accessibility and driver training. UTA must determine the level of ADA compliance required for the partnership. TNCs could be strategically utilized to cover trips that are not currently feasible within UTA's existing structure, such as emergency backup rides, late-night service gaps, or same-day trip requests that cannot be accommodated due to capacity constraints.

Table 2: Subsidy structure used by different agencies.

Peer Agency	Subsidy
DART	Customer Pays: First $3 Agency Pays: Up to $35
RTD	Agency Pays: Up to $25
PSTA	Customer Pays: $3.50 for the first four rides in a day; Customer Pays: $6.00 for the fifth trip and beyond

3.2 TNC and Paratransit Cost Calculation

Paratransit Cost Estimation

To calculate the cost of operating paratransit, we use the cost per passenger mile provided by UTA for 2022. This figure is calculated as Total Expenditure / Total Passenger Miles. For 2022, the total expenditure for paratransit services was reported as $30 million, while the total passenger miles traveled was 4.4 million miles. This results in a cost per passenger mile of $6.72. Therefore, the cost of a paratransit trip can be calculated by multiplying the cost per passenger mile by the paratransit distance traveled[3].

[3] The distance traveled was recalculated using reprocessed odometer data. Due to errors in the original data, the team employed an algorithm to reconstruct the vehicle pick-up and drop-off sequence for each trip, which was then processed through a locally hosted GraphHopper Routing API to determine accurate distances.

TNC Cost

To estimate the TNC cost, the team used the Uber Fare Estimator[4] for several representative locations. Based on these calculations, the total TNC cost is calculated as:

- **Base fare:** A fixed starting fee of $0.49.
- **Time component:** $0.27 per minute multiplied by the total trip time.[5]
- **Distance component:** $0.81 per mile multiplied by the total trip distance.[6]
- **Booking fee:** A fee calculated as $0.13 multiplied by the trip distance, plus an additional $2.6.

In other words, the TNC cost is the sum of the base fare, a time-based charge, a distance-based charge, and a booking fee that depends on both the distance and a fixed amount.

The derived fare model was validated against actual Uber fare estimates for different locations, resulting in a RMSE of 1.9, indicating strong alignment between the predicted and observed fares. The comparison results are presented in Table 3.

Table 3: Validating the TNC fare model

Location	TNC Estimated	TNC Actual (UberX)	Difference
1	$22.86	$19.59	$3.27
2	$8.61	$9.38	($0.77)
3	$11.46	$13.66	($2.20)
4	$10.23	$11.10	($0.87)
5	$23.40	$24.23	($0.83)
6	$4.08	$6.54	($2.46)
7	$11.31	$11.88	($0.57)
8	$6.47	$8.15	($1.68)
9	$17.64	$15.63	$2.01
10	$20.74	$18.51	$2.23

TNC rides are generally more affordable than traditional taxis, largely due to competitive pricing and efficient operations. However, these rides are also subject to algorithmically driven "surge pricing" during peak demand periods, which can significantly increase cost for passengers. Surge pricing is influenced by dynamic factors such as the number of users requesting rides, driver availability, and region-specific demand patterns. Given the variability and unpredictability of these factors, a straightforward approach to estimate the impact of surge pricing is to apply a peak hour surge multiplier to the base TNC cost.

Peak hours can be easily identified using ridership data, as illustrated in Figure 6. The analysis shows that peak times typically occur between 6 and 9 a.m., and again from 1 to 4 p.m. During these periods, higher traffic volumes and extended travel times lead to increased demand for rides, triggering surge pricing. Based on the observed patterns, a surge multiplier of 2 is applied to all trips where the pick-up time falls within the identified peak hour windows. This conservative multiplier reflects common industry practices and accounts for the elevated pricing that passengers are likely to encounter during high-demand periods.

[4] https://www.uber.com/global/en/price-estimate/

[5] For comparison purposes, the team assumed an average speed of 25 mph to calculate the trip time component in the TNC cost model.

[6] The trip distance was calculated using the GraphHopper API to determine the shortest path between pick-up and drop-off locations. This routing did not account for real-time traffic conditions and assumed maximum speed limits, resulting in fare estimates that represent lower bounds or best-case scenarios.

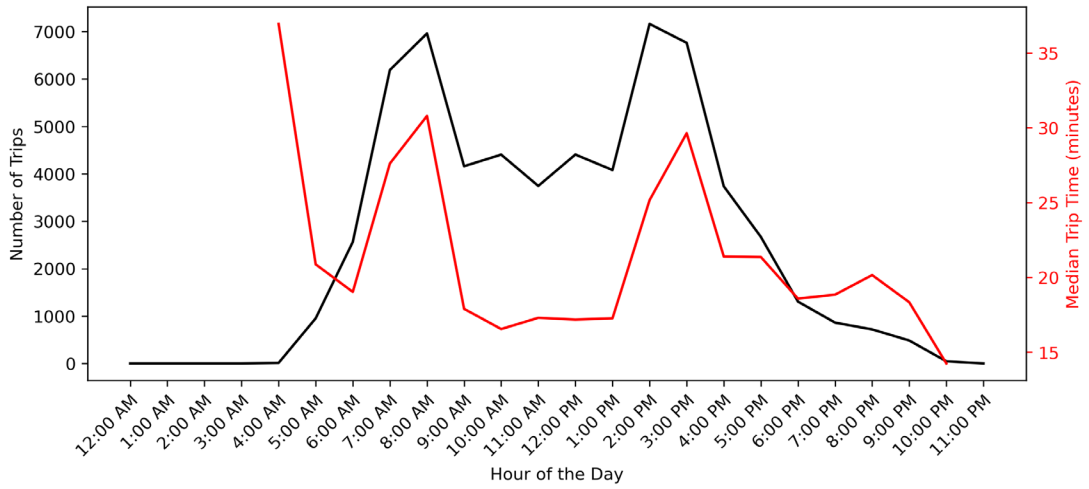


Figure 6 – Number of Trip Requests and Median Travel Times Across Different Hours of the Day: The figure displays the distribution of trip requests alongside the median travel times throughout the day. The data serves as the basis for applying a surge multiplier in cost estimates during these peak periods, from 6 to 9 a.m. and from 1 to 4 p.m., where higher trip volumes and extended travel times are recorded.

Taxicab Fare

TNCs have historically received substantial venture capital funding to accelerate their growth. This funding has allowed them to subsidize various aspects of their operations, including marketing, technology development, and driver incentives. These subsidies have kept ride prices lower than what would be sustainable under normal market conditions, raising concerns that current TNC pricing may not fully reflect long-term operational costs. Therefore, to estimate a higher bound for the TNC cost, it is sensible to also consider traditional taxicab fares, which are less influenced by such subsidies.

For this analysis, the team uses the fare structure provided by Yellow Cab Utah as a benchmark. The taxicab fare was calculated using a base fare of $2.50, plus an additional charge of $2.50 per mile traveled, providing a simple cost estimate based on distance alone. In this fare model, the initial $2.50 is a fixed charge known as the "flag drop fee", which is automatically added when the meter starts to account for the cost of short rides.

This traditional taxicab fare model serves as a useful comparison to the subsidized TNC fare structure. By incorporating both lower-bound TNC estimates and higher-bound taxicab estimates, UTA can better understand the range of potential costs associated with integrating TNC services into paratransit operations.

Figure 5 illustrates the relationship between trip distance and cost across different transportation modes, including paratransit, TNC, and taxi services. For instance, at a distance of 10 miles, the average cost for a paratransit trip is approximately $67, while the cost for a TNC ride ranges from $20 (without surge pricing) to $40 (with surge pricing). In comparison, the cost for a taxi ride is around $30.

The figure clearly shows that TNC services, without surge pricing, offer the lowest cost, followed by

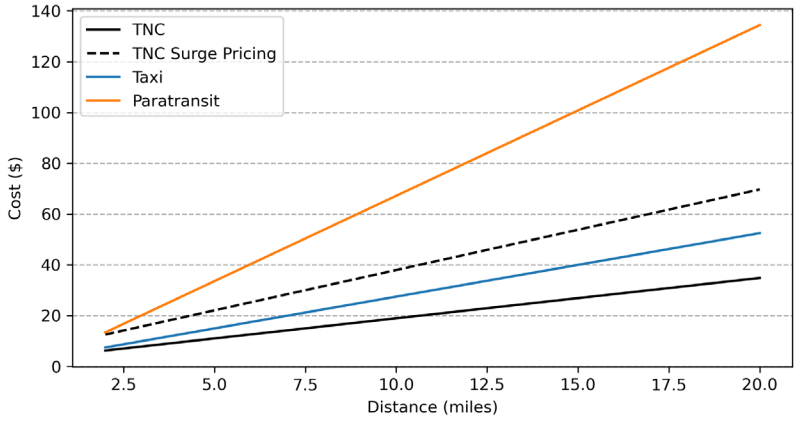


Figure 5 – Cost Comparison for Paratransit, TNC, and Taxi Services Across Different Trip Distances: The figure compares the cost of paratransit, TNC (with and without surge pricing), and taxi services across varying trip distances. As shown, paratransit consistently incurs the highest costs, particularly over longer distances. TNC services, even with a surge multiplier of 2, remain more affordable than paratransit. The lower bound of TNC costs (without surge pricing) offers the most cost-effective option, followed by traditional taxi services.

traditional taxi services and TNC rides with surge pricing. This visual comparison highlights the upper and lower bounds of TNC costs, demonstrating TNC services remain competitive with traditional taxi fares while still being significantly cheaper than paratransit.

3.3 TNC Potential Cost Saving

In calculating the cost to UTA under these subsidy models, the team focuses on trips where the rider's co-pay remains within a reasonable range — specifically, where it does not exceed the current paratransit fare of $4. For example, if a TNC trip costs $40 and UTA's subsidy covers only $35, the rider's co-pay would be $5, exceeding the $4 paratransit fare. In such cases, this trip would not be considered suitable for TNC service under the given subsidy model.

Beyond the financial considerations for UTA, it is important to acknowledge the potential for TNC integration to improve the rider experience through reduced travel times. While this study did not quantify potential time savings, the on-demand nature of TNCs, combined with their ability to utilize real-time traffic information and potentially more direct routing, suggests that wait times and overall trip durations could be shortened for many paratransit users, compared to traditional pre-scheduled service.

Based on the different subsidy models analyzed, UTA can anticipate the following cost outcomes as shown in Table 4:

Table 4: TNC cost for different subsidy models

Subsidy	Trips Outsourced	Paratransit Cost	Outsourcing Cost	Total cost	Saving
Fixed-based	45,627	$1,874,000	$640,000	$2,931,000	$1,234,000
Distance-based	50,367	$2,101,000	$826,000	$2,890,000	$1,275,000
Co-pay	45,627	$1,874,000	$475,000	$2,766,000	$1,399,000
Paratransit service	67,439 eligible	$4,165,000			

It is important to note that the number of trips outsourced for the fixed-based and co-pay subsidy models is the same (45,627 trips). This is because both models assume a maximum UTA contribution of $20 per trip, and based on the prior assumption made, only trips where the rider's co-pay does not exceed $4 are considered. However, under the co-pay model, riders consistently contribute an additional $4, which results in a lower overall outsourcing cost compared to the fixed-based model.

In terms of cost efficiency, the co-pay subsidy model emerges as the most favorable, delivering the highest savings at $1,399,000 compared to the baseline paratransit cost of $4,165,000. Despite outsourcing the same number of trips as the fixed-based model, the co-pay approach reduces UTA's cost by requiring a consistent rider contribution. The distance-based subsidy, while outsourcing more trips (50,367), incurs higher outsourcing costs due to covering trips up to 10 miles entirely. However, it still offers substantial savings compared to the existing paratransit operations. This model is more advantageous for shorter trips, especially in low-demand areas, where the cost of traditional paratransit would be disproportionately high.

Figure 7 illustrates the variation in total cost to UTA for different ranges of subsidy parameters across the fixed-based, distance-based, and co-pay models. The x-axis represents the dollar amount of the subsidy, while the secondary x-axis shows the miles covered under the distance-based model. As shown, the co-pay subsidy model is consistently cheaper to implement on average, although the cost

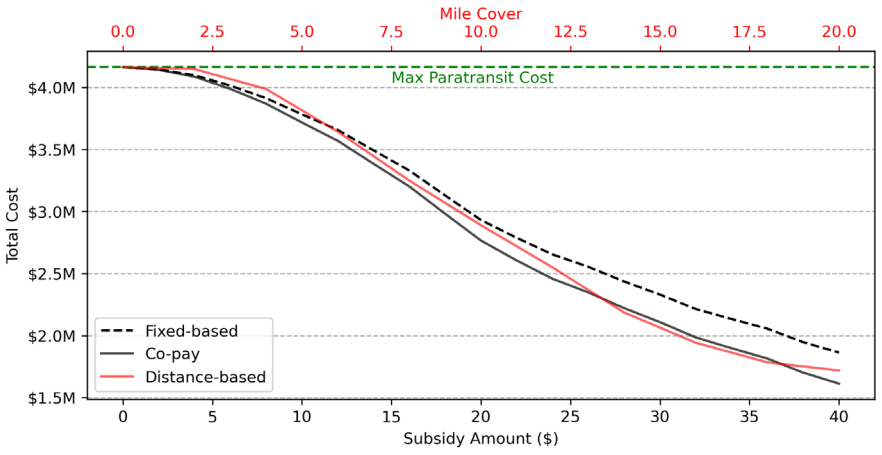


Figure 7 – Comparison of Total Cost for Various Subsidy Models: The figure shows how the total cost to UTA varies with changes in subsidy amounts (in dollars) and miles covered for different subsidy models. The co-pay subsidy model consistently demonstrates lower total costs compared to the fixed-based and distance-based models, although the differences between the models are relatively small.

difference between the subsidy models is relatively small.

Moreover, as shown in Figure 8, the average cost per trip for UTA under the TNC subsidy models is approximately $10, which is sufficient to cover 50% of all customers. This represents an 86% reduction in cost per trip compared to the traditional paratransit service, which averages $73.59 per trip. The significant cost savings highlight the potential of integrating TNC services as a more efficient and sustainable alternative for certain trip types, while still maintaining accessibility for a broad range of users.

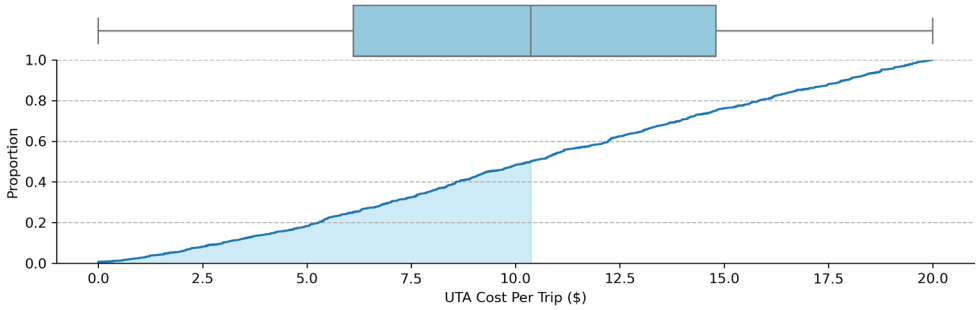


Figure 8 – UTA Cost per Trip Distribution under Co-Pay Subsidy Model. The plot indicates that for 50% of all customers under co-pay subsidy model, UTA average trips cost is at most $10, significantly less than compared to the traditional paratransit service cost of $73.59 per trip.

3.4 Voluntary Adoption of TNC Services Among Paratransit Riders

The integration of TNCs into UTA's paratransit service is designed to be voluntary, allowing riders to opt in based on their preferences and trip needs. Given this flexibility, the actual percentage of passengers who choose to shift from traditional paratransit to TNC services will vary. Additionally, the introduction of TNC options may lead to "net new rides," where passengers who previously did not use paratransit services decide to utilize the new TNC offerings. This could potentially increase overall ridership, adding another dimension to the cost implications.

To better understand the potential cost implications, several scenarios were simulated with different percentages of passengers opting to use TNC services. These simulations provide estimates of the overall cost savings and identify tipping points where the shift yields the most significant financial benefits.

Figure 9 shows total cost saved by UTA for different percentage of rider shift from 0 to 100%. For each scenario, the cost was calculated using the co-pay subsidy model, which emerged as the most favorable based on previous analyses. The results indicate as the percentage of passengers opting for TNC increases, the total cost to UTA decreases proportionally due to the lower per-trip cost associated with TNC services.

The voluntary nature of TNC adoption adds a layer of unpredictability to these cost estimations. Rider education, targeted outreach, and user experience during the initial pilot phase will be key factors influencing the percentage of passengers willing to transition to TNCs. Monitoring adoption rates and collecting feedback

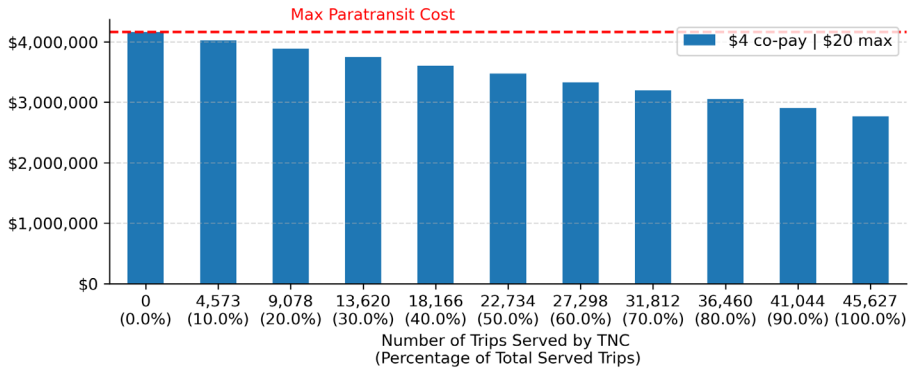


Figure 9 – Total Cost Savings Based on Percentage Shift to TNC Services: The figure illustrates the relationship between the percentage of paratransit riders shifting to TNC services and the corresponding total cost savings for UTA. As the percentage of riders opting for TNCs increases, the cost savings become more significant,

during the pilot phase will be critical for refining the subsidy models and adjusting the cost strategies to maximize savings while ensuring equitable access across the service area. Furthermore, UTA could consider offering incentives to encourage riders to choose TNC services for eligible trips. These incentives could include offering a free trip after a certain number of TNC rides and/or providing a discount on TNC trips compared to the standard paratransit fare.

3.5 Is TNC a Viable Solution?

Collaborating with TNCs to complement specific ADA paratransit trips could offer UTA a strategic opportunity to reduce operating costs while enhancing service flexibility. However, successful implementation will require addressing several operational challenges and considerations:

- **Scheduling and dispatching:** Ensuring seamless coordination between paratransit and TNC services is crucial. Advanced scheduling systems that integrate both traditional and TNC platforms are needed to optimize dispatching and minimize service gaps, especially during peak times.
- **Driver screening and specialized training:** While TNCs already conduct background checks and basic driver screenings, paratransit services require additional specialized training, particularly regarding ADA compliance, sensitivity training, and assistance for passengers with disabilities. If UTA were to offer a separate, supplemental service using TNCs that is beyond the required ADA-complementary paratransit service, and this supplemental service were not designated as part of the mandated ADA paratransit, then the full scope of ADA paratransit driver training and background check requirements might not be mandatory for that specific, supplemental service. It is highly recommended to check with the FTA on those requirements. However, it is crucial to clearly communicate to riders using any such non-ADA-designated TNC service that the drivers may not have undergone FTA-level background checks or specialized ADA training and that the service may not meet all ADA paratransit standards. This transparency is essential for informed consent.
- **Negotiated rates and fare structures:** Establishing cost-effective pricing models that benefit both UTA and passengers while still providing incentives for TNC participation is a key factor. Negotiating favorable rates with TNCs is critical to maintaining affordability while ensuring the service remains financially sustainable.
- **Accessible vehicles:** A significant limitation of current TNC services is the lack of wheelchair-accessible vehicles (WAVs). While agencies like the PSTA have partnered with specialized providers to address this gap, ensuring a sufficient supply of WAVs remains a challenge, particularly given that TNC vehicles are owned by individual drivers. UTA would need to explore a range of options, which might include: 1) offering financial incentives (e.g., higher fares, subsidies) to encourage drivers to purchase and operate WAVs, 2) contracting with companies that specialize in providing accessible transportation, or 3) requiring a percentage of TNC vehicles to be WAV.
- **Service reliability and equity:** Although TNCs offer flexibility and lower costs, they may not fully cover the diverse needs of all paratransit users, particularly those in low-density or underserved areas. UTA would need to evaluate how TNC integration could maintain equitable access for all eligible riders.
- **Data integration and performance monitoring:** To effectively integrate TNCs, UTA needs strong data-sharing agreements that enable monitoring of performance and service quality. For TNC services operated separately from ADA requirements, it remains important to track key metrics and ensure transparency about the level of service provided to riders who opt out of ADA-compliant trips. For instance, GoLink, a microtransit service integrated into the DART system, uses the GOPASS app to track average rider ratings. Contractors are required to maintain a high average rating, typically 4.95 out of 5 stars, with financial penalties imposed for non-compliance.

In this analysis, the co-pay subsidy model was applied, where UTA would outsource 45,627 trips (or 15% of total 2022 trips) to TNCs. Under this model, riders pay a $4 co-pay, while UTA covers up to $20 of the remaining fare. Additionally, traditional taxi services were used as a benchmark to evaluate the feasibility and practicality of TNC pricing. The analysis aimed to determine whether the dynamic, demand-driven pricing of TNCs could deliver a cost-effective alternative to paratransit services. Table 5 shows the overall cost of outsourcing the potential and feasible trips to TNCs or taxi services. The analysis reveals that if 45,627 trip candidates were to continue using traditional paratransit services, UTA would pay roughly four times the cost of the other alternatives.

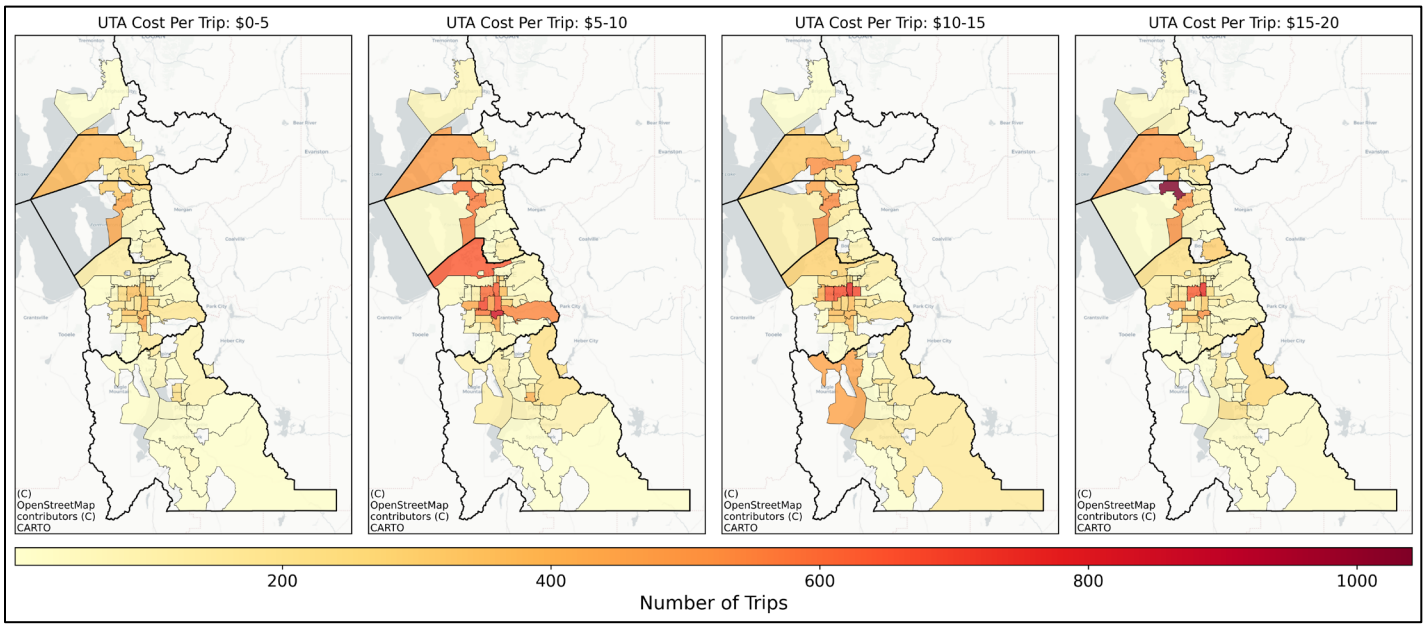


Figure 10 – Geographic Distribution of UTA Paratransit Costs Per Trip by Price Range Across the Service Area: The maps display the distribution of UTA paratransit costs per trip by pick-up location across different regions within the service area, highlighting patterns in key cities and regions. In the central Salt Lake City area, including downtown and South Salt Lake, there is a high concentration of trips in the $15-20 range due to higher demand and urban density. Meanwhile, suburban areas like Draper, Clearfield, and Ogden exhibit a mix of lower-cost trips ($0-5) and mid-range trips ($5-10), reflecting lower-density service areas but consistent trip demand. In the Provo region, a more balanced cost distribution is observed, with a significant portion of trips falling in the $10-15 range. This spatial variation provides insights into overall trip patterns and how costs differ depending on trip density and regional characteristics across UTA's paratransit service area.

While traditional taxis offer a predictable, fixed fare structure, the dynamic pricing of TNCs — which fluctuates based on demand, time of day, driver availability, and other factors — resulted in a similar overall cost to UTA. In the taxi benchmark scenario, the same fare structure was assumed, where passengers would still pay a $4 co-pay, and UTA would cover the remaining cost up to $20. This comparison revealed that, even with the variability of TNC pricing, the costs align closely with those of the taxi model when managed within the established subsidy limits.

Despite the comparable cost structures, TNCs present several distinct advantages over traditional taxi services. For example, TNCs offer greater flexibility in service provision, allowing for real-time adjustments based on demand. This flexibility is particularly beneficial in paratransit, where riders' needs can be unpredictable and efficient scheduling is crucial. Moreover, TNC platforms provide enhanced real-time tracking and communication features, giving riders greater confidence and control over their trips.

The cost per outsourced trips and their patterns across UTA's service area as shown in Figure 10 reveal critical insights into the distribution of paratransit demand. In the $0-5 range, we observe a relatively even distribution of low-cost trips throughout the service area, with higher concentrations in suburban regions like Draper, Clearfield, and Ogden. These likely represent short, within-county travel distances, indicating efficient local service in these areas. As we move to the $5-10 range, there's a noticeable increase in trip volume, particularly in central Salt Lake City and its immediate suburbs. This price bracket might capture a mix of longer within-county trips and shorter between-counties journeys, reflecting the growing riders' needs as distances increase. The $10-15 and $15-20 cost range maps reveal several high-volume locations, particularly in Central Salt Lake City, Clearfield, Ogden, and Provo. These price ranges likely reflect trips that involve travel beyond a rider's immediate vicinity to various destinations across the service area, such as activity centers and other key locations.

Table 5: Total Cost of TNCs and Taxi Services

Transportation Mode	Outsourcing Cost To UTA
Paratransit	$1,874,000
TNC	$475,000
Taxi	$509,000

The patterns suggest that TNCs could replace certain paratransit trips more cost-effectively, particularly in areas where there is consistent demand and the

current costs are higher, such as central Salt Lake City. By understanding these cost distributions, UTA can better identify where TNC services are likely to offer the greatest financial benefits.

All in all, TNC services, when implemented under the right subsidy model, particularly the co-pay approach, can deliver financial outcomes that are comparable to or even more cost-effective than traditional paratransit service, while remaining competitive with traditional taxi services. When considering the broader advantages, TNCs emerge as a compelling alternative for enhancing service efficiency, improving rider experience, and maintaining financial sustainability in UTA's paratransit program.

4. Opportunity #2: Beyond the ¾-Mile

The expansion of paratransit service coverage beyond the standard ADA-mandated ¾-mile boundary has been a growing area of interest among transit agencies nationwide. As demand for more inclusive and accessible transportation options rises, many agencies are exploring ways to extend their paratransit service areas, thereby enhancing access for underserved populations. This approach is not without challenges, as expanding coverage typically results in increased operating costs and requires careful planning to ensure sustainability and equity.

For example, the Rhode Island Public Transit Authority (RIPTA) conducted a statewide Paratransit Expansion Study to assess the feasibility, and costs associated with extending their RIde Paratransit Program service beyond the ADA minimum. The study projected that expanding service statewide would lead to a 31% to 33% increase in ridership, with operating costs rising by 50% to 59%, or approximately $5.4 to $6.4 million annually. The expansion would also require a capital investment of around $3.9 to $4.2 million, emphasizing the financial considerations involved in extending service coverage.

Similarly, the Niagara Frontier Transportation Authority (NFTA) initiated a comprehensive evaluation of its Paratransit Access Line (PAL) service in 2022 to explore opportunities for improving efficiency and expanding service beyond the current ADA-required coverage. The study, funded by the State of New York, examines the potential benefits of extending paratransit service into areas not currently served within Erie and Niagara counties. By gathering input from users and conducting cost-benefit analyses, NFTA aims to identify strategies for enhancing service quality while balancing the financial implications of expanded coverage.

Implementing an expansion beyond the ¾-mile boundary offers several benefits:

- **Increased accessibility:** extends paratransit services to more areas, particularly those in underserved areas or AoPP
- **Improved customer satisfaction:** provides additional transportation options to riders who have struggled to access UTA services due to geographic limitations as indicated in the community surveys, potentially improving overall satisfaction and ridership
- **Flexibility in service models:** allows UTA to explore various models, such as premium fare zones to balance cost and service delivery

This section evaluates the potential benefits and challenges of expanding beyond the ¾-mile boundary. Considerations include analyzing the cost implications of additional service coverage and determining appropriate fare structures (such as premium fares for extended zones) for multiple different scenarios.

4.1 Assessing the Feasibility of Coverage Expansion

This analysis focuses on evaluating different paratransit coverage expansion strategies, incorporating both demand estimation and financial considerations as detailed in Figure 11. The team begins by evaluating multiple expansion scenarios. Each scenario is assessed for operational feasibility, cost implications, and fare structure options to determine the most effective approach.

Coverage Expansion Scenarios

This study initially developed six key scenarios, each offering unique perspectives to expanding paratransit service coverage:

Scenario 1: Legacy Service Continuation

This scenario focuses on extending paratransit coverage to areas that may be impacted by the future removal of fixed routes. It ensures continuity of service for areas with residual demand that no longer fall within the ADA-required ¾-mile boundary. The scenario maintains the same fare structure as current ADA service, with minimal operational changes. It is a straightforward strategy with lower complexity, relying largely on existing infrastructure and ridership patterns.

Scenario 2: 1-Mile (or More) Coverage Expansion

This scenario involves a static or dynamic expansion of the service boundary by 1 to 2 miles beyond the current ADA limit. It aims to increase accessibility in suburban and rural areas that currently have limited paratransit coverage. Depending on the specific distance, the cost can range from moderate to high. The fare structure remains largely standard but may include a premium for extended coverage. Operationally, the expanded areas require new routing and scheduling strategies, especially in low-density regions.

Scenario 3: Paratransit Expansion Into IMZs

This approach expands paratransit services into existing or planned IMZs to further extend coverage. This continued expansion approach is ideal for regions where traditional coverage is inefficient or infeasible.

Scenario 4: Flex-Route Integration for Paratransit Passengers

This scenario explores enhancing the integration between UTA's existing Flex Routes and paratransit services to better serve paratransit-eligible individuals residing outside the standard ADA ¾-mile boundary. Currently, Flex Routes operate on fixed schedules but can deviate up to ¾-mile to accommodate rider requests, with limitations on the number of deviations per trip. To improve accessibility, this scenario considers targeted modifications, such as increasing deviation limits or expanding the allowable deviation distance. These adjustments aim to enhance service flexibility and coverage for paratransit users without requiring entirely new service structures. While this approach leverages existing infrastructure and appears cost-effective with minimal adjustments, it may significantly impact the rider experience for non-paratransit users and affect the on-time performance of fixed routes. Flex Route deviations offer a more flexible service option for riders near the current boundary but may introduce delays and variability in the schedule. The fare structure would largely remain unchanged, though a surcharge could be applied for deviations to account for any additional operational costs.

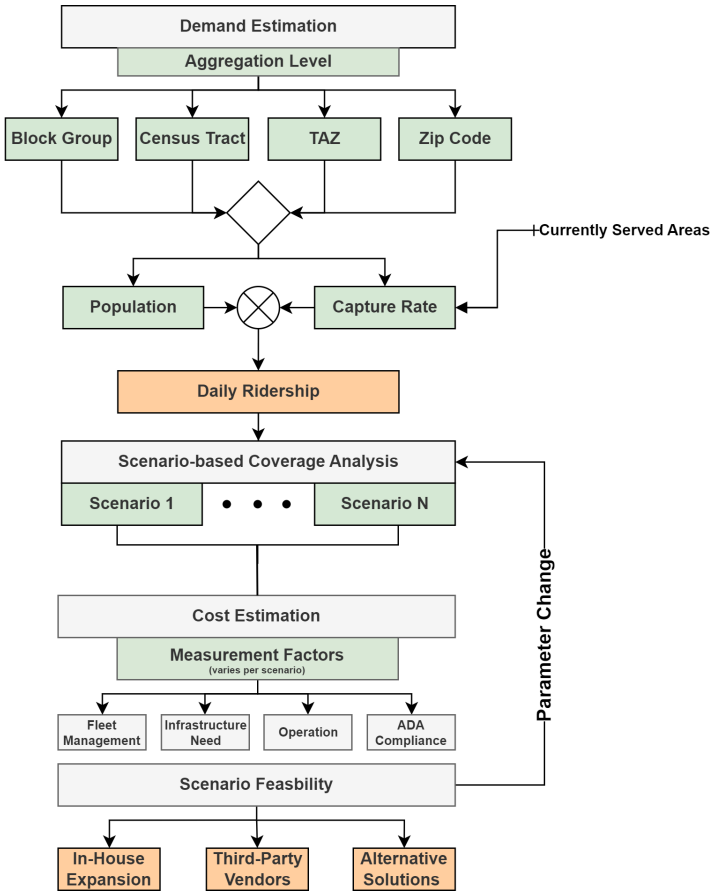


Figure 11 – Methodological Process for Coverage Expansion Analysis: The flowchart outlines the step-by-step methodological framework used in this analysis. The process begins with demand estimation, where population and disability data at the census tract level are used to project capture rates and ridership. This is followed by the definition of different expansion scenarios, each exploring various coverage distances and service models. For each scenario, the estimated number of additional trips is calculated, along with associated costs and potential fare structures. The analysis concludes with a comprehensive assessment of the financial and operational feasibility of each coverage option

Scenario 5: Partnerships With Complementary Services

This scenario involves partnering with TNCs, local shuttles, or other complementary services to extend paratransit coverage into areas that are challenging to serve with traditional paratransit models. This could include filling gaps during off-peak times or reaching low-density zones. The cost implications are moderate, as this approach leverages shared resources and reduces the need for direct investment in additional vehicles or staff. Fare structures can vary depending on agreements with partners, ranging from dynamic pricing to discounts for integrated services. Operational complexity is moderate, primarily requiring effective coordination and seamless integration of booking, dispatch, and payment systems. This approach focuses on expanding coverage rather than replacing current work performed by bargaining unit employees.

Scenario 6: Paratransit Premium Service Layer

This scenario introduces a premium fare layer that could be added to any of the proposed geographic expansions beyond the ADA ¾-mile boundary. Under this model, riders in these areas would pay higher fares for enhanced service options, such as extended service hours or faster response times. While this premium layer offers expanded coverage and improved service, it also brings operational complexity due to the implementation of tiered fare structures. Importantly, this scenario focuses on expanding service beyond the current requirements.

After multiple discussions with UTA, three alternatives were identified as most aligned with the agency's strategic goals and community needs as detailed in Table 6.

Scenario 1: Legacy Service Continuation is straightforward, offering a cost-effective solution with low operational complexity. It primarily restores service to areas with historical demand, maintaining continuity and ADA compliance. However, its impact is limited because it only benefits specific regions with past ridership, potentially overlooking areas with emerging needs.

In contrast, Scenario 2: 1-Mile (or More) Premium Expansion provides broader geographic coverage and enhanced service options through a tiered fare structure, making it more flexible and accessible for suburban and rural riders. Its strength lies in balancing accessibility with revenue generation, but it comes with higher operational costs and requires clear communication about fare tiers and service boundaries.

Lastly, as an extension of Scenario 2, Scenario 3: Paratransit Expansion Into IMZs allows paratransit vehicles to enter and operate within existing or planned IMZs. This approach provides additional coverage in areas beyond the standard ¾-mile boundary, in IMZs where service has already been expanded with on-demand to reach riders in regions where fixed-route services are less effective.

A critical consideration across all proposed paratransit coverage expansion scenarios is the issue of equity in transit access. While expanding paratransit service has the potential to improve mobility for individuals with disabilities, it is essential to ensure that these expansions do not inadvertently create or exacerbate inequities within the broader community. Specifically, UTA must consider whether proposed changes result in disparities in access between paratransit-eligible individuals and the general public, and between different socioeconomic groups. For example, expanding paratransit service without corresponding improvements in general public transit could lead to situations where paratransit users have greater access than other residents. Similarly, premium fare structures, while potentially improving cost recovery, could create barriers for low-income riders, limiting the accessibility benefits of expanded service.

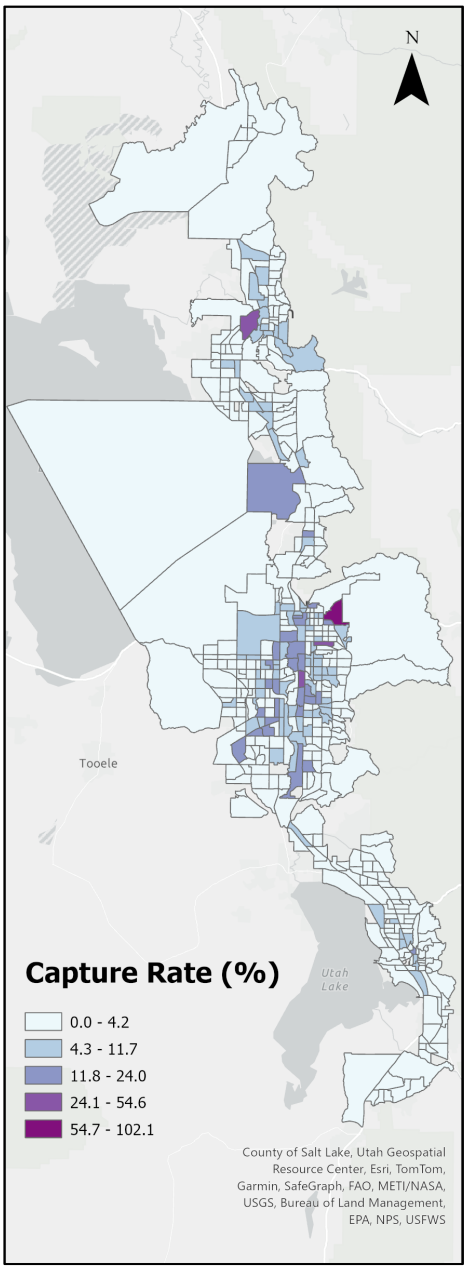


Figure 12 – Capture Rate Distribution Across UTA Service Region at the Census Tract Level: The figure presents the capture rate of paratransit usage within the UTA service area, broken down by census tracts. The map highlights significant variations in capture rates, with most tracts averaging a 3.95% capture rate. A focused analysis of morning pick-ups reveals lower capture rates, emphasizing routine home-based trip patterns.

Demand Estimation

The demand estimation process leverages population and disability data from the American Community Survey (ACS) 5-year estimates (2018-2022) at the census tract level to determine a capture rate — the percentage of the eligible population expected to use the service. The capture rate is calculated based on the current paratransit ridership within the areas already covered and the number of individuals with disabilities residing in these areas. By applying the

Table 6: Coverage Expansion Scenarios Comparison

Scenario	Coverage Expansion	Service Type	Target Areas	Cost Implications	Fare Structure	Operational Complexity	Rider Flexibility	Sustainability
Legacy Service Continuation	Reintroduces paratransit coverage in areas with discontinued fixed routes	Standard ADA-compliant service	Previously served areas with existing demand	Moderate cost due to existing infrastructure	Standard ADA fare structure	Enables fixed-route adjustments without reducing paratransit access	Service areas fixed	Maintains existing service with lower costs
1-Mile (or More) Premium Expansion	Extends service by 1 to 2 miles beyond the current boundary, with premium service options	Static or dynamic service with premium features	Suburban and rural areas with moderate demand	High due to expanded coverage and premium features	Tiered fare structure for extended coverage	Requires expanded zones and routing strategies	Riders can opt for additional distance and service enhancements	Requires ongoing investment to sustain service at scale
Paratransit Expansion into IMZs	Integrates paratransit within IMZs	Standard ADA-compliant service	Existing and planned IMZs	High initial cost, scalable long-term savings	Standard and tiered fare structure	Requires expanded zones and routing strategies	More coverage provided for riders inside IMZs	Adaptable model that scales with demand

calculated capture rate to the disability population in the proposed expansion areas, the team projects potential ridership across the new coverage zones. By applying the calculated capture rate to the disability population in the proposed expansion areas, the team provides a high-level estimate of potential ridership across the new coverage zones. While this method offers a granular estimation to guide planning, the exact demand will ultimately depend on several factors, including marketing efforts, the availability of other services, and fare structures.

Figure 12 illustrates the capture rate for the entire UTA service region at the census tract level. In the current service area, the average capture rate stands at 3.95%, reflecting the proportion of the disability population that uses paratransit services. However, when focusing specifically on morning pick-ups — typically trips originating from home — the capture rate drops to 1.6%. These trips are indicative of routine morning commutes. Notably, the University of Utah census tract exhibits an unusually high capture rate exceeding 100%, which has been excluded from the overall calculations. This anomaly arises due to the high volume of paratransit trips generated by the university's medical facilities and services catering to disabled students, combined with a very low residential population in that area.

The team also assumes the following assumption regarding the demand and ridership estimation:

- The projections assume an annual population growth rate of 2% for both current and expanded regions, reflecting expected demographic trends in the UTA service area.
- For the areas receiving new or maintaining paratransit coverage, a 1% increase in ridership per year is assumed, aligning with historical trends and anticipated demand growth.
- In cases where coverage overlaps between multiple census tracts, the overlapping area is proportionally considered to ensure accurate demand estimation, avoiding double-counting and ensuring that service expansion is properly aligned with actual demand.

Cost Estimation and Fare Structure Analysis

For each expansion scenario, the additional trips generated are estimated based on projected demand. The cost per trip is then calculated by considering the number of trips requested per rider. Using 2022 ridership data, it was observed that, on average, each rider requests approximately 160 trips annually. This is depicted in Figure 13, which highlights the distribution of annual trip requests per rider across the service region.

Additionally, the study assesses fare structure options, which may include:

- **Tiered fare models:** different fares based on the distance traveled beyond the standard coverage area
- **Premium pricing for extended service:** higher fares for premium zones that offer extended coverage or faster response times

4.2 The Five-Year Service Plan (FYSP) and Its Role in Paratransit Expansion

UTA is currently in the process of updating its Five-Year Service Plan (FYSP) for the period from 2025 to 2029. This plan serves as a strategic roadmap for UTA's near-term service changes, guiding decisions on new routes, alignment adjustments, and service discontinuations. The FYSP is a dynamic document that incorporates system-wide analysis, community feedback, operational considerations, and regional growth trends to ensure that UTA's transit network meets the evolving needs of its riders.

The 2025-2029 FYSP is designed to address several critical goals:

- **Restoring service:** providing transit coverage in areas where service will be reduced or discontinued as part of FYSP-related route changes
- **Expanding access to transit:** enhancing overall accessibility across the region to improve quality of life and support regional growth
- **Improving employee conditions:** optimizing shift patterns and operational efficiency, which ultimately benefits riders through more consistent and expanded service throughout the day
- **Aligning with the Long-Range Transit Plan:** preparing for future growth and ensuring that near-term service changes are in harmony with UTA's long-term strategic vision
- **Responding to community feedback:** engaging with communities to refine service plans based on public input and ongoing assessments

The service changes outlined in the FYSP include:

1. Adding coverage to growing or underserved areas
2. Modifying existing routes to improve efficiency, accessibility, and connectivity
3. Phasing out routes or segments that no longer meet demand or operational objectives

While these changes represent UTA's strategic direction for the coming years, at the time the analysis for this report was completed, the specific timing and phasing of service modifications had not yet been finalized. The phasing schedule has since been completed.

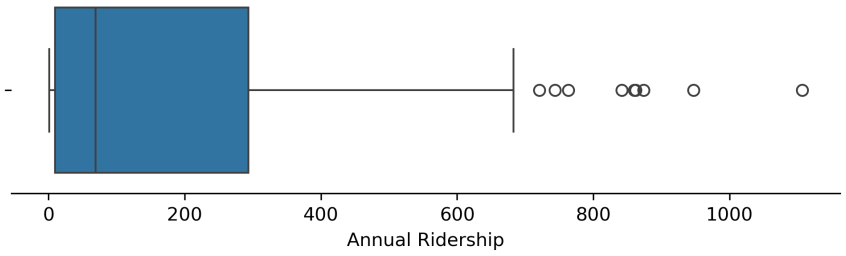


Figure 13 – Distribution of Annual Trip Requests per Rider: The boxplot illustrates the distribution of annual trip requests per rider based on 2022 data. The median value is around 160 trips per rider, with some riders requesting significantly more or fewer trips.

The success of the proposed paratransit coverage expansion scenarios is closely tied to the implementation of the FYSP. The FYSP serves as the foundation for identifying where and when paratransit services need to be adjusted or expanded. For instance:

- Scenario 1: Legacy Service Continuation would maintain paratransit service in areas where fixed routes are removed in the future, as part of the FYSP implementation. This aligns with FYSP goals of service continuity.
- Scenario 2: 1-Mile (or More) Premium Expansion builds on the new routes and realigned services introduced by the FYSP, extending coverage beyond the standard ADA-required radius.
- Scenario 3: Paratransit Expansion Into IMZs will be based on the creation of new service zones and adjustments under the FYSP.

Addressing Phasing Uncertainty

Given that the FYSP was in draft form at the time of analysis and the specific phasing of service changes has not yet been finalized, the team incorporates a Monte Carlo simulation approach. This method leverages random sampling to model various potential coverage scenarios over the five-year period (2025-2029). The simulation estimates when and where new coverage areas may be added, providing insights into the possible service expansions. Figure 14 illustrates the projected timelines and geographic locations for these coverage additions, along with the estimated demand generated from these newly served regions. This approach allows for a comprehensive assessment of how paratransit coverage could evolve in alignment with the FYSP's gradual implementation, even in the absence of a finalized phasing schedule.

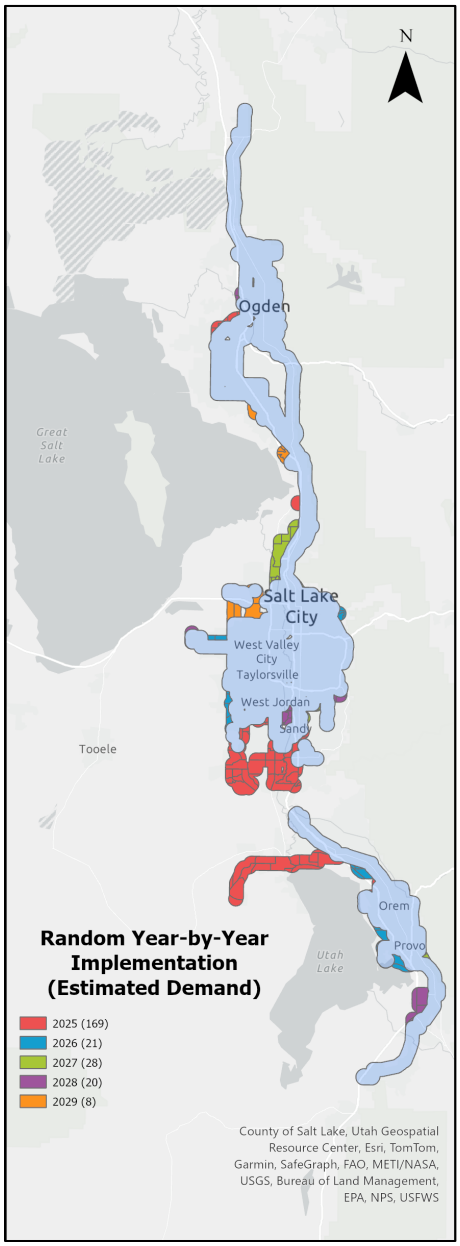


Figure 14 – Year-by-Year Implementation of Coverage Expansion under the FYSP: The figure illustrates a simulated projection of how new service areas might be incrementally added over the five-year period (2025-2029) based on a Monte Carlo simulation approach. The map highlights potential coverage expansions each year, showing both the geographical areas affected and the estimated demand generated from these regions.

4.3 Scenario 1: Legacy Service Continuation

This scenario focuses on maintaining paratransit coverage in areas that would lose access due to future changes in the fixed-route network as part of the FYSP implementation. It is not about retroactively restoring service that was removed in the past. Rather, it ensures that as fixed routes are potentially removed or realigned, paratransit service is preserved in those areas. The primary candidates for continued service are areas where:

1. The lost coverage does not overlap with newly planned coverage under the FYSP.
2. There are still customers in these areas actively using the service, evidenced by pick-up and drop-off activity.

Of the 25 areas that will lose coverage under the FYSP plan as illustrated in Figure 15, nine have been identified as strong candidates for legacy service continuation based on continued demand. These areas still have at least one active customer, making them viable for retaining service. In these nine areas, there were 1,946 pick-ups and 2,056 drop-offs recorded, accounting for 0.65% and 0.70% of total trips, respectively. Although these numbers are small relative to the overall service area, 40 riders in these zones represent approximately 2% of total customers, indicating a consistent but localized demand.

Table 7 outlines the projected costs associated with maintaining paratransit service in the areas identified for legacy service continuation. The cost estimates are based on the assumption that the fare structure will remain consistent with the current

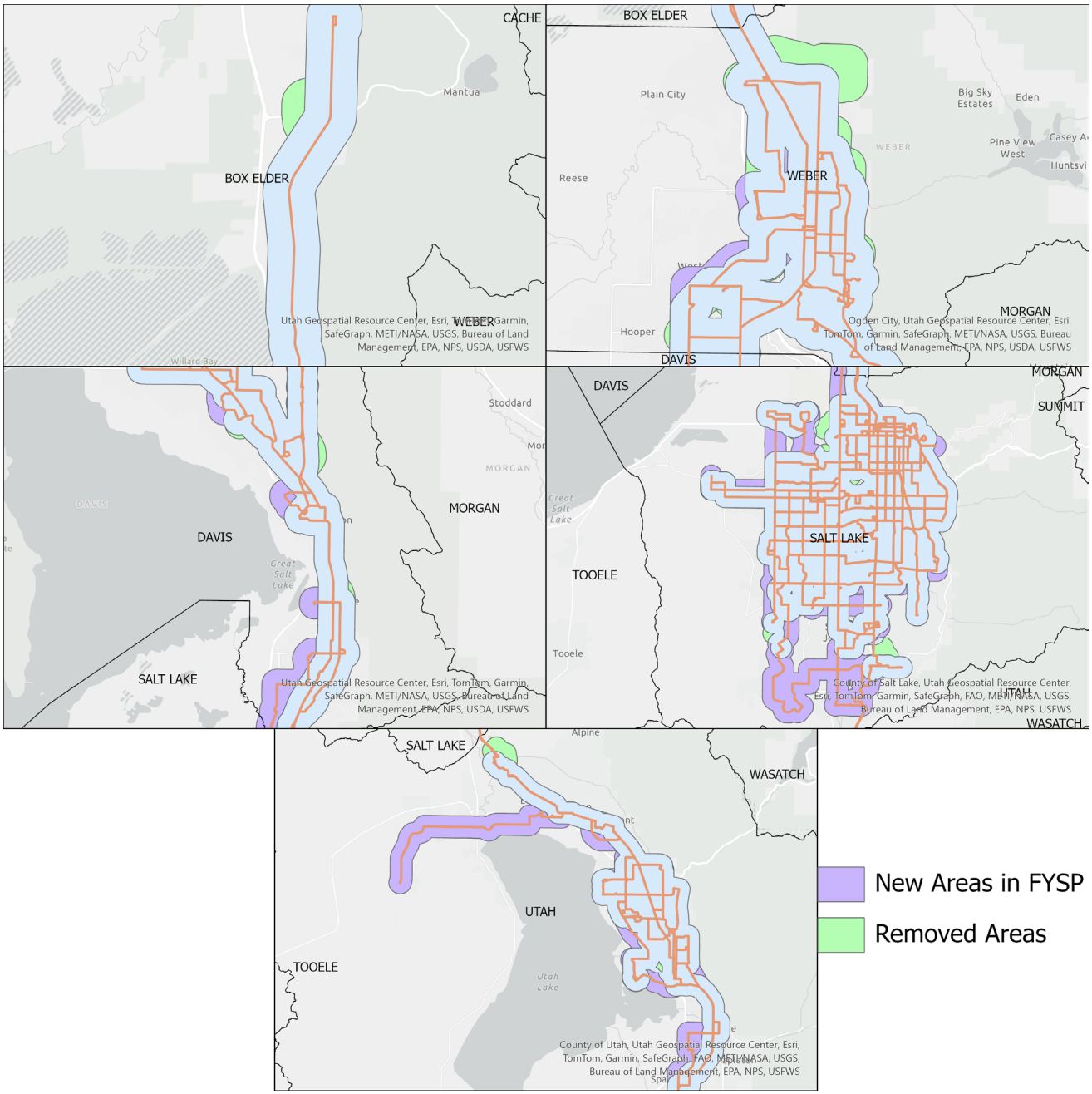


Figure 15 – New and Removed Service Areas in the FYSP: The figure presents a series of maps depicting the projected service changes under the FYSP, including both new and removed paratransit coverage areas over the next five years. The maps highlight regions where fixed routes will be added, adjusted, or discontinued, directly impacting paratransit service availability. The color-coded overlays show areas that are gaining coverage versus those that are losing it. It is important to note that, in accordance with ADA regulations, areas that fall outside the standard ¾-mile paratransit coverage, despite being fully enclosed by covered areas due to fixed-route service patterns, must still be included in paratransit service. These gaps, often referred to as "donut holes," are accounted for in coverage calculations to ensure they remain part of the total paratransit service area.

paratransit service ($4 per trip), and that the existing fleet is sufficient to accommodate the additional trips without requiring new vehicle purchases or operational changes. The cost per trip remains stable over the analysis period, with a slight annual increase reflecting incremental ridership growth. The projected total cost for this scenario over the five-year period is approximately $728,000. The farebox revenue generated at the current fare of $4 per trip is estimated to be around $8,100 annually, contributing a total of approximately $40,500 over five years.

Table 7: Cost Projections for Legacy Service Continuation

Year	Cost Based on $/Trip
2025	$143,000
2026	$144,000
2027	$146,000
2028	$147,000
2029	$149,000
Total	$728,000

4.4 Scenario 2: 1-Mile (or More) Premium Expansion

The 1-Mile (or More) Premium Expansion scenario builds upon the existing 2024 paratransit coverage and the upcoming expansions planned under the FYSP as explained earlier. The spatial expansion for this scenario is modeled across a range of incremental distances from the ADA-required ¾-mile buffer, extending from 0.25 miles (1 mile total) to as much as 1.25 miles (2 miles total).

UTA's paratransit currently serves five counties: Salt Lake, Davis, Weber, Utah, and parts of Box Elder. The population data for these counties, including the number of residents with disabilities, is sourced from the ACS. On average, 10% of the population across these counties has some form of disability as shown in Table 8, making them potential candidates for paratransit service.

Figure 16 below presents the percentage of the disabled population currently covered by UTA's paratransit service, as well as the expected coverage under the FYSP. Notably, Salt Lake, Davis, and Utah counties will experience an increase in coverage with the FYSP, while Box Elder and Weber counties are projected to see a decrease. The reduction in coverage for Box Elder and Weber counties can be observed in Figure 15, representing areas that will lose service under the new plan.

Building upon both the current and future FYSP coverage, this analysis examines the effects of incrementally expanding the service area beyond the minimum ADA ¾-mile boundary. By applying these expansions, the team assesses how many additional disabled individuals would be covered. However, it is important to note that these figures represent only the total population with disabilities covered, not the potential number of paratransit customers.

Table 8: Disability Population from the UTA Service Area

County	Population	Disability Population	Disability Rate
Salt Lake	1,173,416	116,735	10%
Utah	663,054	56,278	8%
Davis	358,634	33,087	9%
Weber	259,875	29,903	12%
Box Elder	57,914	6,549	11%
Total	2,512,893	242,552	10% (average)

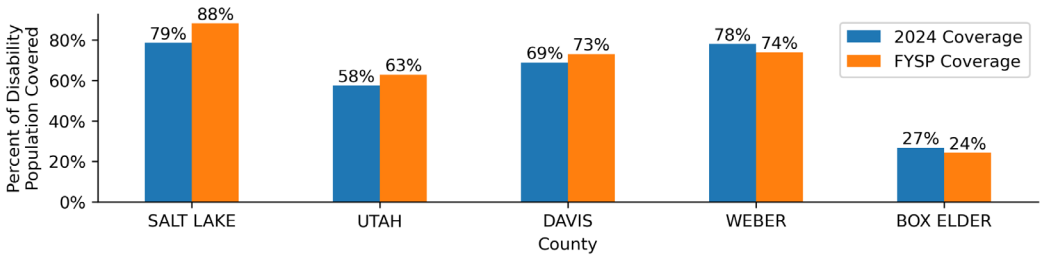
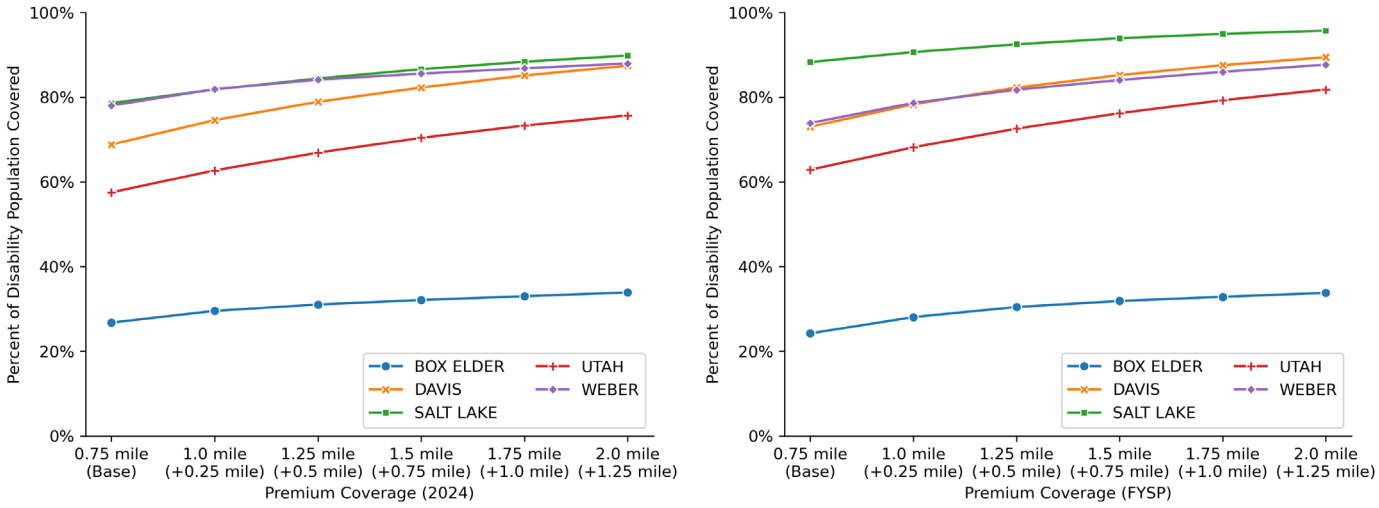


Figure 16 – Percentage of Disability Population Covered by Current and FYSP Paratransit Service: The figure shows the percentage of the disabled population covered under the current paratransit service and the projected coverage under the FYSP for five counties: Salt Lake, Davis, Weber, Box Elder, and Utah. The bars show that Salt Lake, Davis, and Utah counties will see a noticeable increase in coverage with the implementation of the FYSP, reflecting expanded service areas. In contrast, Weber and Box Elder counties are projected to experience a decrease in coverage,



(a) Current Coverage Expansion

(b) Current + FYSP Coverage Expansion

Figure 17 – Percentage of Disability Population Covered by Current and FYSP Paratransit Service: The figures compare the impact of incrementally expanding paratransit coverage under two cases: (a) current coverage only and (b) current coverage combined with FYSP expansions. Both cases show steady increases in the percentage of the disabled population covered as the boundary extends. However, the addition of FYSP coverage yields the highest population coverage, especially in Salt Lake and Davis counties. Box Elder County, due to its dispersed population, sees minimal gains in both cases.

The FYSP already includes planned fixed-route expansions, which will automatically extend paratransit coverage within the ADA-mandated ¾-mile radius of those new routes. These FYSP-driven expansions will significantly increase the percentage of the disabled population covered by paratransit, particularly in Salt Lake, Davis, and Utah counties.

Scenario 2, however, explores additional expansions beyond the areas covered by the FYSP. This scenario examines the impact of extending the paratransit service boundary by an additional 0.25 to 1.25 miles beyond the ¾-mile boundary that will exist after the FYSP is implemented. Figure 17 (a) and (b) illustrate this concept. Figure 17 (a) shows the percentage of the disabled population covered by incrementally expanding from the current (pre-FYSP) ¾-mile boundary. Figure 17 (b) shows the percentage covered by incrementally expanding from the future ¾-mile boundary that will exist after the FYSP expansions are in place. While both figures show increasing coverage with wider boundaries, the key takeaway is that the FYSP itself provides a substantial increase in coverage.

The dispersed and rural nature of Box Elder County results in lower population densities, making it difficult to achieve significant coverage gains even with expanded service boundaries, whether through the FYSP or through additional expansions. Therefore, the remainder of this analysis focuses on the post-FYSP coverage as the baseline. This allows us to isolate the impact of the additional expansions proposed in Scenario 2, beyond the improvements already planned under the FYSP.

Furthermore, the demand estimation in this scenario follows a similar approach as described in Scenario 1, using the capture rate to calculate the potential number of riders in the expanded areas. However, it is important to account for the fact that demand does not materialize immediately; there is typically a ramp-up period as customers gradually adopt the newly expanded service.

Therefore, the team adjusted the projections to include a phased increase in ridership over time, beginning with a lower initial demand and gradually building up to the estimated levels. The details can be found in the Appendix.

Estimated Additional Riders and Costs in Premium Coverage Areas

Figure 18 illustrates the projected number of additional riders in the premium coverage zones for each year. The base scenario reflects only the ridership within the ¾-mile coverage, including the newly covered areas under the FYSP. As 0.25-mile increments are added, there is a notable increase in potential customers — particularly in the first 0.25-mile extension, which results in a 270% increase in riders compared to the base coverage. However, as the premium coverage expands further, the incremental increase in additional customers becomes less significant, indicating diminishing returns in extended coverage areas.

Table 9 shows the total number of customers projected for the current coverage area, alongside the additional customers expected under each premium expansion distance. For example, extending coverage to 1.5 miles (double the current ADA requirement) by 2029 results in a total of 3,124 customers (2,043 from current coverage plus 1,081 from the premium zones). The data demonstrates that while customer numbers increase significantly as coverage expands, the rate of growth tapers off as the boundary extends beyond 1.5 miles.

As discussed earlier, assuming each customer makes approximately 160 trips per year at a cost of $73.59 per trip (based on 2022 estimates), Table 10 outlines the projected costs for each expansion scenario.

Moreover, Figure 19 shows the total costs incurred by UTA by the end of FYSP (2029) under each expansion scenario. Extending the coverage to 1.5 miles increases the total cost by approximately 43% compared to the base coverage. However, further expansions result in smaller gains in customer numbers while significantly driving up operational costs. This highlights the need to carefully balance coverage expansion with the financial implications, particularly in areas with lower demand.

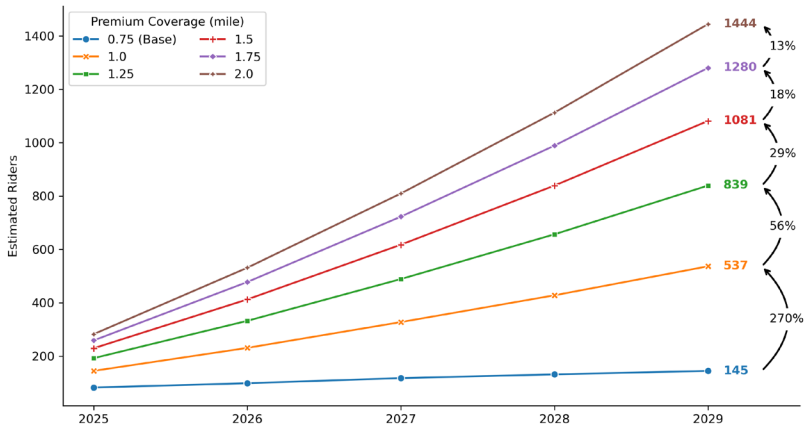


Figure 18 – Projected Additional Customers in Premium Coverage Expansion Scenarios (2025-2029): The figure illustrates the estimated number of additional customers for each year under different premium expansion scenarios. The baseline represents the current ¾-mile ADA coverage, while the subsequent lines show the incremental gains as coverage is extended by 0.25-mile increments up to a total of 2 miles. The largest increase in customer numbers occurs when the coverage is extended from ¾ mile to 1 mile, with a 270% rise in potential customers. However, as the premium coverage expands further, the rate of customer growth tapers off, indicating diminishing returns for extending coverage beyond 1.5 miles.

Table 9: Projected Number of Customers in Current and Premium Expansion Coverage Areas (2025-2029)

Year	Current Coverage Customers	Additional Customers - Premium Expansion (mile)					
		3/4 (base)	1	1.25	1.5	1.75	2
2025	1,964	82	145	193	230	259	283
2026	1,983	99	231	332	413	478	531
2027	2,003	118	328	489	618	723	810
2028	2,023	132	428	657	839	989	1,113
2029	2,043	145	537	839	1,081	1,280	1,444

Table 10: Estimated Costs for Current and Premium Expansion Coverage Areas (2025-2029, in Millions)

Year	Cost (Millions) - Premium Expansion (mile)					
	3/4 (base)	1	1.25	1.5	1.75	2
2022	22.4	-	-	-	-	-
2025	24.1	24.8	25.4	25.8	26.2	26.4
2026	24.5	26.1	27.3	28.2	29	29.6
2027	25	27.4	29.3	30.9	32.1	33.1
2028	25.4	28.9	31.6	33.7	35.5	36.9
2029	25.8	30.4	33.9	36.8	39.1	41.1

To evaluate the financial viability of the premium service expansion, the team first assumes the current $4 fare for various expansion distances. Table 11 shows the projected fare revenue, trip costs, and farebox recovery rates for each expansion scenario.

The farebox recovery at the current $4 fare is limited, covering only a small percentage of the additional costs, especially as the expansion distance increases. For example, with a 1-mile expansion, fare revenue covers just over 5% of the total costs. To improve cost recovery, the team explores alternative fare structures, including a fixed premium fare and a tiered premium fare.

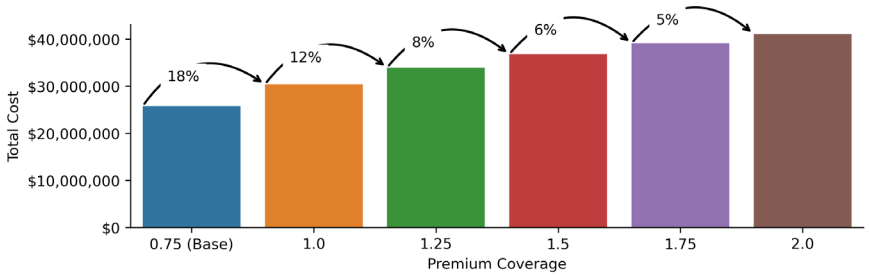


Figure 19 – Total Projected Costs for Premium Coverage Expansion by 2029: The figure presents the total projected costs for each premium coverage expansion scenario at the end of the FYSP period (2029). The base scenario, representing the current ¾-mile ADA coverage, serves as a benchmark, with costs estimated at approximately $25.8 million. As coverage expands incrementally from 1 mile to 2 miles, the total costs rise sharply.

Premium Fare Structure

The analysis of premium fare structures across various transit agencies is shown in Table 12, which provides insights into the diverse approaches taken to balance service expansion and cost recovery. The premium fares range significantly depending on the service area size, population density, and the extent of coverage beyond the ADA-required ¾-mile boundary. The key takeaways from the comparison are as follows:

Table 11: Projected Costs, Revenue, and Farebox Recovery for Expanded Coverage Areas at a Fixed $4 Fare (2025-2029)

Expansion (mile)	Total Customers	Trip Cost	Fare Revenue
0.25	537	$6,323,000	$344,000
0.5	839	$9,879,000	$537,000
0.75	1,081	$12,728,000	$692,000
1	1,280	$15,071,000	$819,000
1.25	1,444	$17,002,000	$924,000

- **Neighboring zones vs. distance-based tiers:** Many agencies, such as the Greater Richmond Transit Company and Massachusetts Bay Transportation Authority, utilize a "Neighbor" fare structure where a premium fare is charged for trips extending into adjacent zones or areas beyond the standard coverage. For example, these agencies typically double the base fare, charging $6 to $7 for premium services in neighboring zones.
- **Distance-based premium fares:** Other agencies, such as Santa Clara Valley Transportation Authority (VTA) and Central Oklahoma Transportation and Parking Authority, implement distance-based premium fares that increase as the distance from the core coverage area grows. VTA, for instance, charges a significant premium fare of $16 for trips extending more than 1 mile beyond the ADA boundary, reflecting the higher operational costs associated with servicing less dense areas.
- **Service area and fare flexibility:** Agencies serving larger, more densely populated areas tend to offer more varied premium fare structures. For example, Omnitrans in San Bernardino and Central Oklahoma Transportation and Parking Authority use a zoned fare system where the premium increases incrementally as trips cross into additional zones. This allows for a flexible pricing strategy that can better align with varying operational costs across different parts of the service area.
- **Impact of fare on cost recovery:** The varied premium fare structures demonstrate that higher fares are often necessary to recover costs in areas with lower population densities or greater service distances. Agencies like the Des Moines Area Regional Transit Authority, which charges up to $30 for trips in expanded zones.

In terms of the fixed fare structure, Table 13 shows farebox recovery ratio for different fixed premium fare. For example, introducing a $9 premium fare (an additional $5 above the current fare) would result in a farebox recovery rate of approximately 12%, which is substantially higher than the recovery at the current $4 fare.

Moreover, the heatmap in Figure 20 shows the total farebox recovery (including the existing ¾-mile coverage) for different premium fares and expansion distances. At $9 fare, the overall farebox recovery reaches around 7.8% for the 1.5-mile expansion, which is an improvement over the 5% recovery achieved at the current fare.

Table 12: Comparison of Premium Paratransit Fare Structures Across Peer Agencies

Agency	City/State	Service Area Population	Service Area (Sq. Miles)	Disability Rate	UPT	Coverage	Paratransit Fare	Premium Expansion	Premium Fare	Service Hour Limitation
Tahoe Transportation District	Zephyr Cove, NV	150,242	73	14%	8,959	1 Mile	$3.0 (Zero Fare Dec 2026)	Neighbor	$6.0 (Zero Fare Dec 2026)	No
Greater Richmond Transit Company	Richmond, VA	452,319	186	13%	254,892	3/4 Mile	3	Neighbor	6	Yes
Monterey-Salinas Transit	Monterey, CA	437,325	159	10%	144,867	3/4 Mile	2	Neighbor	2	No
Pioneer Valley Transit Authority	Springfield, MA	575,500	627	17%	150,074	3/4 Mile	3	Neighbor	5	No
Santa Clara Valley Transportation Authority	San Jose, CA	1,894,783	346	9%	274,955	3/4 Mile	4	+1 mile	16	No
Omnitrans	San Bernardino, CA	1,540,644	466	12%	126,865	3/4 Mile	3.75	Zones	$+1 (Per Additional Zone)	No
Massachusetts Bay Transportation Authority	Boston, MA	3,109,308	3244	13%	930,174	3/4 Mile	3.35	Neighbor	5.6	No
Des Moines Area Regional Transit Authority	Des Moines, IA	3,543,20	136	16%	85,150	City	3.5	Neighbor	30	No
Central Oklahoma Transportation and Parking Authority	Oklahoma City, OK	783,134	283	15%	45,665	3/4 Mile	3.5	0.75-3.75 miles 3.75+ miles	$7 $10.5	No
Central Florida Regional Transportation Authority	Orlando, FL	2,289,420	2540	11%	560,468	3/4 Mile	4	Neighbor	7	No
Indianapolis and Marion County Public Transportation	Indianapolis, IN	969,466	396	14%	149,143	3/4 Mile	3.5	Neighbor	7	No

The team also developed a tiered fare structure that adjusts pricing based on the distance of the expanded coverage. This approach allows for a fare system that aligns costs with the varying levels of service provided across different distances.

- For coverage extending from 0.75 miles to 1 mile, the fare would be set at $6.
- For coverage between 1 mile and 1.25 miles, the fare would increase to $8.
- For coverage between 1.25 miles and 1.5 miles, the fare would be $10.
- And so on for distances beyond 1.5 miles.

Using this structure, the team estimates that UTA could recoup between 8% and 12% of the total costs by 2029, depending on the expansion distances. Table 14 outlines the projected impact of this fare structure on revenue and cost recovery.

When considering both the current ADA coverage with a $4 fare and the 1.5-mile premium coverage, the overall farebox recovery is projected to be around 7% of the total cost. This is slightly lower than the 7.8% recovery rate estimated with a fixed fare of $9 across all expanded areas, highlighting the trade-offs between different fare strategies.

4.5 Scenario 3: Paratransit Expansion Into IMZs

In this scenario, the team explores the expansion of paratransit services into the IMZs proposed in the FYSP, in addition to the existing and future ADA coverage areas. Figure 21 illustrates the coverage at the end of the FYSP, highlighting areas currently covered by paratransit and

Table 13: Impact of Fixed Premium Fare Levels on Farebox Recovery Ratios for Expanded Paratransit Coverage (2025-2029)

Premium Fare	Premium Farebox Recovery Ratio
$5	7%
$7	10%
$9	12%
$11	15%
$13	18%
$15	20%

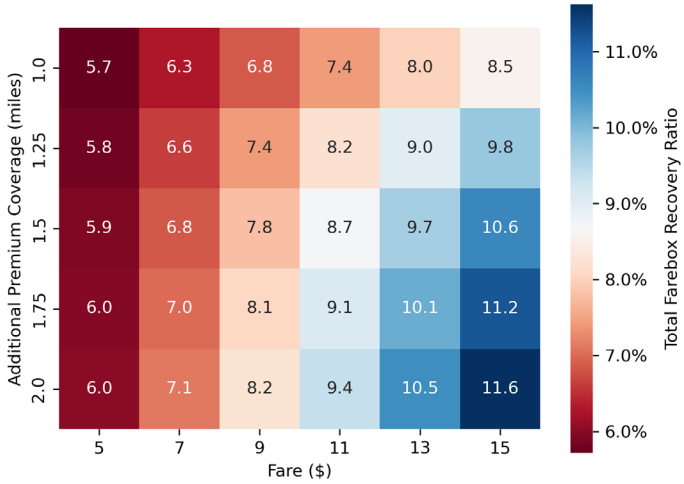


Figure 20 – Heatmap of Farebox Recovery Rates for Different Premium Fares and Coverage Expansions: The heatmap illustrates the farebox recovery rates across various premium fare levels and incremental coverage expansions. Each cell represents the percentage of total costs recovered based on different combinations of premium fares (ranging from $5 to $16) and additional coverage (from 1 mile to 2 miles).

Table 14: Projected Costs, Revenue, and Farebox Recovery for Tiered Fare Structure in Expanded Coverage Areas (2025-2029)

Premium Coverage (miles)	Fare	Added Customers	Cumulative Customers	Trip Cost (Millions)	Cumulative Trip Cost (Millions)	Fare Revenue	Cumulative Fare Revenue	Recoup
1	$6	537	537	$6.32	$6.3	$515,000	$515,000	8%
1.25	$8	303	839	$3.56	$9.88	$387,000	$903,000	9%
1.5	$10	242	1,081	$2.85	$12.73	$387,000	$1,290,000	10%
1.75	$12	199	1,280	$2.34	$15.07	$382,000	$1,672,000	11%
2	$14	164	1,444	$1.93	$17.00	$368,000	$2,039,000	12%
Current Coverage	$4	2,043	-	$24.06	-	$1,308,000	-	5%

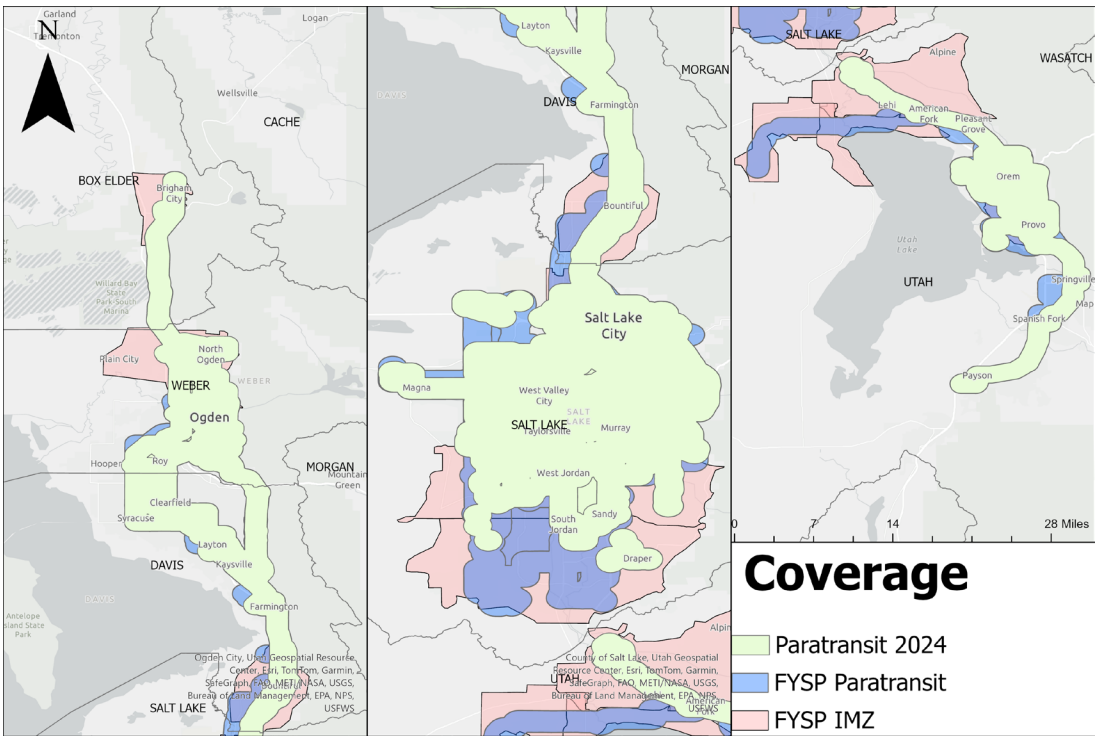


Figure 21 – Paratransit Coverage Expansion Including IMZs at the End of the FYSP: The figure illustrates the expanded paratransit coverage at the conclusion of the FYSP, incorporating both existing ADA-required coverage and proposed IMZs. The pink areas on the map represent the IMZs that lie outside the current and planned FYSP coverage, indicating new regions that could be served by paratransit vehicles. This visual highlights how the integration of IMZs with traditional paratransit services can significantly extend coverage into areas that were previously underserved.

those set to be covered by the FYSP. The pink areas, representing the IMZs that fall outside both the current and planned FYSP coverage, present an opportunity for extending paratransit services.

The team assumes that paratransit vehicles operating within the ADA coverage areas will also serve the IMZs, facilitating pick-ups and drop-offs for passengers within these zones.

As with previous scenarios, the FYSP did not, at the time of analysis. provide a specific phasing schedule for the implementation of IMZs. Therefore, the team used the same random sampling approach to determine the order in which different IMZs are added to the service area each year as shown in Figure 22 . The FYSP proposes a total of 12 IMZs, with the exception of Tooele County's IMZ, which is not included in this analysis due to its unique geographic characteristics. The figure on the right displays the proposed IMZs as outlined in the FYSP, along with the phasing of their inclusion into the paratransit service area based on the random sampling method.

The demand for paratransit services within the IMZs is estimated using a similar methodology as in previous scenarios, relying on a capture rate of 1.6% and applying the gradual adoption curve modeled earlier. This approach allows for a realistic projection of customer growth as paratransit coverage expands into the IMZs.

Table 15: Projected Customer Growth in IMZ Expansion Areas (2025-2029)

Year	Current Coverage Riders	FYSP Coverage Riders	IMZ Expansion	
			Added Riders	Total Riders
2025	1,964	82	105	105
2026	1,983	99	37	141
2027	2,003	118	128	269
2028	2,023	132	55	324
2029	2,043	145	34	358

Table 15 shows the projections for customer growth from 2025 to 2029, capturing both the expansion under the FYSP and the additional demand generated by the IMZs. By the end of the FYSP in 2029, a total of 2,546 customers across the current coverage, FYSP expansion, and IMZs is expected.

The extension of IMZs into the paratransit service is projected to add operational costs as shown in Table 17. By 2029, the total trip cost for operating paratransit services within the IMZs is estimated to reach approximately $4.2 million. This contributes to a total expected expenditure of $29.9 million for UTA in 2029, covering both current and expanded service areas.

To help offset the costs associated with expanding paratransit services into IMZs, the team has proposed various fare structures aimed at improving farebox recovery. Table 16 illustrates the impact of different fare levels on cost recovery by 2029. If UTA were to maintain the current $4 fare for the extended service, the farebox recovery would remain at a modest 5.4%. However, by implementing a higher fare, such as $10, the total farebox recovery for IMZs could increase to 13.6%, and the overall recovery for the entire coverage (current, FYSP, and IMZ) would rise to 6.6%. This analysis demonstrates that while fares can significantly improve cost recovery, they must be balanced with the need to keep the service accessible to the target population.

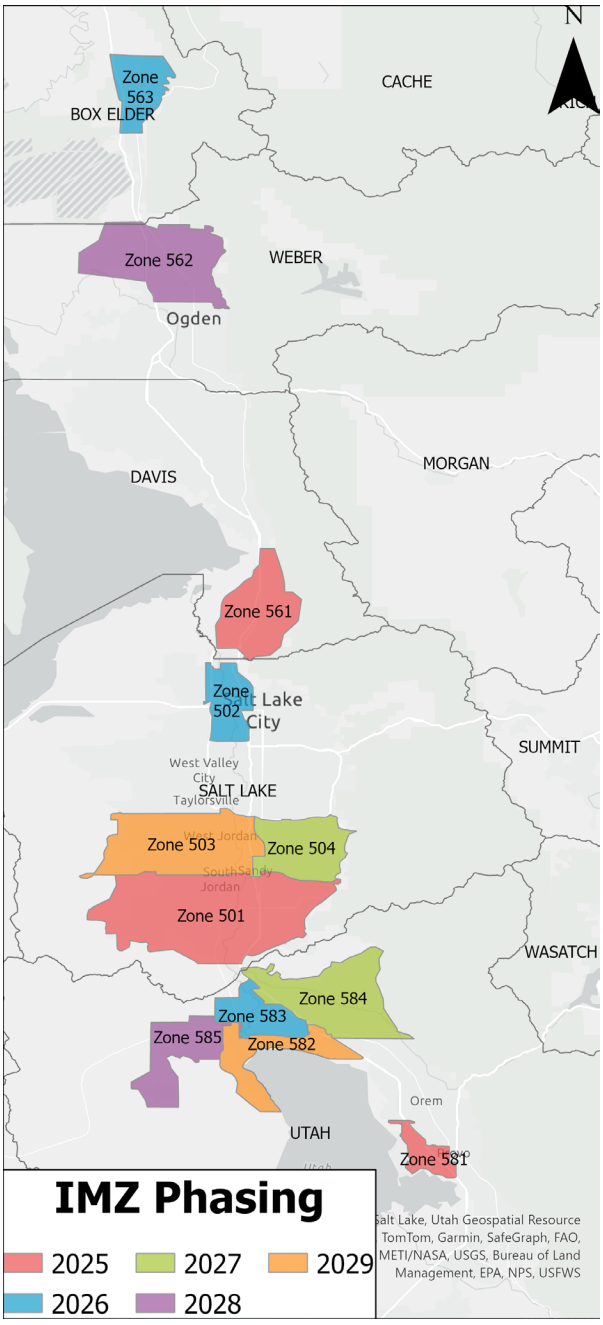


Figure 22 – Phasing Map of IMZ Integration into Paratransit Coverage: The figure displays the phased integration of IMZs into UTA's paratransit coverage, as proposed in the FYSP. The map highlights the specific IMZs to be added each year, illustrating the gradual expansion of service into these areas. The color-coded regions represent the timeline for IMZ implementation, showing how paratransit coverage will evolve to include these new zones by the end of the FYSP period in 2029.

4.6 Coverage Expansion Challenges and Comparative Analysis Across Different Scenarios

Expanding paratransit service coverage beyond the ADA-required ¾-mile radius presents several challenges that must be carefully addressed. Below is an analysis of the key challenges associated with coverage expansion.

Regulatory Requirements

- **ADA compliance:** Any expansion of service must continue to meet ADA requirements if it is considered part of the mandated complementary paratransit service. However, if the expansion is offered as a premium or separate service beyond this boundary,

it may not be subject to the same ADA regulations, provided that the core complementary paratransit service remains compliant and fully accessible, including offering door-to-door service for eligible riders.

- **Service equity:** Agencies must ensure that expanded coverage does not create disparities in service quality. The expansion should be planned with careful consideration of both urban and rural areas, ensuring that marginalized communities receive fair and consistent service.

Operational Challenges

- **Increased vehicle and staffing requirements:** Expanding service coverage requires additional vehicles, drivers, and support staff. The cost per trip typically increases as coverage expands into lower-density areas, where demand is spread out. Operating in these areas can lead to longer travel distances, more idle time, and less efficient resource utilization.
- **Service scheduling and routing complexity:** Extending the service area introduces more complexity into routing and scheduling. Expansion often requires significant capital investments in vehicles, technology, and infrastructure.
- **Service area definition:** Defining the exact boundaries of the expanded service area can be challenging. Static expansion scenarios (e.g., a fixed buffer around existing routes) are easier to manage. On the other hand, dynamic or demand-responsive models are more flexible but require sophisticated systems for real-time monitoring and management.

Table 16: Farebox Recovery Projections for Different IMZ Fare Structures (2029)

IMZ Fare	Farebox Recovery (2029)	
	IMZ	Full Coverage (Current + FYSP + IMZ)
$4	5.40%	5.40%
$6	8.20%	5.80%
$8	10.90%	6.20%
$10	13.60%	6.60%

Table 17: Projected Costs for IMZ Expansion and Total Paratransit Operations (2025-2029)

Year	Total Riders (Current and FYSP)	Total Paratransit Riders Inside IMZ	Total IMZ Cost (Millions)	Total Cost (Millions)
2022	1,906	-	-	$22.44
2025	2,046	105	$1.23	$25.32
2026	2,082	141	$1.66	$26.18
2027	2,121	269	$3.17	$28.14
2028	2,155	324	$3.81	$29.19
2029	2,188	358	$4.22	$29.98

- **Labor relations:** The study authors recognize that many of these alternatives explore the use of contracted services. It is recommended that UTA evaluate any service expansion alternatives or scenarios as either self-operated or contracted to 3rd party providers.

Financial and Cost Considerations

- **Fare structure adjustments:** To offset increased operational costs, agencies might consider tiered or premium fare structures. However, this introduces equity concerns, as higher fares might reduce accessibility for low-income riders. The agency must ensure a balance between generating revenue and maintaining affordable service options.
- **Price elasticity:** Price elasticity measures the responsiveness of demand when fares increase or decrease. In paratransit services, demand tends to be relatively inelastic, meaning that moderate fare increases may not lead to significant drops in ridership because many users rely heavily on the service due to their limited transportation alternatives. However, this inelasticity has limits, especially when fare increases become substantial, potentially leading to decreased usage among low-income riders who cannot afford higher fares.

Below is a summary that encapsulates the key findings for each scenario, allowing for a direct comparison of their potential impacts and cost-effectiveness.

Legacy Service Continuation

This scenario involves maintaining paratransit service in areas that would lose coverage due to planned removals or realignments of fixed routes under the FYSP. This approach also provides UTA with greater flexibility in managing the fixed-route network, as underperforming routes can be adjusted or removed without completely eliminating transportation access for paratransit users in the affected areas. It would add approximately 255 customers at an estimated cost of $3.0 million. With the current $4 fare, farebox

recovery is projected to be around 5%. While this option ensures continuity for existing users, it offers the lowest farebox recovery and adds relatively few new customers.

	Legacy Service Continuation	1-Mile or More Expansion + Premium Service	IMZ Expansion for Paratransit
	255	534-1444	358
	$3.0 Million	$6.3 - $17.0 Million	$4.2 Million
	5% ($4 Fare)	5%-12% ($4-$9 Fare)	5%-10% ($4-$10 Fare)

A comparative summary of the three scenarios — Legacy Service Continuation, 1-Mile or More Premium Expansion, and Paratransit Expansion Into IMZs — highlighting the additional riders, associated costs, and farebox recovery rates for each option.

1-Mile or More Expansion with Premium Service

This scenario explores extending paratransit coverage beyond the current ADA-required ¾-mile boundary, with the addition of a premium fare structure. Depending on the extent of the expansion, it could add between 537 and 1,444 customers, at a cost ranging from $6.3 million to $17.0 million. Assuming a fixed premium fare, UTA could achieve farebox recovery rates between 7% and 12% in the expanded regions. This scenario offers a balance between expanding service, capturing additional demand, and improving financial sustainability.

IMZ Expansion

Expanding into IMZs would add approximately 358 customers at a cost of $4.2 million. The farebox recovery for this scenario could range from 5% at the current $4 fare to as high as 14% with a $9 fare. While this option provides a flexible approach to extending coverage into underserved areas, actual demand estimation is challenging due to the innovative and variable nature of IMZs.

Upon evaluating the potential outcomes of each scenario, it becomes evident that each option presents unique advantages and challenges. Importantly, these scenarios are not mutually exclusive could be implemented individually, in combination, or not at all, to form a strategy for UTA's paratransit expansion.

The **Legacy Service Continuation** scenario aims to preserve paratransit service in areas that would otherwise lose coverage due to planned fixed-route removals or realignments under the FYSP. While this scenario primarily benefits existing riders by ensuring continuity of service, it provides minimal expansion beyond the current service area and has the lowest projected farebox recovery among the scenarios considered. However, maintaining the existing service allows UTA to avoid significant operational disruptions. This scenario also supports service planning by reducing the impact on paratransit riders when fixed-routes are modified or removed, offering greater flexibility in managing the fixed-route network.

The **Paratransit Expansion Into IMZs** explores extending paratransit service into existing or planned IMZs, potentially expanding access to areas well beyond UTA’s current fixed-route network. This could include locations such as Alpine and Highland cities in Utah County, which currently lack both fixed-route and paratransit service. However, estimating demand in IMZs is challenging due to their flexible nature. The financial viability and operational complexity, including potential impacts on equity of access compared to the general public, must also be carefully considered. Commingling paratransit with other services within IMZs might offer an alternative approach. However, this strategy presents its own challenges and potential risks, as discussed in Section 5.

The **1-Mile or More Premium Expansion** scenario proposes extending the paratransit service boundary beyond the minimum ADA-required ¾-mile radius, with a premium fare structure for the expanded area. This option offers a broader expansion of coverage and the potential for improved farebox recovery and improved service quality. Key considerations include determining the optimal premium fare levels, accurately estimating demand in the expanded areas, and addressing potential operational complexities associated with a larger service area and tiered fare structure. This approach is similar to some strategies employed by peer agencies.

Each of these scenarios presents a different approach to addressing the challenges and opportunities related to paratransit service expansion. The ultimate decision on which option, or combination of options, to pursue will rest with UTA leadership, based on a comprehensive evaluation of the factors presented in this analysis, UTA's strategic priorities, and budgetary considerations.

5. Opportunity #3: Commingling

Commingling, the practice of integrating paratransit and general transit services, is an innovative approach that seeks to maximize operational efficiency, reduce costs, and enhance service quality for both paratransit and general public riders. This strategy allows transit agencies to better utilize their existing resources — such as vehicles, drivers, and support staff — by serving multiple rider types simultaneously. By combining services under a unified framework, agencies can reduce redundancies, optimize vehicle use, and ensure that both scheduled, and demand-responsive services meet their intended goals.

UTA can leverage its existing UTA On Demand service as a potential solution for commingling. UTA On Demand can be integrated with paratransit operations to create a flexible, responsive transit model. By allowing paratransit and general population riders to share vehicles when their routes align, UTA can enhance service flexibility, reduce empty vehicle miles, and lower overall costs. Generally, on-demand transit has a lower cost per trip than paratransit services for several reasons, including:

- More potential for sharing of trips, as on-demand transit services are open to the general public, resulting in a higher trip density and therefore making it easier to group several trips in a single vehicle
- Smaller, more cost-efficient vehicles to purchase and operate
- Different and more flexible vehicle operator employment agreements

For these reasons, several public transit operators with on-demand transit services choose to complete a small subset of their ADA paratransit trips using on-demand transit to reduce total operating costs. For example, in Wyoming, the Cheyenne Transit Program (CTP) partnered with Spare in 2020 to merge its paratransit and microtransit services under a single digital platform, reducing per-trip costs by 36% and improving vehicle utilization.

5.1 Commingling Requirements and Challenges

Implementing a commingling strategy involves meeting specific operational requirements and overcoming various challenges to ensure seamless integration of paratransit and general transit services.

- **Overlapping service areas:** If UTA pursues comingling, it is recommended that commingled paratransit trips occur in the same area where the on-demand service operates. It is possible for on-demand vehicles to travel outside their operating zone to complete paratransit trips, but only short trips outside the zone would be recommended, as on-demand vehicles are unable to complete non-paratransit pick-ups and drop-offs outside an on-demand zone.
- **Accessible vehicles:** The on-demand service must provide paratransit customers with accessible vehicles, including WAVs for those with wheelchairs or other mobility devices. While the entire on-demand fleet does not need to be accessible, the specific vehicle assigned to paratransit customers must meet the passengers' unique requirements. Note that UTA On Demand is an accessible service with WAVs that are assigned to serve on-demand riders with mobility devices.
- **Trained drivers:** To successfully provide service to paratransit customers, UTA On Demand drivers must also be trained for the specific needs of this rider group. This can include securing mobility devices, helping passengers board vehicles, and handling different behavioral needs, reasonable accommodations, and other ADA requirements.
- **Paratransit service parameters:** The ADA requires that paratransit customers are offered the ability to pre-book trips at least one day in advance, while many on-demand transit services, including UTA On Demand, only offer on-demand trips (real-time booking). Therefore, paratransit trips should be pre-booked and confirmed at least by the night before and on-demand trips are added in real-time. Ideally, this ensures that the booking experience does not change for paratransit riders, who will still call and book rides in advance as they currently do. In partnership with service operators, new processes can be created to ensure that paratransit overflow bookings are assigned to be served by the IMZ fleet the night before rides take place. This means that all changes to the booking process are managed by operators rather than impacting passengers' booking experiences.
- **Sufficient UTA On Demand capacity:** Generally, commingled paratransit trips make up a small percentage of on-demand trips. However, each paratransit trip requires additional UTA On Demand resources and, in aggregate, increases the total number of hours vehicles must operate each year. Therefore, where possible, UTA may seek out opportunities to distribute some of the cost savings from the paratransit service to UTA On Demand to ensure quality of service does not decline. If an IMZ is already undersupplied, meaning demand often exceeds capacity and additional vehicle hours are not added, commingling will exacerbate this issue. At the same time, if sufficient funding is allocated to increase the number of vehicle hours available for

UTA On Demand to account for the influx in paratransit rides, commingling should not reduce service quality for other passengers. This study does not address or discuss existing UTA On Demand capacity challenges.

As with many ADA paratransit services, UTA's paratransit service is expensive to operate, costing UTA around $74 per ride relative to UTA On Demand, which costs $19-$22 per ride on average across all IMZs. The FTA restricts paratransit fares to be no more than twice the fare that would be charged to an individual paying full fare on the non-ADA services ($2.50 one-way, in this case). Therefore, there is a maximum ceiling to how much fare recovery can be achieved, especially given the high cost of paratransit service operations. Furthermore, UTA is committed to serving passengers at an affordable fare to ensure the service is accessible for high-need, low-income passengers. Therefore, managing paratransit operating costs is an important reason for exploring commingling with the less expensive UTA On Demand service. Reapportioning a portion of paratransit ridership to services like UTA On Demand can help reduce the high operating costs associated with traditional paratransit. This approach allows UTA to leverage the cost-effective elements of its on-demand service while continuing to provide fully accessible and ADA-compliant transportation options for all riders.

A key factor contributing to the high cost per ride of paratransit service is its extensive service area, spanning over 100 miles in length and covering approximately 475 square miles. Because paratransit is required to serve all locations within a ¾-mile radius of fixed-route service during its hours of operation, the overall coverage area is significantly expanded. A large service area, combined with key destinations that are widely dispersed throughout the service zone, results in extremely long trips on paratransit service as was detailed in the Task 1 report. For example, it was found that average trip durations are around 44 minutes but can be more than 1.5 times the duration of an equivalent fixed-route trip in some extreme cases.[7] As passengers are required to pre-book trips at least 24 hours in advance, UTA's paratransit service is well-equipped to serve long-distance trips, which can be pre-scheduled and prioritized accordingly in advance. Shorter, more local trips, on the other hand, are often better-suited for on-demand, as these trips may be effectively aggregated with other short, local trips to increase overall service efficiency and enable paratransit service to focus on serving longer trips.

As discussed earlier and shown in Figure 23, UTA's paratransit service experiences large spikes in ridership in the morning and in the afternoon and early evening. Despite the requirement that riders prebook paratransit service, such sharp demand peaks can result in challenges in efficiently operating paratransit service at this time. Commingling paratransit trips with UTA On Demand trips during this time could reduce some of the extreme demand on paratransit service at those times, effectively lowering costs.

Paratransit trip durations are also higher on average during morning peak periods. For example, during morning peak periods, long distance travel times are up to 16% higher. This suggests that trips are more difficult to serve during periods of high demand. Introducing a commingled paratransit overflow service during peak periods could drive more efficient passenger pick-up and drop-off during the busiest service periods.

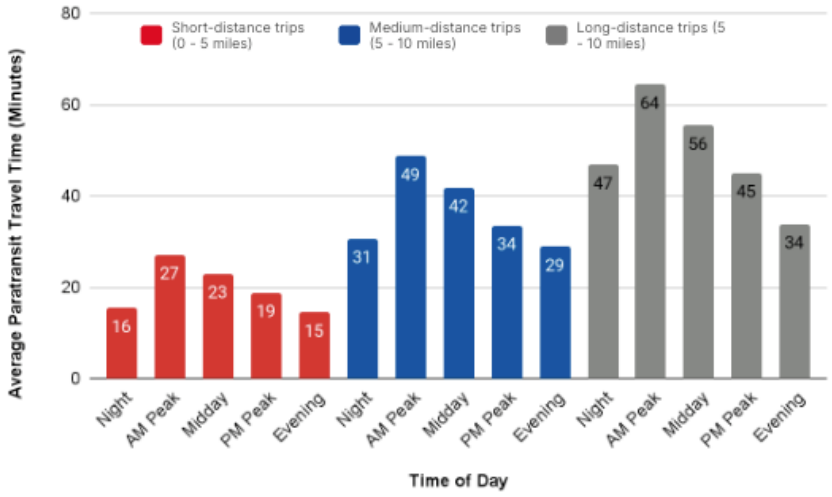


Figure 23 – Mean Travel Times for Paratransit Trips by Time of Day and Trip Distance: This bar graph illustrates average paratransit travel times across different times of day for three trip distance categories: short (0-5 miles), medium (5-10 miles), and long (5-10 miles). The graph reveals how travel times vary depending on both distance and time of day, with longer trips and peak hours generally showing increased travel durations.

5.2 Commingling Approach

Given the current challenges with service, several potential solutions, aimed at addressing cost issues in the current service and leveraging efficiencies in UTA On Demand service, were developed. The team used Via's proprietary simulation tool to simulate real

[7] Per the Paratransit Forward Study Summary Report: Existing Paratransit Service Analysis

service and determine whether commingling would be an effective and feasible solution to reduce the costs of UTA's paratransit service. The three predominant approaches to commingling on-demand services with ADA paratransit are as follows:

1. **Commingled fleets, in which paratransit and on-demand operate with a shared vehicle fleet:** Individual vehicles are assigned to only one mode for any given driver shift, so drivers are assigned either paratransit trips or on-demand trips for any given shift. This approach generally works best when both services are effectively operated together, and transit providers have a single, shared software platform to effectively balance the amount of paratransit vs. on-demand driver shifts according to observed levels of demand. The platform should indicate each ride as paratransit or on-demand and assign them accordingly. This approach entails sharing vehicles across both services without sharing riders, which limits the potential for trip aggregation and efficiency gains.
2. **Commingled shifts, in which both paratransit and on-demand riders are served by the same vehicle during a given driver shift but do not share rides at the same time:** Again, this approach is most effective when software is shared between services, as it requires the software platform to book on-demand trips into available gaps in between pre-scheduled paratransit trips such that the rider groups do not ride on the same vehicle simultaneously. The software must then alert drivers as to whether each ride request is for on-demand or paratransit, as well as whether riders need assistance boarding or alighting, to enable drivers to assist passengers accordingly. This approach also entails sharing vehicles across both services without sharing riders, which limits the potential for trip aggregation and efficiency gains.
3. **Commingled trips, in which paratransit and on-demand riders can be grouped into the same vehicle at the same time:** In this approach, transit providers should provide detailed customer communications and travel training materials to set expectations between both customer groups that rides will be shared with other passengers. This approach entails sharing riders across services, increasing opportunities for efficiency gains and trip aggregation.

Should UTA proceed with commingling, it is advised to implement with the **commingled trips** approach, in which UTA On Demand service drivers would be trained to also provide ADA paratransit trips. Riders of ADA paratransit services, for instance, may require additional assistance with boarding and alighting. ADA paratransit services also have specific requirements for typical pick-up/drop-off windows by which drivers must abide. Recommendations for driver training are further detailed in the Implementation section of this report.

5.3 Exploring Commingling Scenarios for UTA Paratransit and On-Demand Services

This study focuses on the third approach: commingled trips. Since UTA currently operates UTA On Demand using Via and ADA paratransit using Trapeze, this approach reduces the need for a single, unified software system. Instead, UTA dispatchers (or a software) could assign specific paratransit trips to be served by the UTA On Demand service. A variety of different criteria could be used to determine which paratransit trips can and should be transferred to the UTA On Demand Service. This study explores three such criteria (noted below), to provide UTA with an estimate of the varying levels of impact that this type of commingling could offer. The study focused on criteria based on trip duration, time of day of trip request, and the origin and destination points of the trips. However, UTA could also filter by a variety of different factors, for example subscription trips or requests with multiple wheelchairs, which might be better served by a paratransit vehicle that is larger. Another example that may not make sense to be served by UTA On Demand would be trips from the Division of Services for People with Disabilities (DSPD) with unique driver screening requirements. Furthermore, UTA could set caps on the number of trips it shifts between services, should the paratransit demand patterns shift unexpectedly. However, the stricter the criteria are, the more limited the potential opportunity there is for cost savings. The analysis in this study therefore represents the maximum potential cost savings within each criterion.

As such, this approach entails assessing whether UTA's dedicated UTA On Demand service would be able to take on additional paratransit trips along with existing UTA On Demand passengers, effectively operating as a commingled paratransit overflow service. This option would enable UTA to leverage existing UTA On Demand drivers and vehicles while operating with different software platforms, in turn serving rides more efficiently and cost-effectively.

The team investigated three scenarios to explore potential options for a commingled overflow service and determine the feasibility and effectiveness of implementing such a service:

1. Overflow rides in IMZs
2. Overflow rides in and near IMZs

3. Overflow rides anywhere in the paratransit service area by time of day (e.g., peak hours) and trip duration

In each scenario, overflow refers to shifting select paratransit trips to UTA On Demand to reduce demand on UTA's paratransit service and lower overall costs. Further detail around each of the scenarios is provided below.

Scenario 1. Commingle Within IMZs

The first scenario investigated whether cost savings could be achieved by using the UTA On Demand service to serve paratransit trips that start and end in IMZs. This alternative would not require any changes to the existing paratransit service area or IMZs. Only trips with origins and destinations occurring within the overlap between the current paratransit service area and IMZs would be commingled. Note that this analysis includes trips occurring in the overlap between the UTA's paratransit service and its current IMZs — South Davis County, Salt Lake City Westside, Tooele County, and southern Salt Lake County (SSLC) — in addition to five potential IMZs that have been proposed in the agency's five-year plan: 362, East SLCO, South SLCO, West Provo, and West SLCO.

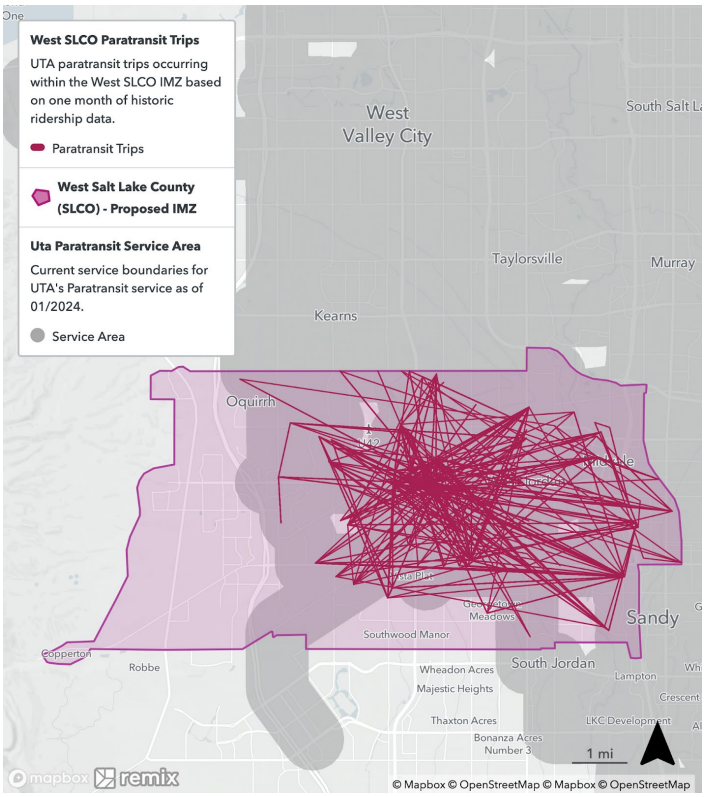
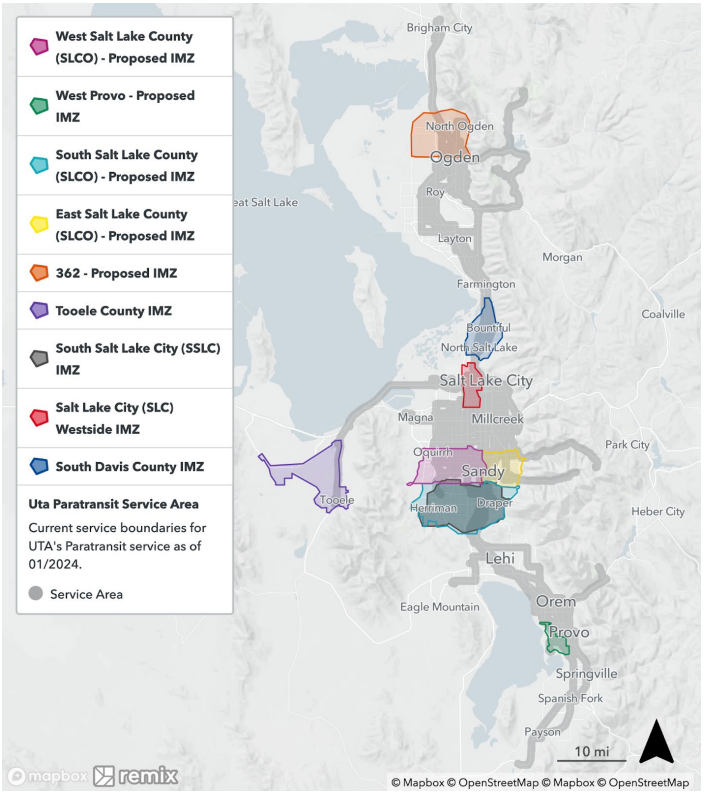


Figure 24 – Illustrative Example of Trips To Be Commingled in Scenario 1 - West SLCO IMZ: This figure illustrates the concentration of historical UTA paratransit trips within the proposed West Salt Lake County IMZ. The red lines represent individual paratransit trips over a one-month period. The overlap between the proposed IMZ (shaded purple) and the current UTA paratransit service area highlights the high volume of trips that would be subject to commingling under Scenario 1.



This map shows the Scenario 1 commingling service areas highlighting various Proposed and Current IMZs across Salt Lake County and surrounding regions. The map helps analyze potential cost savings by using UTA On Demand service for paratransit trips within these zones, without altering the existing paratransit service area. It visually represents the areas where paratransit and IMZ services could potentially be commingled to improve efficiency.

Figure 24 provides an illustrative example of historical UTA paratransit trips taking place over the course of a month that would be commingled if UTA were to proceed with commingling as outlined in Scenario 1. In this example, trips start and end in the overlap between the West SLCO IMZ and the UTA paratransit service area.

Scenario 2. Allow UTA On Demand Service to Serve Some Paratransit Trips Outside IMZ Boundaries

The second scenario aims to determine whether cost savings could be achieved by allowing UTA On Demand to serve nearby paratransit trips with origins and destinations just outside of the current IMZs, in addition to the trips within the IMZs as defined in Scenario 1. This alternative would not result in any changes to existing IMZs, nor would it extend the paratransit service area; rather, it would enable UTA On Demand vehicles to travel slightly outside of the current IMZ boundaries to serve nearby paratransit trips occurring within the paratransit service area. For this scenario, the current IMZs (South Davis County, Salt Lake City Westside, and SSLC) were investigated. The extent to which UTA

On Demand vehicles would be permitted to travel outside of their respective IMZs in this scenario was determined by limiting the additional distance that UTA On Demand vehicles would be permitted to travel to within 50% of the length of each zone's longest area. To determine this threshold, the team analyzed existing paratransit trip patterns and determined additional areas that UTA On Demand vehicles would be permitted to serve paratransit rides outside of current IMZs based on current paratransit ridership patterns; areas within 50% of each IMZ's longest section and with a high density of pick-ups and drop-offs relative to other nearby areas were considered part of the potential area to commingle paratransit and UTA On Demand trips in this scenario. Note that while the project team recommends that the area outside of the current zones in which

IMZs serve paratransit trips be limited in size to ensure efficiencies are maintained, UTA could determine a different threshold for determining how far from the IMZ zones the UTA On Demand vehicles can go to serve paratransit trips, should the agency elect to move forward with a similar service model.

Figure 25 provides an illustrative example of historical UTA

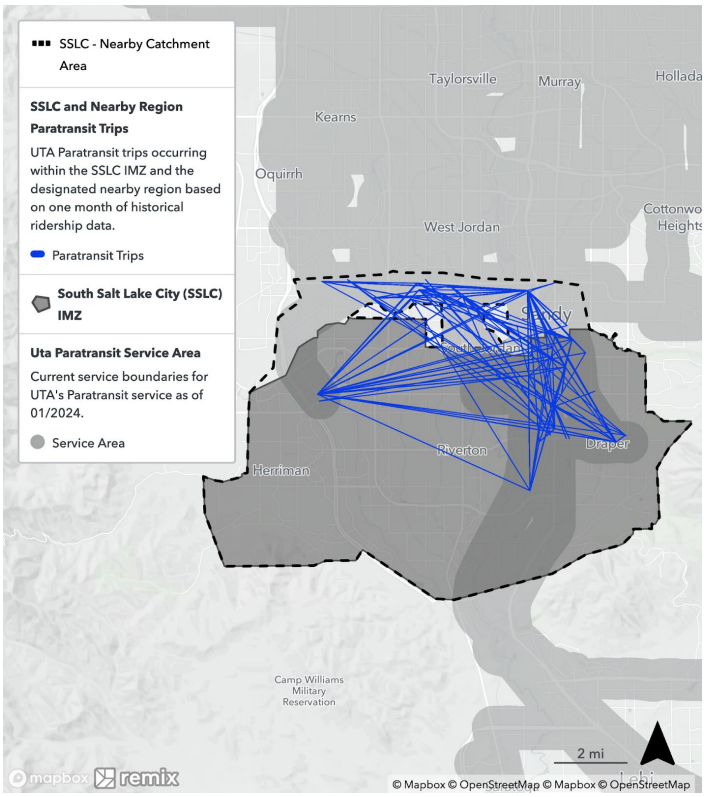
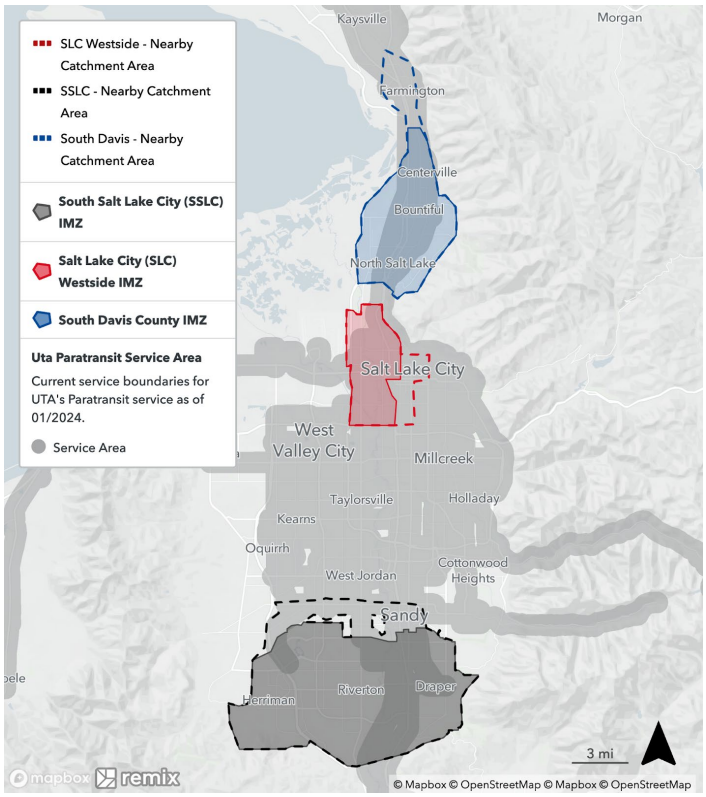


Figure 25 – Illustrative Example of Trips to be Commingled in Scenario 1 - West SLCO IMZ: The map shows SSLC IMZ and the surrounding UTA Paratransit Service Area. Blue lines represent paratransit trips within this region, based on one month of historical ridership data. The trips form a network of connections, primarily concentrated in the northern part of the service area, illustrating the potential routes that would be combined or "commingled" under the proposed Scenario 2.



This map illustrates Scenario 2 of commingling service area. It shows the current South Davis County, SLC Westside, and SSLC IMZs along with their extended Nearby Catchment Areas. These catchment areas represent regions just outside the IMZ boundaries where UTA On Demand vehicles could potentially serve paratransit trips. The extended areas are based on a threshold of 50% of each IMZ's longest section, focusing on high-density pick-up and drop-off locations. This approach seeks to increase service efficiency without altering existing IMZ boundaries or expanding the overall paratransit service area.

paratransit trips taking place over the course of a month that would be commingled if UTA were to proceed with commingling as outlined in Scenario 2. In this example, trips start and end in the overlap between the SSLC IMZ and the UTA paratransit service area or in the paratransit service area slightly outside of the IMZ boundaries.

Scenario 3. Allow UTA On Demand Service to Provide Paratransit Trips Starting or Ending in IMZs During Peak Hours

The third scenario, which evaluated the three existing IMZs, South Davis County, SLC Westside, and SSLC, was designed to determine whether efficiencies and cost savings could be achieved by allowing UTA On Demand to serve paratransit trips under a certain trip duration threshold that either start or end in an IMZ or occur entirely within each IMZ during peak paratransit service hours. Given that ridership on paratransit service peaks both in the morning, between the hours of 6 and 9 a.m., as well as in the evening between the hours of 3 and 6 p.m., this alternative was designed to target periods of high demand in the

paratransit service to ensure maximum relief of paratransit demand when ridership is highest. The team analyzed trips starting and/or ending within the current IMZs that had durations under 35 minutes (scenario 3a) as well as those with durations under 20 minutes for this scenario (scenario 3b). The average paratransit trip duration was 35 minutes, limiting trip duration to under 35 minutes, and subsequently, under 20 minutes enabled the team to focus on trips that UTA On Demand would likely serve more efficiently than paratransit service, as UTA On Demand is generally more effective at serving short, easily aggregated trips. Shorter trips would also minimize excessive travel outside of the existing IMZs for UTA On Demand vehicles. Similar to Scenario 2, the project team chose to limit the trip durations based on historical trip data, but UTA

may elect for different caps on trip durations to determine which trips would be relegated to a commingled paratransit overflow, service should the agency decide to move forward with this service model.

Figure 26 below provides an illustrative example of historical UTA paratransit trips taking place over the course of a month that would be commingled if UTA were to proceed with commingling

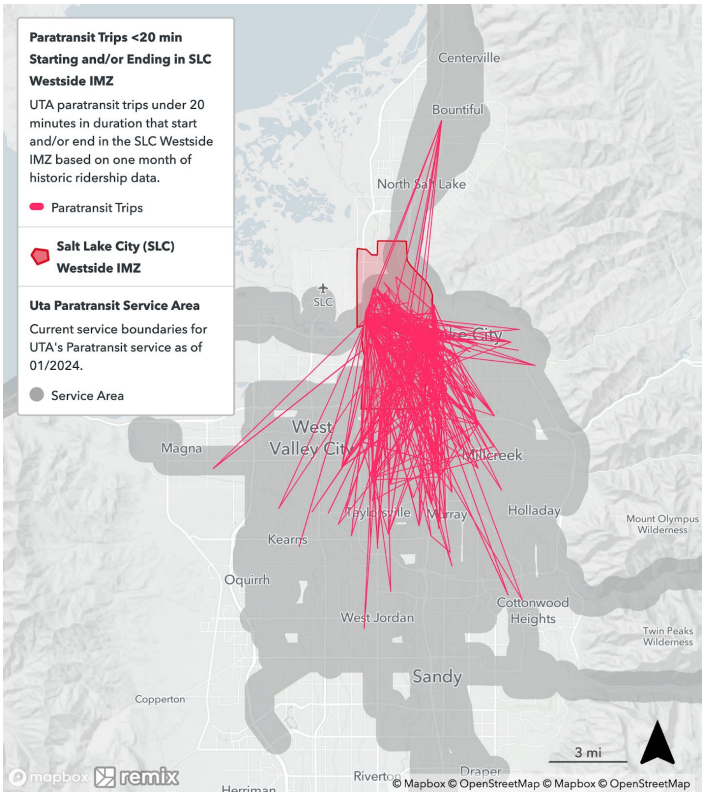
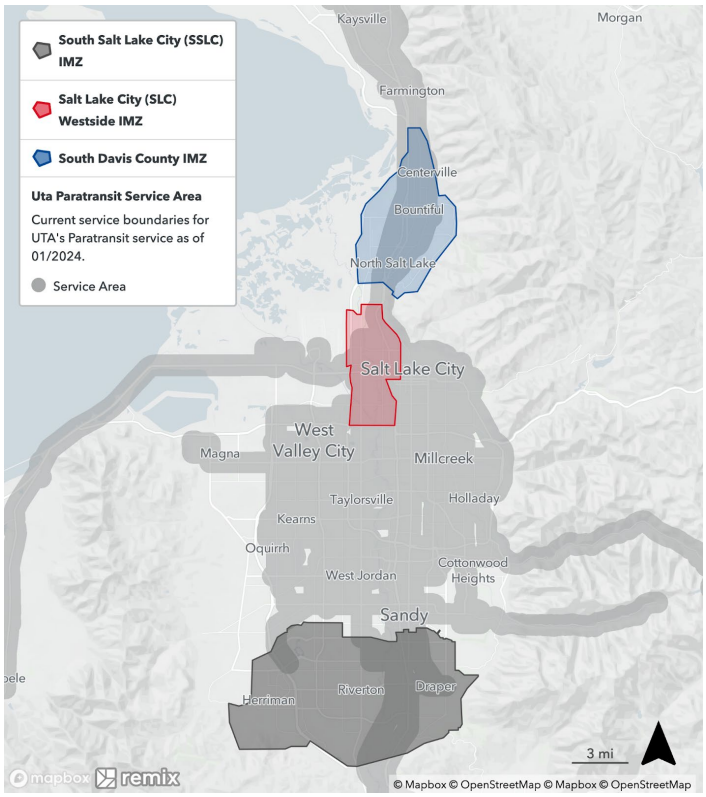


Figure 26 – Illustrative Example of Trips To Be Commingled in Scenario 3a - SLC Westside IMZ: This map illustrates historical UTA paratransit trips occurring over one month that would be potentially commingled under Scenario 3a. This map visualizes UTA paratransit trips under 20 minutes in duration that start and/or end in the SLC Westside IMZ. These trips form a dense network radiating from the IMZ, extending into surrounding areas.



This map illustrates Scenario 3 of commingling service area including the current SSLC, SLC Westside, and South Davis County IMZs. The map provides a geographical that explores potential efficiencies by allowing UTA On Demand to serve specific paratransit trips within or connected to these IMZs during peak hours.

as outlined in Scenario 3a. In this example, trips shown occur during peak service hours and are less than 20 minutes in duration. Trips either start or end (or start and end) in the overlap between the SSLC IMZ and the UTA paratransit service area.

Figure 27 below provides an illustrative example of historical UTA paratransit trips taking place over the course of a month that would be commingled if UTA were to proceed with commingling as outlined in Scenario 3b. In this example, trips shown occur during peak service hours and are less than 35 minutes in duration. Trips either start or end (or start and end) in the overlap between the SSLC IMZ and the UTA paratransit service area.

5.4 Ridership and Cost Estimation

Ridership directly impacts the required fleet size and, therefore, is critical to determining the cost and feasibility of using the UTA On Demand service to operate a commingled overflow paratransit service. As all scenarios involved ridership occurring within existing paratransit service areas, historical paratransit ridership was used as the ridership input for simulations. The team used UTA's paratransit service data from January 2022 to July 2023, and UTA On Demand service data from 2023. For the proposed new IMZs evaluated in Scenario 1, UTA On Demand ridership was pulled from the IMS Service Improvement 2030 Study (in alignment with the UTA FYSP). For each scenario, ridership estimates are broken out into annual paratransit ridership that is anticipated to be served with the UTA On Demand service and estimated total ridership to be served with the UTA On Demand service, including UTA On Demand ridership.

Cost estimates were developed using average cost per ride for UTA's paratransit service and UTA On Demand services to calculate the additional costs and/or savings of serving paratransit trips with UTA On Demand service. The average cost per trip for paratransit service is $74, while average cost per trip for UTA On Demand is $19 across all IMZs, or $22 per trip in the South Davis and SSLC IMZs, $19 per trip in the SLC Westside IMZ, and estimated to be around $22 per trip for the proposed IMZs. For the purposes of this study, cost estimates were calculated by adjusting the average cost per trip of $19 across all IMZs to ~$22 to account for estimated training costs (based on a 10% increase in cost per hour). Transferring trips from being served with UTA's paratransit service to being served with the UTA On Demand service is therefore anticipated to result in savings for UTA on the whole, as each trip that would be served using the UTA On Demand service instead of the paratransit service equates to approximately $52 in savings on average. An illustrative example of potential cost savings is demonstrated in the Appendix.[8]

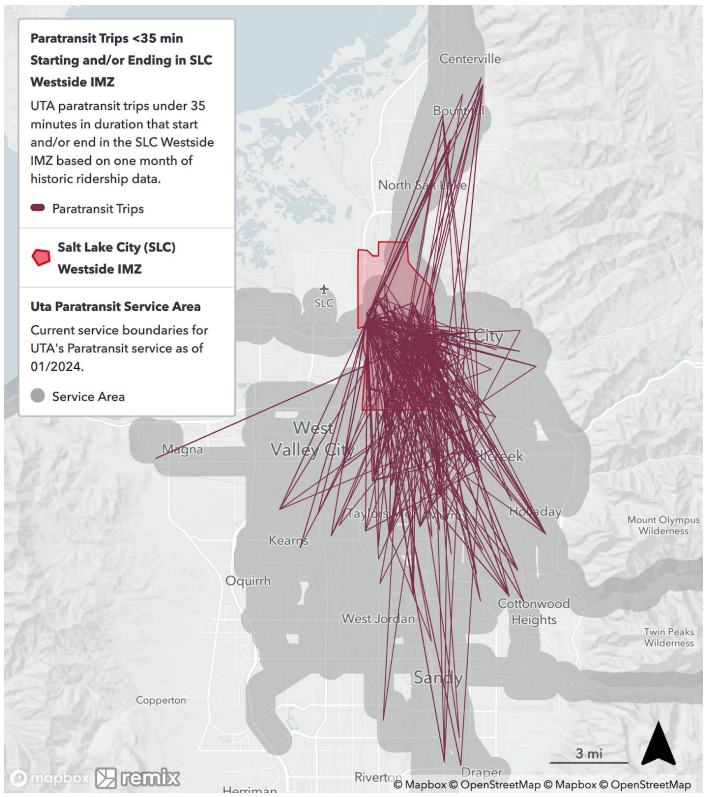


Figure 27 – Illustrative Example of Trips To Be Commingled in Scenario 3b - SLC Westside IMZ: This map illustrates historical UTA paratransit trips occurring over one month that would be potentially commingled under Scenario 3a. This map visualizes UTA paratransit trips under 35 minutes in duration that start and/or end in the SLC Westside IMZ. These trips form a dense network radiating from the IMZ, extending into surrounding areas.

Cost impacts were categorized into:

1. The annual cost impact on UTA On Demand, based on the average cost of the additional riders expected to be added to the service
2. The annual cost impact on paratransit, based on the expected savings to be realized from riders that would be served with UTA On Demand instead of paratransit services

The total impact on UTA's annual cost was calculated by taking UTA's estimated annual paratransit service savings from the estimated additional annual UTA On Demand costs.

Potential Impact of Commingling Within IMZs

The ridership estimates for Scenario 1 consist of existing UTA On Demand trips occurring within each IMZ, as well as existing paratransit trips that started and ended in each respective IMZ. Annual ridership estimates are included in the table below. East SLCO and West SLCO have the highest estimated annual paratransit riders that would be served by UTA On Demand, equating to the greatest estimated annual savings for UTA ($250,000 and $713,000, respectively), shaded in dark green in the Table 18 . The IMZs

[8] Cost savings provided are a simplified estimate based on cost per trip. Should UTA decide to move forward with any of the alternatives, cost estimates should use cost per hour for increased accuracy.

had a relatively high number of paratransit trips starting and ending within the zone boundaries, presenting strong opportunities for commingling existing ridership. Results show that SSLC, 362, and South SLCO also have estimated savings above $100,000 for UTA. In total, if UTA were to introduce a commingled paratransit overflow service to all IMZs, including the proposed IMZs, the agency could expect savings of around $1.3 million per year.

Table 18: Scenario 1 Annual Ridership and Cost Estimates

IMZ	South Davis County	SLC West-Side	Tooele	SSLC	362	East SLCO	South SLCO	West SLCO	West Provo	Total[9]
Est. Annual Paratransit Ridership to be served by UTA On Demand service (trips start & end in IMZ)	1.4k	400	0	2.1k	1.9k	4.8k	2k	13.7k	200	25k
Est. Weekday Paratransit Ridership to be served by UTA On Demand	~5	<5	0	5 – 10	5 – 10	15 – 20	5 – 10	50	<5	100
Est. Total Annual Ridership to be served by UTA On Demand service	40.6k	115k	48k	230k	54k	140k	157k	177k	38k	840k
Annual Cost Impact - UTA On Demand	+$31k	+$8k	$0	+$45k	+$33k	+$104k	+$43k	+$298k	+$4k	+$532k
Annual Cost Impact - Para	-$106k	-$29k	$0	-$152k	-$142k	-$354k	-$145k	-$1.01M	-$15k	-$1.8M
Total Impact on UTA Annual Cost difference between added cost to UTA On Demand and cost savings for UTA Paratransit	-$75k	-$21k	$0	-$107k	-$109k	-$250k	-$102k	-$713k	-$11k	-$1.3M

[9] Total does not include the South SLCO IMZ, which was removed due to its significant overlap with the SSLC IMZ.

Impact of Commingling Paratransit Trips Beyond IMZs

The ridership estimates for Scenario 2 are comprised of the same ridership estimates for Scenario 1 (existing UTA On Demand trips occurring within the existing IMZs, as well as existing paratransit trips that start and end in each IMZ) plus existing paratransit trips occurring outside of the IMZ boundaries in high-demand areas within 50% of each IMZ's longest section. Commingling in the SSLC IMZ would also have the largest impact on annual cost savings between the three IMZs ($333,000), but across the three IMZs, total estimated annual savings would be around $632,000, representing significant annual savings overall.

Table 19: Scenario 2 Annual Ridership and Cost Estimates

IMZ	South Davis County	SLC West-Side	SSLC	Total
Est. Annual Paratransit Ridership to be served by UTA On Demand service (trips start & end in IMZ)	2.3k	3.3k	6.4k	12k
Est. Weekday Paratransit Ridership to be served by UTA On Demand	5 – 10	10 – 15	20 – 25	45 – 50
Est. Total Annual Ridership to be served by UTA On Demand service	41.5k	118k	276k	393k
Annual Cost Impact - UTA On Demand	+$50k	+$64k	+$139k	+$253k
Annual Cost Impact - Para	-$169k	-$244k	-$472k	-$885k
Total Impact on UTA Annual Cost difference between added cost to UTA On Demand and cost savings for UTA Paratransit	-$119k	-$180k	-$333k	-$632k

Targeted Commingling of Paratransit Trips During Peak Hours

The ridership estimates for Scenario 3 include existing UTA On Demand trips within the existing IMZs, plus existing paratransit trips that both start and end in the IMZ, as well as specific paratransit trips that start or end in the IMZ. Paratransit trips were then filtered by two criteria. The first limited trips to only those occurring during peak periods (between 6 and 9 a.m. and 3 and 6 p.m.) in the ridership scenarios. Since UTA paratransit trip distances can be quite long, the team also applied a separate trip duration cap for the ridership estimates to ensure that only shorter paratransit trips, which are more conducive to being served with UTA On Demand, were designated as being served with UTA On Demand service during peak periods. Based on the average paratransit trip duration of 35 minutes, the team chose two duration caps: paratransit trips under 20 minutes and paratransit trips under 35 minutes.

Scenario 3a. Allow UTA On Demand Service To Serve Paratransit Trips Under 20 Minutes in Duration Starting or Ending in IMZs During Peak Hours

The ridership estimates for the first iteration of this scenario include UTA On Demand trips plus paratransit trips occurring during peak hours with trip durations under 20 minutes in length. SSLC has the highest estimated annual ridership that can be served by the UTA On Demand service, as well as the largest total cost impact on UTA. In total, limiting commingling of paratransit overflow to trips during peak hours with durations of under 20 minutes would result in an estimated $204,000 in annual savings for UTA as a whole, significantly lower than some of the other alternatives but still impactful relative to the small number of trips that would be converted to a commingled paratransit overflow service. Peak periods are also when UTA's paratransit

Table 20: Scenario 3a - Rides Under 20 Minutes - Annual Ridership and Cost Estimates

IMZ	South Davis County	SLC West-Side	SSLC	Total
Est. Annual Paratransit Ridership to be served by UTA On Demand service	900	900	2.1k	3.9k
Est. Weekday Paratransit Ridership to be served by UTA On Demand	5 – 10	5 – 10	15 – 20	25 – 30
Est. Total Annual Ridership to be served by UTA On Demand service	40k	115k	230k	385k
Annual Cost Impact - UTA On Demand	$20k	$17k	$46k	$82k
Annual Cost Impact - Para	-$67k	-$63k	-$157k	-$287k
Total Impact on UTA Annual Cost difference between added cost to UTA On Demand and cost savings for UTA Paratransit	-$47k	-$47k	-$110k	-$204k

service is the most constrained due to high demand levels, so changes introduced in Scenario 3 may be some of the most impactful to provide direct relief for paratransit service. This scenario could also be introduced in tandem with the first two scenarios for a larger overall impact on UTA service as a whole.

Scenario 3b. Allow UTA On Demand Service to Provide Paratransit for Trips Under 35 Minutes in Duration Starting or Ending in IMZs During Peak Hours

In addition to trips with durations of under 20 minutes, the project team also estimated ridership on commingled paratransit overflow service for trips occurring during peak hours with paratransit trip durations of under 35 minutes, or the average trip duration for current paratransit trips. As with the previous scenario, the SSLC IMZ has the highest estimated annual ridership to be served by UTA On Demand, as well as the largest total cost impact on UTA, with the highest savings. Results align with the fact that SSLC is the largest of the current UTA On Demand IMZs (71 square miles in total area relative to the 28-square-mile South Davis County IMZ and 15-square-mile SLC Westside IMZ) and therefore, changes to this IMZ are expected to have the largest cost impacts. Given that more trips could be served by the commingled paratransit overflow service in Scenario 3b relative to Scenario 3a, the savings realized by UTA would be greater than if UTA only permitted trips occurring during peak hours with trip durations under 20 minutes to be served by the commingled paratransit overflow service.

Table 21: Scenario 3b- Rides Under 35 Minutes - Annual Ridership and Cost Estimates

IMZ	South Davis County	SLC West-Side	SSLC	Total
Est. Annual Paratransit Ridership to be served by UTA On Demand service	2.4k	1.9k	4.7k	9k
Est. Weekday Paratransit Ridership to be served by UTA On Demand	0 – 5	0 – 5	5 – 10	10 – 20
Est. Total Annual Ridership to be served by UTA On Demand service	42k	116k	233k	390k
Annual Cost Impact - UTA On Demand	$52k	$36k	$102k	$190k
Annual Cost Impact - Para	-$177k	-$138k	-$345k	-$661k
Total Impact on UTA Annual Cost difference between added cost to UTA On Demand and cost savings for UTA Paratransit	-$125k	-$102k	-$244k	-$471k

5.5 Commingled Paratransit Overflow Service Simulations

Using the established IMZ boundaries and ridership estimates, the project team conducted a series of commingled paratransit overflow simulations to determine the anticipated number of UTA On Demand vehicles needed to provide service for the most promising scenarios in terms of ridership and cost impact. The methodology section below details the key goals, considerations, and inputs for service simulations.

Simulation Methodology

Service simulations drive clearer understanding of how a service may perform given a series of provided constraints and inputs. Simulations model live service, enabling the team to understand the impact that certain changes to the service will have on service quality and ability to meet demand. In this case, the team applied existing UTA paratransit and UTA On Demand service settings (further detailed below) and the ridership scenarios outlined in the section above to solve for the UTA On Demand fleet needed to meet demand. Each simulation investigated how many additional UTA On Demand vehicles would be required to enable a commingled paratransit overflow service to operate in each scenario, assuming that ridership and quality of service parameters were held constant. The number of vehicles determined through modeling was then compared to current vehicle supply levels in each IMZ to assess whether the current fleet size was sufficient to serve additional paratransit ridership[10]. Simulations modeled a full day of service using historic trip data representative of an average day of service for both paratransit and UTA On Demand in the last year.

Successful transit services balance the supply provided by vehicle fleets, rider demand, and quality of service standards (including ADA requirements). Adjusting one element will directly impact the other variables — for example, shortening wait times will either require more vehicles to serve the same number of trips or reduce the total number of trips the system can serve. In this case, the

[10] Vehicle supply assessment only considered whether the service could meet additional paratransit demand; assessment did not account for any underlying unmet demand for UTA On Demand service.

current UTA On Demand service and paratransit service have existing quality of service parameters that were held steady throughout service simulations.

- Supply can be measured by vehicle hours, total budget, or size of fleet. Supply also directly correlates with a service's ongoing operating cost. With increased supply, a service can complete more passenger trips while keeping quality of service constant or, alternatively, offer greater quality of service.
- Demand is typically expressed in terms of a service's ridership. A significant increase in demand, or ridership, will necessitate either lowering the target quality of service to keep vehicle supply constant or adding extra vehicles to ensure that quality of service remains acceptable.
- Quality of service encompasses various metrics for how fast, frequent, comfortable, reliable, and efficient a service is. Quality of service parameters are typically set using a technology provider's algorithm for on-demand services but are largely dictated by ADA requirements for paratransit services. Significantly increasing quality of service will result in either higher operating costs from the additional vehicles required to serve the same level of demand or a lower passenger capacity if no vehicles are added.

Additional details for each of the three key variables and the specific settings used for each parameter are provided below.

Simulation Parameters

Simulations ensured that paratransit trip parameters heeded ADA paratransit requirements and UTA's current paratransit trip parameters, while UTA On Demand trips used current UTA On Demand trip parameters. In several cases, different parameters were applied to on-demand trips and paratransit trips. Examples of differences in parameter settings between on-demand and paratransit trips include, but are not limited to, the following:

- **Curb-to-curb vs. corner-to-corner:** UTA paratransit service applies a curb-to-curb stops model. In curb-to-curb service, vehicles can pick up riders directly outside their requested pick-up address and drop them off directly outside their requested drop-off address. UTA On Demand uses a corner-to-corner stops model, in which passengers walk a short distance (usually less than 400m) to a nearby corner or hub to meet their vehicle at a virtual pick-up point and are similarly, dropped off a short walk from their requested drop-off destination. Note that even on UTA On Demand service, riders with disabilities are always provided curb-to-curb service. The simulations mirrored these such that all paratransit trips were routed as curb-to-curb and all UTA On Demand trips were routed as corner-to-corner.
- **Pre-booked vs. on-demand:** UTA paratransit trips must be pre-booked at least one day in advance. Rides and routing are then finalized in advance of the day of service. UTA On Demand, on the other hand, uses an on-demand booking model, so passengers book rides when they want to ride for real-time service. Simulations ensured that paratransit trips were treated as pre-booked and were pre-scheduled the night before rides occurred, while UTA On Demand trips used an on-demand booking model and were slotted into the schedule in real time.
- **Maximum wait time:** Per ADA regulations, UTA paratransit uses a ready window for pick-up, which consists of a 30-minute window (15 minutes before requested pick-up time and 15 minutes after requested pick-up time) in which passengers may be picked up by the paratransit service. UTA On Demand applies a maximum wait time to pick up passengers who request rides on-demand, generally keeping wait times under 30 minutes. The simulations reflected wait time requirements as well, ensuring that on-demand trips had wait times under 30 minutes and that paratransit trips adhered to the 30-minute ready window.

Simulation Results

After gathering ridership estimates and quality of service parameters, iterative simulations were performed for each scenario. Simulations used existing quality of service parameters, and the ridership estimates established above. This allowed the project team to identify the necessary fleet supply to meet demand for each scenario. All simulations were completed using Via's proprietary, agent-based simulation tool, which predicts how different zones and fleet configurations will perform as real-world services.

The results of commingled paratransit overflow simulations performed for each scenario are presented below. Note that for Scenario 1, only those scenarios that would entail increased ridership of more than 10 trips per day and/or would require increases in fleet size were simulated.

Evaluating Fleet Impact for Commingling Within IMZs

Scenario 1 simulated a potential commingled paratransit overflow service for trips occurring within IMZs. The team only simulated East SLCO and West SLCO, given the significantly greater cost impact predicted for these scenarios relative to the other existing and potential IMZs. Compared to the predicted fleet size of 11 vehicles for the East SLCO IMZ and 15 vehicles for the West SLCO IMZ, simulations predicted relatively minor increases in fleet size of around 1-13% and 13-27%, respectively, to serve additional paratransit overflow trips.

Table 22: Simulation Results for Scenario 1 - Commingle within IMZs

IMZ	East SLCO	West SLCO	Total
Est. Annual Paratransit Ridership to be served by UTA On Demand service (trips start & end in IMZ)	4.8k	13.7k	18.5k
Est. Total Annual Ridership to be served by UTA On Demand service	140k	177k	317k
Estimated Additional UTA On Demand Vehicles Required to serve weekday paratransit rides with UTA On Demand	1 - 2[11]	2 - 4[12]	3 - 6
Estimated Additional Weekday UTA On Demand Vehicle Hour to serve paratransit rides with UTA On Demand	12 - 24	25 - 50	37 - 74

Assessing Fleet Needs for Serving Paratransit Trips Beyond IMZ Boundaries

Scenario 2 explored the potential for UTA On Demand to serve some paratransit trips outside of the existing IMZ boundaries in addition to existing UTA On Demand trips. The current average UTA On Demand fleet size is around five vehicles for South Davis County, six vehicles for SLC Westside, and 17 vehicles for SSLC, all of which were used as baselines for their respective IMZ scenarios below. Given that this scenario would require the vehicles to travel outside of current IMZ boundaries to serve additional paratransit trips, additional vehicles were expected to be necessary to serve the additional ridership. In total, simulation results estimated around three to six vehicles required to be added if UTA were to move forward with this version of commingled paratransit overflow service. The SSLC IMZ, with its additional coverage of paratransit trips outside of the IMZ boundaries, would require the most additional vehicles to operate a commingled paratransit overflow service (two to three vehicles), which is unsurprising given the size of the IMZ and high demand in the area.

Table 23: Simulation Results for Scenario 2 - Allow UTA On Demand service to serve some paratransit trips outside IMZ boundaries

IMZ	South Davis County - Plus Additional Coverage Area	South Davis County - Plus Additional Coverage Area	South Davis County - Plus Additional Coverage Area	Total
Est. Annual Paratransit Ridership to be served by UTA On Demand service (trips start & end in IMZ)	2.3k	3.3k	6.4k	12k
Est. Total Annual Ridership to be served by UTA On Demand service	41.5k	118k	276k	393k
Estimated Additional UTA On Demand Vehicles Required to serve weekday paratransit rides with UTA On Demand	0 - 1	1 - 2	2 - 3	3 - 6
Estimated Additional Weekday UTA On Demand Vehicle Hour to serve paratransit rides with UTA On Demand	7 - 15	16 - 32	32 - 48	48 - 92

Evaluating Fleet Requirements for Short Paratransit Trips During Peak Hours

Scenario 3a investigated the feasibility of using the UTA On Demand service to serve paratransit rides under 20 minutes in duration along with existing UTA On Demand riders during peak hours. UTA On Demand fleet sizes during peak service hours were used as baselines for simulated service, which equates to around five vehicles for the South Davis County IMZ, eight vehicles for SLC

[11] IMS Service Improvements 2030 Study in Alignment with UTA Five Year Service Plan, 2024 estimates fleet sizes of 11 vehicles for the East SLCO zone and 15 for the West SLCO zone to be operated without any paratransit trips.
[12] Additional IMZs were not simulated due to low projected ridership and low relative impact on cost.

Westside, and 23 vehicles for SSLC. In total, an additional five to eight vehicles would be required during peak periods to enable UTA On Demand to serve paratransit rides under 20 minutes during peak hours for all three IMZs. However, fleet size may fluctuate throughout the day. The SSLC IMZ would, again, require the most additional vehicles, but commingling trips in this IMZ would also result in the greatest savings for UTA relative to other IMZs.

Table 24: Simulation Results for Scenario 3a - UTA On Demand Serve Rides Under 20 Minutes During Peak Hours

IMZ	South Davis County	South Davis County	South Davis County	Total
Est. Annual Paratransit Ridership to be served by UTA On Demand service (trips start & end in IMZ)	900	900	2.1k	3.9k
Est. Total Annual Ridership to be served by UTA On Demand service	40k	115k	230k	385k
Estimated Additional UTA On Demand Vehicles Required to serve weekday paratransit rides with UTA On Demand	0 - 1	2 - 3	3 - 4	5 - 8
Estimated Additional Weekday UTA On Demand Vehicle Hour to serve paratransit rides with UTA On Demand	3 - 6	12 - 18	18 - 24	35 - 50

Evaluating Fleet Requirements for Long Paratransit Trips During Peak Hours

Scenario 3b also investigated the feasibility of using the UTA On Demand service to serve paratransit rides under 35 minutes in duration along with existing UTA On Demand riders during peak hours. UTA On Demand fleet sizes during peak service hours were used as the baseline for supply for the simulation. In total, a commingled paratransit overflow service for trips under 35 minutes during peak hours would result in an estimated additional seven to ten vehicles required to operate service, with around 40 to 60 additional weekday UTA On Demand vehicle hours. The additional fleet required in this scenario relative to Scenario 3a is at least partially attributable to the longer trip distances in this scenario relative to trips less than 20 minutes in total duration.

Table 25: Simulation Results for Scenario 3b - UTA On Demand Serve Rides Under 35 Minutes During Peak Hours

IMZ	South Davis County	South Davis County	South Davis County	Total
Est. Annual Paratransit Ridership to be served by UTA On Demand service (trips start & end in IMZ)	2.4k	1.9k	4.7k	9k
Est. Total Annual Ridership to be served by UTA On Demand service	42k	116k	233k	390k
Estimated Additional UTA On Demand Vehicles Required to serve weekday paratransit rides with UTA On Demand	0 - 1	3 - 4	4 - 5	7 - 10
Estimated Additional Weekday UTA On Demand Vehicle Hour to serve paratransit rides with UTA On Demand	0 - 6	18 - 24	24 - 30	40 - 60

5.6 Summary and Evaluation of Commingling Strategies

The commingling of UTA's paratransit and on-demand services offers significant potential for cost savings and enhanced service delivery across the transit network. The study explored three scenarios to assess the impact of this integrated approach on UTA's operations, with each scenario presenting distinct opportunities and challenges for commingling paratransit trips with UTA On Demand services. The primary aim was to optimize resource utilization by reallocating certain paratransit trips to the more cost-effective UTA On Demand service while maintaining high service standards and ADA compliance.

1. Scenario 1: Commingling Within IMZs: This scenario focused on commingling paratransit trips occurring within the existing and planned IMZs. The results indicated that UTA could achieve substantial cost savings by reallocating paratransit trips that both start and end within IMZ boundaries to UTA On Demand. For East and West SLCO IMZs, estimated savings reached up to $963,000 annually, with a minimal increase in fleet size (1-13% for East SLCO and 13-27% for West SLCO). This scenario

demonstrates that commingling within IMZs could effectively reduce operational costs while utilizing the current infrastructure and service capabilities.

2. **Scenario 2: Extending Commingling Beyond IMZ Boundaries:** This scenario examined the possibility of UTA On Demand serving some paratransit trips originating or terminating just outside existing IMZ boundaries. The results showed that expanding the commingling area beyond IMZ limits could save UTA approximately $632,000 per year. However, additional vehicles (estimated at three to six across all IMZs) would be necessary to cover the increased service area. This scenario offers moderate cost savings with manageable adjustments in fleet size.
3. **Scenario 3: Commingling During Peak Hours:** This scenario considered using UTA On Demand to serve shorter paratransit trips (under 20 and 35 minutes) within or near IMZs. The simulations showed potential savings of up to $204,000 annually for trips under 20 minutes and higher savings for trips under 35 minutes. This approach would require five to ten additional vehicles, depending on the trip duration criteria. Scenario 3 is particularly effective in addressing peak-hour congestion and reducing operational stress on UTA's paratransit service during times of highest demand.

6. Opportunity #4: Off-Peak Fare Adjustments

The project team also investigated the potential impact of changing fares on UTA's paratransit service to mitigate high demand on the service during peak periods. Current paratransit fares are $4.00 one-way. The FTA stipulates that fares on ADA paratransit service must remain within twice the fare that would be charged to an individual paying full fare (in this case, a maximum of $5.00 per one-way trip) at a similar time of day, on the entity's fixed route system. UTA prioritizes serving passengers at an affordable fare to ensure the service is accessible for high-need, low-income passengers, who make up a significant portion of its paratransit service's ridership. Rather than increasing fares during peak hours (7-10 a.m. and 1-4 p.m.) to attempt to decrease demand during peak paratransit service hours, the project team sought to investigate whether decreases in paratransit fares outside of peak hours could encourage some paratransit riders using the service during peak periods to instead use the service during discounted periods throughout the rest of the day.

6.1 Expected Paratransit Demand Elasticity

Whether fare changes will impact ridership demand depends on the level of passenger sensitivity to price changes in transit service, which is generally measured using elasticities, or the change in transit usage resulting from a change in service price, all else held constant. A high elasticity indicates high price sensitivity, or a significant change in transit use patterns when prices change, while low elasticity, or inelasticity, reflects that prices have a relatively low impact on transit demand, as passengers continue to use transit at the same or very similar levels regardless of the price of using the service. Several factors tend to impact transit elasticity, including geography, trip type, and user type. Transit-dependent riders, or riders that heavily rely on public transit for their transportation needs, such as low-income riders and riders with disabilities, tend to be less price sensitive or less elastic than choice riders, or riders that have alternative transportation options such as a personal vehicle. Essential trips, particularly those that require more precise pick-up and drop-off times, such as medical trips and commutes, also tend to be less price elastic than non-essential trips like shopping or leisure trips.[13] ADA paratransit ridership is generally assumed to be less elastic than general public transit ridership, given that viable alternatives to paratransit may not exist for many paratransit riders, who often face physical and financial barriers to using private transportation modes or other forms of public transit. Moreover, ADA paratransit is often used for essential trips, such as medical appointments and rides to adult activity centers.

Due to paratransit's relatively inelastic demand overall, reducing or increasing fares on UTA's paratransit service is expected to have a low impact on total demand. However, fare decreases during off-peak hours could still encourage riders to switch the time of day of their rides, from peak demand periods to off-peak demand periods, effectively relieving some of the peak period demand (making it easier for operators to serve this time of day) and lowering the cost to riders.

Additional research into the price sensitivity of UTA's paratransit riders is needed to fully determine the potential impacts of this fare change on operations and fare revenue. However, the illustrative example below demonstrates the potential impact of introducing reduced fares during off-peak periods based on general elasticities for paratransit services (from the Transit Cooperative Research Program (TCRP) Report 119, "Improving ADA Complementary Paratransit Demand Estimation," 2007).

Table 26: Impact of Off-Peak Fare Reductions on Demand and Revenue

Off-Peak Fare	Assumed Rate of Increase in Demand[14]	Annual Estimated Off-Peak Demand	Annual Off-Peak Fare Revenue	Percent change in in off-peak fare revenue
$4 (Current)	n/a	82,000	$330,000	n/a
$3 (25% reduction)	1.2	98,400	$295,200	-10.50%
$2 (50% reduction)	1.7	140,000	$280,000	-15%

[13] Victoria Transport Policy Institute. 2024, July 31. "Transit Price Elasticities and Cross-Elasticities."

[14] Based on the "base fare factor" provided to calculate paratransit demand in the TCRP report 119, "Improving ADA Complementary Paratransit Demand Estimation," 2007. These multipliers assume all other elements of the service remain equal. Further analysis is recommended to finetune how price sensitive UTA paratransit riders are.

Table 26 shows what the shift in peak vs. off-peak demand could be and the impact on fare revenue should UTA reduce off-peak fares by $1 and $2 from the current paratransit fares of $4. For this example, weekdays from 7-10 a.m. and 1-4 p.m. are assumed to be peak hours (based on the three hours in the morning and three hours in the afternoon with the highest percentage of ridership). All other hours are assumed to be off-peak hours. Based on ridership data, 70% of total trips occurred during peak hours.

In the example above, using the TCRP's base assumptions for paratransit fare elasticity, a reduction in off-peak fares by one dollar would reduce peak trips by about 16,400 trips, reducing fare revenue by about $35,000. A reduction in off-peak fares by $2 would reduce peak trips by about 60,000, resulting in about $50,000 less in fare revenue.

6.2 Benefits to UTA of Introducing Reduced Fares During Off-Peak Periods

The fare changes that UTA elects to introduce may differ from the example provided above; however, the expected benefits to UTA of introducing reduced fares during off-peak periods are as follows:

- **Reduced demand during peak periods:** Since fares would only be reduced during off-peak periods, some riders would be expected to shift from taking paratransit trips during peak service periods (7-10 a.m. and 1-p.m.) to off-peak periods throughout the remainder of the day, relieving some of the high demand on the service during peak periods. This could also potentially reduce the peak fleet size, and thus, drivers required to serve the paratransit trips.
- **More on-time performance during peak periods:** The expected reduction in demand during peak periods could also drive increased on-time performance during peak periods, as fewer trips would occur during service peak periods and drivers would have additional buffer time in between trips to pick up passengers during peak hours. With fewer rides to fulfill during these periods, drivers would be able to maintain on time performance more easily.
- **Less trip negotiation:** Additional availability to serve rides during peak periods could also minimize the need for trip negotiation, or adjustments that UTA must make to pick-up times to serve riders when there is high demand at the same time. This could reduce manual reworking of pick-ups and drop-offs for UTA.

7. Opportunity #5: Expanding Eligibility Centers

The project team also investigated the impact of introducing an additional eligibility center to UTA's paratransit service for current and potential riders to complete their eligibility evaluation and mobility device certification. Throughout the Paratransit Forward Study's community engagement efforts, paratransit riders and potential riders listed the process of determining their eligibility to use UTA's paratransit service, particularly traveling to the eligibility center, as one of the primary struggles with the service. This section focuses on recommendations for challenges that can be addressed by the introduction of an additional eligibility center in the paratransit service area. While changes to the eligibility process itself were also investigated as part of the Paratransit Forward Study, no recommendations are being made at this time to change the eligibility process, nor was the process identified as an area of further development by UTA.

Any additional facilities would be introduced as a supplement to the existing eligibility center in Murray, so paratransit riders could elect to complete their eligibility assessment at the center most conveniently located for them. Adding additional facilities could reduce travel time to an eligibility center for some passengers, mitigating one of the barriers to completing eligibility assessments for individuals. Since UTA provides free rides to and from the current eligibility center for eligibility applications, the agency may also consider providing free rides to any additional eligibility centers to ensure equity. Furthermore, adding facilities that are closer for some riders could slightly reduce costs for UTA by shortening trips to and from the eligibility centers.

7.1 Current Mobility Center Assessment

Determining eligibility for riding UTA paratransit service currently requires riders to complete an in-person functional assessment at the Mobility Center in Murray. The assessment enables UTA to determine a potential rider's physical and cognitive ability to use general UTA transit services. The UTA Mobility Center is centrally located within UTA's paratransit service area, near several areas with moderately dense populations of people living with disabilities, as shown in the figure below. However, several areas with the highest densities of people living with disabilities are required to travel long distances to reach the eligibility center for eligibility assessments, especially from areas like Ogden and Provo.

The eligibility assessments include a functional physical assessment evaluating applicants' ability to board and ride accessible fixed-route buses and light rail services, as well as navigate various geographic

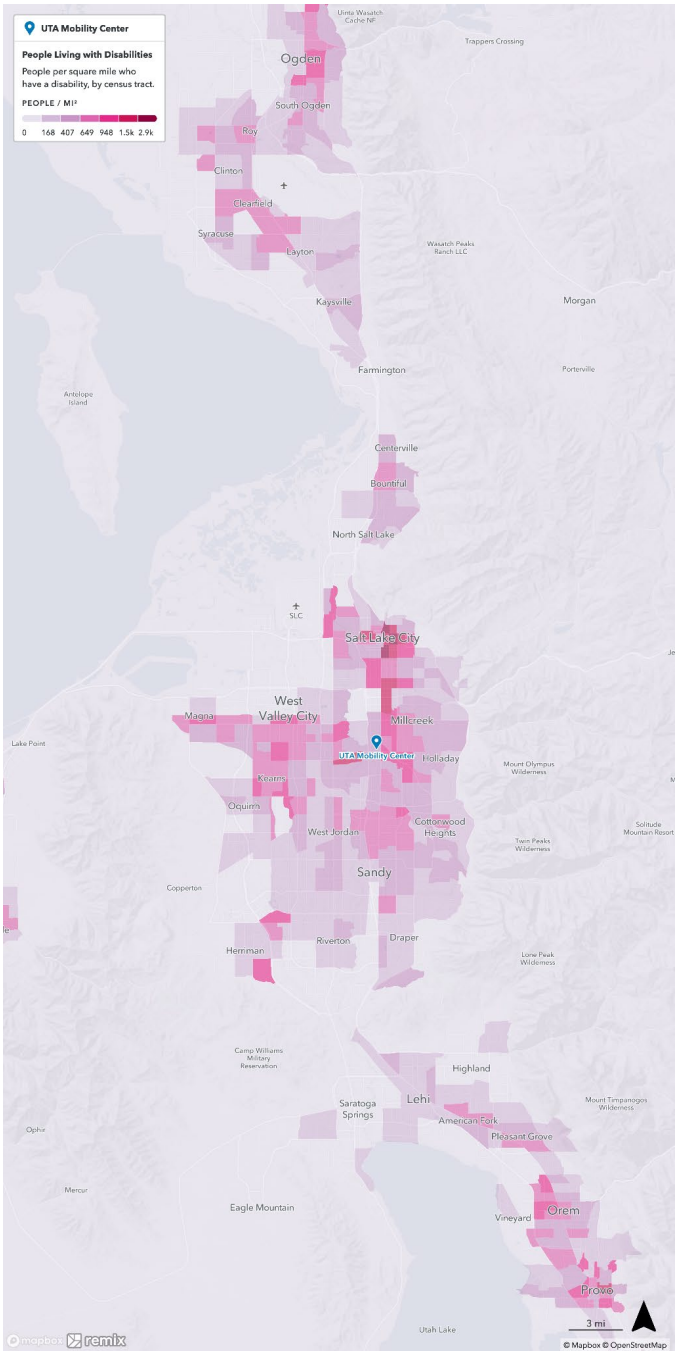


Figure 28 – Density of People Living With Disabilities in the Region Surrounding the UTA Mobility Center: This map shows the density of people with disabilities across the UTA service area, with the centrally located UTA Mobility Center in Murray. While the center is near some moderately dense areas, it is far from several high-density regions, such as Ogden and Provo, highlighting the challenges for paratransit users in distant areas who need to travel to Murray for eligibility assessments.

terrains.[15] The physical assessment also tests skills such as balance, strength, coordination, and range of motion. More specifically, the physical assessment observes endurance, distance, crossing busy streets, judgement, and community assessment. The community assessment takes the customer out of the previous contained environment and then introduces real life transit experience of busy pedestrian traffic at the Murray North TRAX Station and the Murray Central Intermodal Hub, which is a major connection point to other UTA services such as TRAX, FrontRunner, and many UTA buses. The customer will navigate the platform traffic and board and ride TRAX, and then undergo a physical assessment measuring endurance, distance, crossing busy streets, incline, curb cuts, sidewalks, auto and pedestrian traffic, and extreme noise from the busy bus hub.

Potential riders must complete a Functional Assessment of Cognitive Transit Skills (FACTS), which assesses passengers' cognitive abilities to use transit. FACTS is a validated tool that assesses transit skills through a simulated bus trip, evaluating bus travel skills, community safety skills, and general orientation. In addition to the FACTS, another cognitive assessment used by UTA is the Montreal Cognitive Assessment (MoCA). MoCA is a validated and widely used assessment used for detecting cognitive impairment.

Together, the physical and cognitive assessments are used to determine an individual's eligibility for paratransit services, ensuring that those in need of paratransit service receive the necessary support.

In addition to physical and cognitive assessments, applicants with mobility devices are required to have their mobility devices weighed and measured to ensure they can fit on paratransit service vehicles and are within the required weight limit for wheelchair lifts on paratransit vehicles. Following initial approval of mobility devices, passengers must travel to eligibility centers to weigh their mobility devices and determine if they are suitable to be transported on paratransit service vehicles each time passengers get a new mobility device[16]. Per ADA requirements, paratransit vehicles must be capable of accommodating, at a minimum, an occupied wheelchair weight of 600 pounds, measuring 30" x 48." UTA's paratransit service vehicles currently have capacity for occupied wheelchairs weighing 800 pounds with wheelchair and occupant together that are 54 inches long and 33 inches wide. Note that in recent years, electric wheelchairs have continued to increase in size, weight, and popularity amongst paratransit riders as they become more accessible.

The ADA also stipulates that the eligibility process developed by transit agencies may not impose unreasonable administrative burdens on applicants and may not involve user fees or application fees to the applicant. Applicants are also prohibited from being required to pay for transportation to and from an assessment, so UTA provides free transportation for applicants to and from the UTA Mobility Center. While this removes some of the burden of traveling to and from the eligibility center, travel time is often extensive for applicants to get to and from the eligibility center, making the process arduous and time consuming, especially if they must make the journey several times to weigh and reweigh their mobility devices.

7.2 Adding Additional Eligibility Centers

To mitigate the barriers to completing eligibility assessments for current and potential paratransit riders, the study team also investigated the potential to introduce additional eligibility centers, so applicants and riders are not required to travel as far to an eligibility center. Any additional facilities must be located adjacent to high frequency transit, as part of the assessment requires going to the field to test with real transit infrastructure. Moreover, to ensure that the process is equitable for all riders, the test inside the facility must be the same across all centers. This involves having sufficient space for a full-sized bus and ramps inside the facility, precluding the agency from introducing at-home eligibility assessments. The existing center is about 10,000 square feet and it is anticipated that any additional facilities will be required to be the same size or larger.

For a fair, consistent, and equitable eligibility process, the assessments between additional facilities would need to mirror the community portion of the assessment. The facility would need to be located in an area with quick access to multi-modes of transit

[15] Passengers that are legally blind in both eyes must provide the required Healthcare Provider Vision forms stating passenger's vison acuity and legally blind status in both eyes. Once, forms are provided a physical assessment will no longer be required. Eligibility of passenger's route familiarity will be based off their self-disclosure. Passengers with low vision or impaired vision are still required to complete the physical assessment.
Eligibility assessments are ability based and has a test out process. If at any time during the eligibility process the evaluator determines the passenger is incapable of independent travel on UTA transportation services, the evaluator will stop administering any further assessments because they are no longer necessary.

[16] Typically, insurance companies, Medicaid, and Medicare will only allow a replacement of a power wheelchair, and manual wheelchair every five (5) years.

and frequency. Currently, potential riders ride TRAX during the assessment to a busy Intermodal Hub where it is a major connection point to other UTA Services such as TRAX, FrontRunner, and many UTA buses. The customer will navigate the platform traffic, board and ride TRAX, and then a physical assessment measuring endurance, distance, crossing busy streets, incline, curb cuts, and sidewalks, auto and pedestrian traffic, and extreme noise from the busy bus hub. Additional facilities with this same type of access would be very expensive to obtain. Another consideration is that not all other service areas are the same and offer the same modes of transportation. For example, Ogden and Provo do not have TRAX service.

Potential neighborhoods that UTA could consider for additional eligibility centers include Ogden, Salt Lake City, Provo, and West Valley City. These areas have high densities of people with disabilities. Applicants and riders living in these regions are currently required to travel longer distances to reach the existing UTA Mobility Center for eligibility assessments.

It is expected that an additional eligibility center would cost approximately the same as the current center to operate. The operating costs of the existing eligibility center are about $400,000 per year (not including any lease fees, as UTA owns the property). This cost includes staff wages, services, supplies, and utilities. Some staff resources and overhead could potentially also be shared across multiple facilities for better cost efficiency. However, for capital expenses, UTA could look into grants from the Federal Transit Authority, such as the Bus and Bus Facilities Program.

Given the high cost of operating additional mobility centers, as well as the complexities of ensuring equitable assessments in varying locations, UTA could consider adding just additional centers for riders to reassess their mobility devices. Moreover, riders are typically eligible for paratransit service for five years after initial approval, at which point UTA determines whether an eligibility recertification is necessary. However, any new mobility devices must be reassessed, sometimes requiring riders to travel long distances to the center for a quick assessment more frequently than every three to five years. As a significant portion of trips to and from the eligibility center are for the shorter mobility device certification as opposed to an eligibility assessment, adding more mobility device certification centers could have a large impact on removing barriers for paratransit passengers at a modest cost to UTA. Mobility device certification would require a scale compatible with weighing mobility devices up to 800 pounds and sufficient space to measure the length and width of devices up to 54”. Currently, UTA uses a floor/ramp scale that is rated for 5,000 pounds. These scales can cost under $5,000 dollars to purchase and could potentially be located at existing UTA-owned buildings. Additionally, each scale is required to have a calibration certification done every six months to ensure accuracy. Currently, today this service is $250.00 per certification service. For further cost efficiency, staff could potentially be shared across facilities, especially if assessments at these supplementary locations were offered at more limited times.

7.3 Partnering With Community Organizations

Another more cost-effective solution than adding an entirely new eligibility center that UTA may consider, either in addition to or in lieu of adding new eligibility centers, is partnering with community organizations that have qualified scales, enabling passengers to complete their mobility device certification at several locations throughout the paratransit service area as opposed to just one location in the center of the service area. This would help decrease the travel required for passengers to certify or recertify their mobility devices, removing some barriers of completing the eligibility process while preventing UTA from incurring the additional costs associated with building additional eligibility centers. Note that this option would, however, incur some administrative costs required to operate the mobility device scales. Some non-profits and service providers in the region have large scales that could potentially be used to weigh mobility devices and ensure they are in compliance with UTA vehicle requirements. UTA could look into partnerships with these organizations to provide additional options for riders to complete their mobility device certifications.

Additional mobility device certification center locations should prioritize serving areas in the paratransit service area that are far from the current UTA Mobility Center and in which a large portion of current and potential paratransit riders live. As such, UTA may also consider introducing mobility device certification centers in its current subcontractor locations, namely the United Way office in Provo and the MV Transportation facility in Ogden. In the long-term, UTA could consider building this into their subcontractor agreements.

8. Opportunity #6: Enhancing Communication – Rider App and Web Portal

The project team also investigated the potential benefits of introducing a rider app and web portal for riders to book, view, edit, and cancel rides without calling UTA via phone. As of the time of writing this report, UTA is in the process of introducing a rider app and/or web portal. Throughout the project team's analysis of paratransit service, the team encountered several opportunities for service improvements that could be addressed via a rider app and/or web portal. This section focuses on recommendations for challenges that can be addressed by the introduction of a customer-facing booking platform.

The rider app and web portal would be introduced as a supplement to the existing call-in booking method, so paratransit riders would still be able to call UTA directly to book a ride with a dispatcher. Adding the option to use a rider app and/or web portal to book rides would allow for passenger self-service booking and likely entail additional features such as the ability to track vehicle arrival times and receive communications from UTA about paratransit service, increasing booking flexibility and visibility into upcoming rides for paratransit users and their caregivers.

8.1 Limitations of the Current Paratransit Booking Process and Rider Preferences

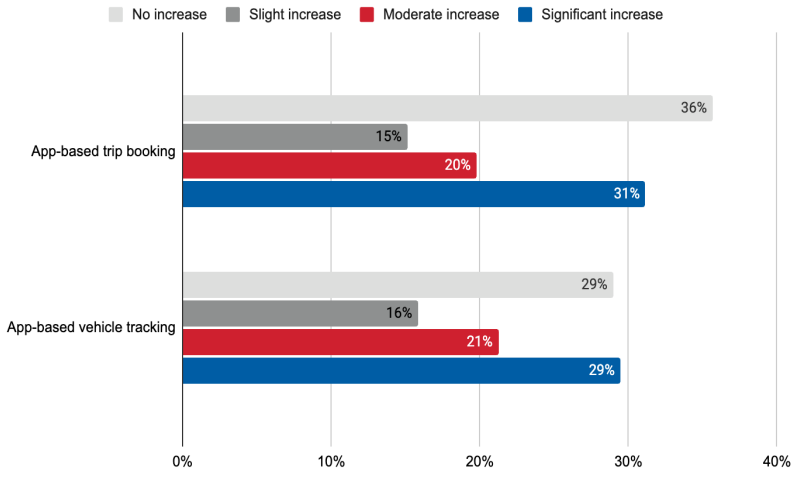
The current booking process for UTA paratransit passengers requires calling UTA at least one day in advance of a trip to book a ride. UTA's dispatchers then book passengers' rides on the service using their paratransit software (Trapeze). Once booked, dispatchers provide a pick-up window to passengers over the phone. The current booking process provides limited visibility into a rider's precise pick-up times and any changes that occur after booking, since there is no customer-facing application or web portal for riders to view. However, riders are able to receive an automated text message a few minutes before their scheduled pick-up time.

Results from the UTA Paratransit Forward survey indicate support from current and potential paratransit passengers for app-based vehicle tracking and trip booking; when asked to rate several different service changes based on how likely a change would encourage them to use the paratransit services more, over half of Paratransit Forward Study survey respondents (51%) indicated that app-based trip booking would moderately or significantly increase their likelihood of using the service, while half of respondents (50%) indicated that app-based vehicle tracking would moderately or significantly increase their likelihood of using paratransit service.

8.2 Rider App and/or Web Portal Features

Trip booking platforms and apps differ in the exact features provided but generally include some combination of self-service booking and ride tracking for passengers. Introducing a rider app and/or web portal for UTA paratransit passengers should entail the following features and rider-facing benefits:

- **Streamlined ride booking:** Introducing a web portal and/or rider app would enable riders to book, edit, or cancel rides independently rather than calling UTA directly. The self-service portal would also enable them to make these trip edits on their own schedule, regardless of the UTA call center hours.
- **Ride reminders:** Many ride booking portals and applications offer rider communication features, including ride reminders that notify passengers of an upcoming ride ahead of their trip. Reminders would also prompt passengers to cancel rides if they are no longer needed.



Results from the Paratransit Forward Study survey, which asked respondents to rate service changes based on how likely they were to impact respondents' likelihood of using paratransit service. For app-based trip booking, 51% of respondents indicated it would moderately (20%) or significantly (31%) increase their likelihood of using the service. Similarly, for app-based vehicle tracking, 50% reported it would moderately (21%) or significantly (29%) increase their service usage.

Opportunities for Additional Rider Communication

Based on feedback gathered throughout the study from survey respondents, current paratransit riders, and stakeholders, there is strong interest in improved and expanded rider communication outside of the recommended push notifications provided through a rider app and the automated text that is currently sent out before a scheduled pick-up.

Additional communication could include reminders of upcoming rides via text, call, or email. Though not provided directly through the application, ride reminders can be critical to provide visibility to riders as to when they will be picked up, reducing rates of no-shows for the service. As most respondents to the Paratransit Forward survey responded via text link, current and potential UTA paratransit riders would likely be responsive to text message communications about the service.

CAT members, stakeholder and rider interviewees, and respondents to the Paratransit Forward survey also requested rider communication in the form of drivers announcing that they have arrived at their respective pick-up locations to pick riders up. To maintain rider confidentiality and anonymity, drivers could alert riders of their arrival by announcing "UTA paratransit driver has arrived," as opposed to announcing a rider's name.

- **Real-time vehicle tracking:** UTA paratransit passengers are given a ready window or a 30-minute window of time (15 minutes before requested pick-up time and 15 minutes after requested pick-up time) in which they may be picked up by UTA's paratransit service. Real-time vehicle tracking provided by a rider app or web portal would enable passengers and/or their caregivers to see their vehicle traveling to them in real time, giving them a more precise idea of when they will be picked up. The feature is particularly helpful for passengers with mobility devices, who may require additional time to prepare to board a vehicle. In inclement weather conditions, vehicle tracking can also reduce unnecessary time spent waiting outside for a vehicle. Vehicle tracking during rides can give passengers useful insights into when they can expect to arrive at their destination and also serve as a useful safety feature for caregivers and family members to ensure that passengers are picked up and dropped off safely.
- **Communication:** Providing passenger communication via push notifications from a rider app, for instance, can enable UTA to quickly and easily provide key information to riders. This could include but is not limited to service changes, such as updated service hours or service outages in extreme weather conditions or changes to a rider's expected pick-up or drop-off time.
- **Virtual payment options:** Many rider apps and booking portals also provide opportunities for electronic fare payment. Enabling riders to pay for rides in the application as opposed to onboard the vehicle may be easier for some riders and also reduce the boarding times. Applications also often allow passengers to store their payment options and ride vouchers directly in the application, allowing enhanced tracking and payment records where applicable.
- **Accessibility:** Adding a rider-facing ride booking platform would also increase accessibility of the booking process, as not all riders may be able to book rides over the phone. Rider-facing booking platforms can be designed to be ADA compliant for riders to easily book paratransit rides from their mobile devices or computers. Rider apps and web portals also ensure that booking is available throughout the day, rather than limiting booking options to the hours at which dispatchers are available to book rides (weekdays from 7 a.m. to 5 p.m.).

8.3 Benefits to UTA of Introducing a Rider App and/or Web Portal

Introducing a rider app and/or web portal for paratransit riders could deliver the following benefits to UTA:

- **Fewer no-shows:** Ride reminders can reduce rates of no-shows, or instances of passengers not taking a scheduled trip or not boarding a vehicle within a specified time frame. With reminders, passengers are less likely to forget about a booking or will be reminded to cancel rides. This will result in fewer vehicles waiting for riders that are no longer intending to take trips and also driving unnecessarily to/from pick-up points
- **Faster boarding:** Depending on how far in advance riders are notified about upcoming rides, ride reminders could also reduce the dwell time of paratransit vehicles (the time a vehicle spends stopped to pick up or drop off passengers). Reminders also help riders be more prepared for an upcoming ride when a vehicle arrives to pick them up. Similarly, caregivers who are tracking passengers are more likely to be ready to meet vehicles for passenger drop-off.
- **Streamlined processes:** Enabling riders to self-book their rides can reduce manual processes for UTA staff, who are currently required to book rides on behalf of riders
- **Potential cost savings:** Freeing up dispatcher hours previously spent booking rides could result in cost-savings for UTA, as staffing resources could be reduced or reallocated. Fewer no-shows and faster pick-ups/drop-offs may also result in more efficient operations and cost-savings in terms of vehicle hours.
- **Fewer rider complaints:** Increased visibility into pick-ups and drop-offs could also reduce rider complaints, particularly around service timing and missed rides.

9. Implementation

Should UTA decide to proceed with the alternatives presented in this study — namely, the integration of TNCs and/or the expansion of paratransit coverage, it will involve not only deploying the new services but also providing the necessary training, technical support, and adjustments to policy and operations to create a seamless and sustainable operation. Below is a comprehensive discussion of the implementation strategies for different alternatives analyzed in this study, addressing key considerations such as accessibility, fleet requirements, service operations, and marketing.

9.1 Summary of Results

The alternatives analysis identified several key strategies for enhancing UTA's paratransit services: integrating TNCs, expanding the coverage area, commingling services with UTA On Demand, adjusting off-peak fares, expanding eligibility centers, and enhancing communication through digital platforms. The integration of TNCs could lower costs and increase service flexibility by partnering with third-party providers, but it requires robust contract management to ensure accessibility and maintain service quality. Coverage expansion options, such as extending service beyond current ADA-required boundaries with premium fare structures, offer a scalable approach to improving access while enhancing cost recovery, although they require careful consideration of demand and pricing dynamics.

The commingling strategy proposes merging paratransit and on-demand services to optimize resource use and reduce operational costs, necessitating careful planning to ensure ADA compliance and maintain service quality. Off-peak fare adjustments could encourage riders to shift to less congested times, improving overall efficiency, while expanding eligibility centers would enhance access by reducing travel burdens for applicants. Finally, enhancing communication through a rider app and web portal could streamline trip management and improve the customer experience by reducing manual processes.

Each of these alternatives provides a promising path forward but comes with specific challenges that must be addressed to achieve the best balance of cost efficiency, accessibility, and service quality.

9.2 TNC Integration: Implementation Considerations

Accessibility of TNC Fleets

One of the most critical aspects of integrating TNCs into UTA’s paratransit services is ensuring that the TNC fleets are accessible to all users, including those with disabilities. Currently, not all TNC vehicles are equipped to handle passengers with mobility challenges, such as those requiring wheelchairs. To address this, UTA would need to establish strict accessibility standards for any TNCs contracted to provide paratransit services. This could involve requiring a certain percentage of the TNC fleet to be equipped with ramps or lifts or providing incentives for TNCs to invest in accessible vehicles.

In addition to physical accessibility, it is important to consider service accessibility. TNCs would need to be integrated into UTA’s existing booking and scheduling systems to ensure seamless service delivery. This might involve developing or adapting existing platforms to handle both traditional paratransit vehicles and TNC-provided services, ensuring that all customers have equal access to booking and receiving the service they need.

Adoption and Operational Scope

The adoption of TNCs as a complement to UTA’s existing paratransit services could follow one of two primary models: full outsourcing or a hybrid model. In a full-outsourcing model, TNCs would operate independently, handling all aspects of the service from booking to dispatch. UTA’s role would be limited to oversight and quality assurance. This model could reduce operational costs and complexity for UTA, but it also introduces risks related to service quality and consistency, especially concerning accessibility and customer satisfaction.

Alternatively, a hybrid model would involve closer integration of TNC services within UTA’s existing paratransit framework. UTA could maintain control over key aspects of the service, such as booking, dispatch, and customer service, while subcontracting the actual transportation to TNCs. This model would allow UTA to retain more control over service quality and ensure that all paratransit policies, particularly those related to accessibility, are strictly enforced.

Regardless of the model chosen, clear contractual agreements will be essential to define the roles, responsibilities, and expectations for TNCs. These contracts should include provisions for performance monitoring, compliance with accessibility standards, and mechanisms for addressing service failures or customer complaints.

Driver Training and Service Operation

Whether TNCs operate independently or under a hybrid model, driver training will be a crucial component of the implementation. TNC drivers will need to be trained in the specific requirements of paratransit service, including how to assist passengers with disabilities, use accessible equipment, and handle medical emergencies. UTA may need to collaborate with TNCs to develop training programs that meet these requirements or provide training directly to TNC drivers. Additionally, UTA will need to establish protocols for communication between UTA, TNCs, and customers to manage bookings, service updates, and any issues that arise during service delivery. A formal contract between UTA and any TNC partners will be essential to define these training requirements, operational protocols, and other responsibilities.

Marketing and Rider Education

To ensure the successful adoption of TNC-integrated paratransit services, UTA will need to invest in marketing and rider education. Customers will need to be informed about the new service options, how they can book rides, and what to expect in terms of service quality and accessibility. Marketing campaigns should emphasize the benefits of the new services, such as increased flexibility and potentially shorter wait times, while also addressing any concerns related to accessibility and service consistency.

Education efforts should include clear, easy-to-understand guides on how to use the new services, available in multiple formats (e.g., print, online, video) to ensure accessibility for all customers. UTA could also hold community meetings or workshops to introduce the new services, answer questions, and gather feedback from customers.

A relevant example of effective rider education is the Massachusetts Bay Transportation Authority (MBTA) RIDE Flex pilot, which introduced TNC partnerships for paratransit riders. Specifically, MBTA implemented structured training sessions for initial pilot participants, developed step-by-step printed guides, and collaborated with Uber and Lyft to enhance app accessibility for riders with disabilities. This proactive approach helped ensure that riders were comfortable with the new system, facilitating a smoother transition and minimizing service disruptions.

9.3 Coverage Expansion: Implementation Considerations

Flexibility in Fare Structures and Assumptions

The coverage expansion scenario, particularly the 1-Mile or More Premium Expansion, offers UTA the opportunity to extend paratransit services while also exploring different fare structures to improve cost recovery. However, it is important to recognize that the assumptions used in the analysis — such as the specific fare levels and projected demand — are not fixed and may need to be adjusted as the service is implemented.

One key consideration is price elasticity, and, more importantly, ensuring affordable access for paratransit users. For example, a higher premium fare might reduce demand but increase farebox recovery, while a lower fare could increase demand but lead to lower cost recovery. UTA will need to monitor customer response to the new fare structure, prioritize affordability and equitable access, and be prepared to make adjustments to optimize both service usage and financial sustainability.

Another consideration is the flexibility in service coverage. While the analysis focused on specific expansion distances, UTA may need to adjust the coverage areas based on actual demand, operational challenges, and customer feedback. This could involve expanding or contracting service boundaries, introducing tiered service levels, or adjusting service hours to better match customer needs and operational capacity.

Fleet Requirements and Service Operation

Implementing the coverage expansion will likely require adjustments to UTA's existing fleet. While this study did not perform a detailed analysis of fleet requirements, it is anticipated that the expanded service areas will necessitate additional vehicles, particularly if demand grows as projected. UTA will need to assess its current fleet capacity and consider whether to acquire new vehicles or reallocate existing resources

UTA will also need to develop new routes, schedules, and dispatch protocols to ensure that the expanded service operates smoothly and efficiently. This may involve using advanced scheduling software to optimize routes and minimize wait times, as well as investing in real-time tracking and communication systems to manage service delivery effectively.

Marketing and Rider Education

As with the TNC integration, successful implementation of the coverage expansion will depend on effective marketing and rider education. UTA will need to communicate the changes to its customers, including details about the new service areas, fare structures, and how to book rides. Marketing efforts should focus on the benefits of the expanded coverage, such as increased accessibility and service options, while also addressing any concerns related to fare changes or service availability. Rider education should include clear instructions on how to use the expanded services, particularly for customers who are not familiar with the new areas or fare structures. UTA may also consider offering promotional fares or incentives to encourage early adoption and gather feedback on the new services.

9.4 Commingling: Implementation Considerations

Should UTA elect to move forward with commingled paratransit overflow service, implementing the service with the necessary training and technical support needed will be critical to ensuring the service can be seamlessly operated and will be sustainable for long-term success.

Driver Training

If UTA proceeds with a commingled paratransit overflow service using the UTA On Demand service, additional driver training will be required to ensure that UTA On Demand drivers are sufficiently prepared to drive passengers with disabilities and meet their transit needs. While UTA On Demand currently serves passengers with mobility devices, paratransit drivers are required to undergo additional training to meet the needs of passengers with disabilities. This may include training on the following:

- Ensuring compliance with paratransit service requirements, such as the ready window
- Operating and using accessibility equipment on vehicles
- Using UTA On Demand software to monitor passenger needs
- Responding to the needs of passengers with disabilities day-to-day and in emergency situations
- Providing beyond-the-curb service to assist passengers traveling to and from the vehicle to the first exterior door at a rider's pick-up and/or drop-off location
- Providing stop or route announcements as needed

The extent of driver training required may depend on which form of commingling overflow service UTA chooses to explore, and whether the agency decides that only select groups of passengers or select trips are eligible for commingled paratransit overflow service. If only select groups will be taking the service, less extensive driver training may be permissible. UTA may also be able to adapt existing protocols and training materials developed for its paratransit service capacity in UTA On Demand. Training costs are accounted for in the cost estimates provided for each scenario.

Fleet Requirements

To enable a commingled paratransit overflow service to operate efficiently and effectively, UTA should ensure that a sufficient portion of its UTA On Demand fleet is accessible and equipped with the necessary components to handle paratransit passengers. The extent to which vehicles should be made accessible depends on which passenger groups will be taking the service. However, paratransit groups that will be taking the service should be able to do so as they would any traditional paratransit service. As of the time of writing this report, UTA plans to upgrade their UTA On Demand fleet service to be entirely accessible, meaning the service would be able to handle paratransit passengers as needed. Commingling may also impact the eligibility process. While all zones have WAV, UTA may want to consider adding a step to the mobility process to identify barriers of a customer's ability to board a van.

Service Operation

To ensure that the paratransit overflow service operates smoothly, the project team recommends that UTA still enables paratransit passengers to book rides through the current booking method, which requires passengers to call UTA's paratransit office to book a ride. Paratransit trips can then be manually booked on UTA On Demand in the back end of the UTA On Demand platform by dispatchers. As paratransit trips are pre-booked a minimum of a day in advance, trip booking will occur ahead of UTA On Demand on-demand booking, enabling UTA to ensure that paratransit rides can be provided and minimizing the day-of-service impact on UTA On Demand wait times and rider experience. Importantly, this approach fosters continuity in paratransit passengers' current booking

experience, minimizing changes from the rider perspective. Maintaining current booking practices is particularly important given that not every trip that a given rider takes will necessarily be commingled, so riders should be able to book using the same method regardless of whether their trip is commingled.

Administrator Training

UTA should partner with the on-demand transit software provider (currently Via) to create a bespoke process to effectively transfer designated paratransit overflow rides to be served by UTA On Demand into the Via system. Process changes should be tailored to meet UTA administrative staff's (e.g., dispatchers, schedulers, and customer service representatives) unique needs and requirements. For example, UTA could download or create a list of paratransit rides and simply email it to someone at Via who will upload it into the UTA On Demand system. Administrative requirements for service generally include supervising live service, responding to issues when needed, booking trips for riders making reservations over the phone, and being familiar with service performance indicators (in order to assess system performance over time). It may also entail communicating passenger assistance requirements for passengers with disabilities to drivers as needed. It is expected that after the initial setup, most of the administrative requirements can be completed by a combination of existing paratransit support staff and UTA On Demand customer service. Additional costs for initial setup and ongoing administrative needs were not considered in the estimates above.

Marketing and Rider Education

Marketing and community engagement are important steps to inform the public about changes to service, particularly when new service models are being introduced to riders. Many paratransit riders are very familiar with the current service, including the booking process, drivers, and vehicles with which UTA's paratransit service operates. Minimizing changes to this process is critical to driving buy-in from paratransit customers, who may be averse to changes in the process. As such, assuring riders that the booking process will be the same and that drivers will be cross-trained will be an important aspect of outreach and rider education, should UTA decide to move forward with a commingled paratransit overflow service. Riders may be altogether unfamiliar with on-demand service and should be given advance notice on any differences in vehicle appearance as well as what they can expect when boarding, riding, and exiting. Some examples of such a joint marketing and rider education strategy could include creating a dedicated webpage for the service, developing informational videos, sharing information on social media channels, and hosting informational meetings with local community-based organizations.

A relevant example of rider education for microtransit adoption can be seen in Cheyenne Transit's transition to app-based microtransit booking, where initial rider resistance led to an overwhelming number of call-in bookings. To address this, dispatchers engaged in proactive outreach, educating riders on self-service options through step-by-step guides and direct assistance. This hands-on approach gradually increased app adoption, reducing call volume and improving operational efficiency.

9.5 Off-Peak Fare: Implementation Considerations

UTA has not committed to introducing fare changes at the time this study was written; however, if the agency decides to introduce fare changes in the future, additional measures should be taken to ensure successful implementation. Prior to permanently implementing changes in fares to its paratransit service, UTA should further investigate how price-sensitive its riders are by conducting a pilot or trial. While preliminary studies have shown that paratransit demand is relatively inelastic, further quantifying by how much fares would need to be decreased to incentivize riders to shift their rides from occurring during peak periods to instead take place outside of peak periods, for example, is essential to understanding the potential impact to demand for the service and the service's associated costs. To prevent a shift in the peak times, UTA could also look to only offer off-peak hours when ridership is at its lowest. Research to predict price elasticity could include surveys of current and potential riders to determine their willingness and ability to pay for paratransit service. UTA could also launch a pilot to test out fare changes and assess the impact on demand and costs to UTA based on the results of the pilot.

If UTA introduces fare changes to its paratransit service, the agency should also consider a marketing campaign to ensure that current and potential riders are aware of the proposed changes. Successful marketing and rider education would increase the likelihood that riders shift their trips from peak times to off-peak times to save money on rides.

In implementing potential fare changes, UTA should also consider whether fare changes are equitable for its riders. The impact of fare changes on riders differs depending on riders' socioeconomic status, so any fare changes should be assessed to ensure that riders are still receiving equitable paratransit service.

9.6 Expanding Eligibility Centers: Implementation Considerations

Prior to introducing additional eligibility centers to enhance the paratransit eligibility process, UTA should verify the addresses of existing riders to ensure that additional facilities are introduced in areas where they are most needed and where they will have the greatest impact on improving the eligibility and mobility device certification process for riders and applicants. The agency should also further assess the capital costs of adding an additional full-scale mobility center, especially if additional property needs to be purchased.

Any additional eligibility centers or mobility device certification centers should ensure that the process of determining rider eligibility remains consistent across riders and facilities, regardless of the location in which eligibility is determined. This is critical to ensure that the process of determining paratransit rider eligibility remains equitable for all riders.

9.7 Rider App and Portal: Implementation Considerations

As UTA is currently in the process of introducing a rider app and/or web portal for ride booking, the agency should ensure that all booking platforms align with ADA requirements, which are generally agnostic in terms of the actual booking method; ADA requirements state that ADA paratransit reservations can be taken by transit agency staff or via mechanical means, such as voicemail, email, or online booking platform.

Based on the Paratransit Forward Study's community engagement findings, current and potential UTA riders and stakeholders would support the introduction of a rider app and/or web portal for passengers to book rides on paratransit service. For successful implementation, UTA must ensure that riders are informed that a self-service virtual booking platform is being introduced and educated on how to use the system. Any training materials and onboarding on how to use the paratransit services should include information on the new platform. Outreach and education should also be provided to caregivers of riders. As riders are accustomed to booking rides exclusively on the phone, maintaining this option so riders can book rides either by calling a dispatcher or by booking through the rider app and/or web portal is critical both to ensure that the process of booking rides is accessible for all riders and to provide continuity in current processes for existing riders.

Transit agencies have successfully implemented community-driven training and incentive-based strategies to encourage self-service booking adoption while maintaining accessibility for riders who prefer traditional methods. The Southeast Area Transit District (SEAT) partnered with disability service agencies and senior centers to train clients on self-service booking, extending outreach without significant costs through peer-supported learning. Similarly, DART promoted booking through their app by offering extended reservation windows as an incentive for riders to switch from phone-based booking.

9.8 Final Considerations

In conclusion, implementing the TNC integration and coverage expansion alternatives will require careful planning, coordination, and ongoing monitoring to ensure success. Both alternatives offer significant opportunities to enhance UTA's paratransit services, but they also present challenges that must be addressed through thoughtful implementation strategies. For the TNC integration, ensuring accessibility, defining clear contracts, and providing comprehensive driver training will be key to maintaining service quality. For the coverage expansion, flexibility in fare structures and fleet management, along with effective marketing and rider education, will be critical to achieving long-term sustainability. Similarly, adopting a commingling strategy — integrating UTA's paratransit with its on-demand services — presents a compelling opportunity to reduce operational costs and improve resource utilization. However, this approach will also require careful management to maintain ADA compliance, optimize vehicle and driver deployment, and ensure seamless service delivery for all riders.

A critical component of any service transition is educating and supporting riders through the change. Successfully integrating any of the alternatives discussed will require structured rider education and outreach efforts. While exact costs for these programs can vary, key expenses typically include developing instructional materials, training dispatchers to assist with self-service adoption, hosting community workshops, and maintaining ongoing customer support. Investing in proactive rider education will help mitigate resistance, ensure equitable access, and improve adoption rates, ultimately leading to long-term cost savings and operational efficiency.

Appendix

Ramp-Up Period in Demand

To model gradual increase in demand, the team applies the Logistic Growth model, also known as the S-curve method. The Logistic Growth model is defined as:

$$N(t) = \frac{K}{1 + e^{-r(t-t_0)}}$$

Where:

- $N(t)$ is the number of users or demand at time t
- k is the carrying capacity, or the maximum number of users the system can support
- r is the growth rate
- t is the time (in months)
- t_0 is the inflection point, the time at which the growth rate is the highest

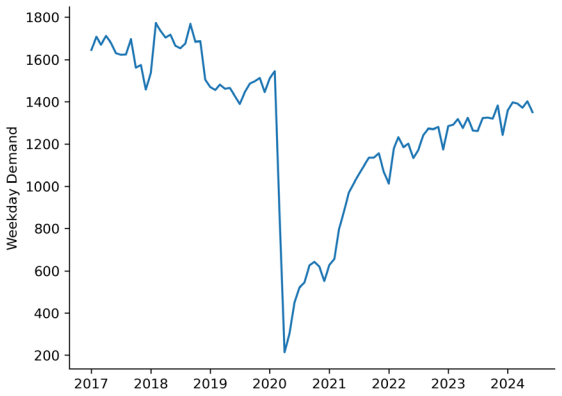


Figure 29 – Weekday Demand Data (2017-2024): The figure illustrates weekday paratransit demand from 2017 to 2024. A clear and significant decline in ridership is observed starting in early 2020 due to the onset of the COVID-19 pandemic. The data reflects the challenges faced during the pandemic, with demand sharply dropping and gradually recovering in the subsequent years.

To estimate these parameters, we use weekday ridership data from 2017-2022 as shown in Figure 29 available on the UTA Open Data Portal. Fitting a growth model to the data presents challenges due to the COVID-19 pandemic, which caused significant disruptions in ridership starting in early 2020. As a result, the team focused on weekday ridership data from 2021 onwards to obtain a more realistic estimate for both the growth rate (r) and the inflection point (t_0).

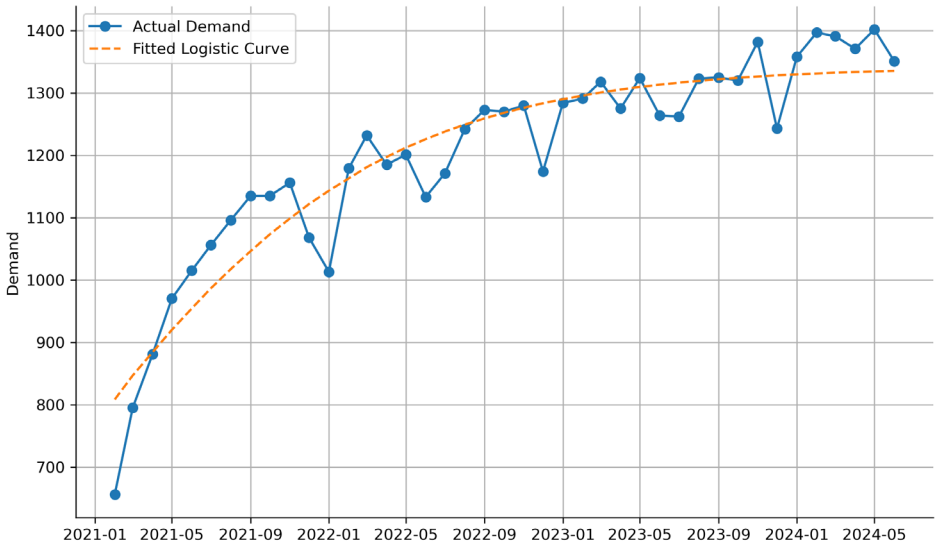


Figure 30 – Weekday Demand Data (Post-2021) With Fitted Logistic Growth Model and Inflection Point: The figure shows the weekday demand data from 2021 onward, alongside the fitted Logistic Growth model used to estimate future demand. The model captures the gradual increase in ridership as services recover, with the inflection point (approximately 3.8 years after January 2021) marking the period of fastest growth. The fitted curve provides a strong approximation for long-term demand trends, helping to project future customer adoption rates as coverage expands. The model's accuracy is validated by a low RMSE value, indicating a good fit.

While the growth rate r is derived from weekday ridership data (not individual customers), it reasonable to assume that, if each customer continues to make a similar number of trips, this growth rate can be directly translated to the overall demand without significant adjustments. By fitting the model to the weekday demand data (with a Root Mean Square Error, RMSE, of 58), the team obtains the following estimates: $K = 1342.5$, $r = 0.12$ $t_0 = 46$ months or roughly 3.8 years after January 2021, as shown in Figure 30. This indicates that the growth rate stabilizes at 0.12, with the inflection point occurring at 46 months — around the end of 2024 — when the growth is expected to be the fastest.

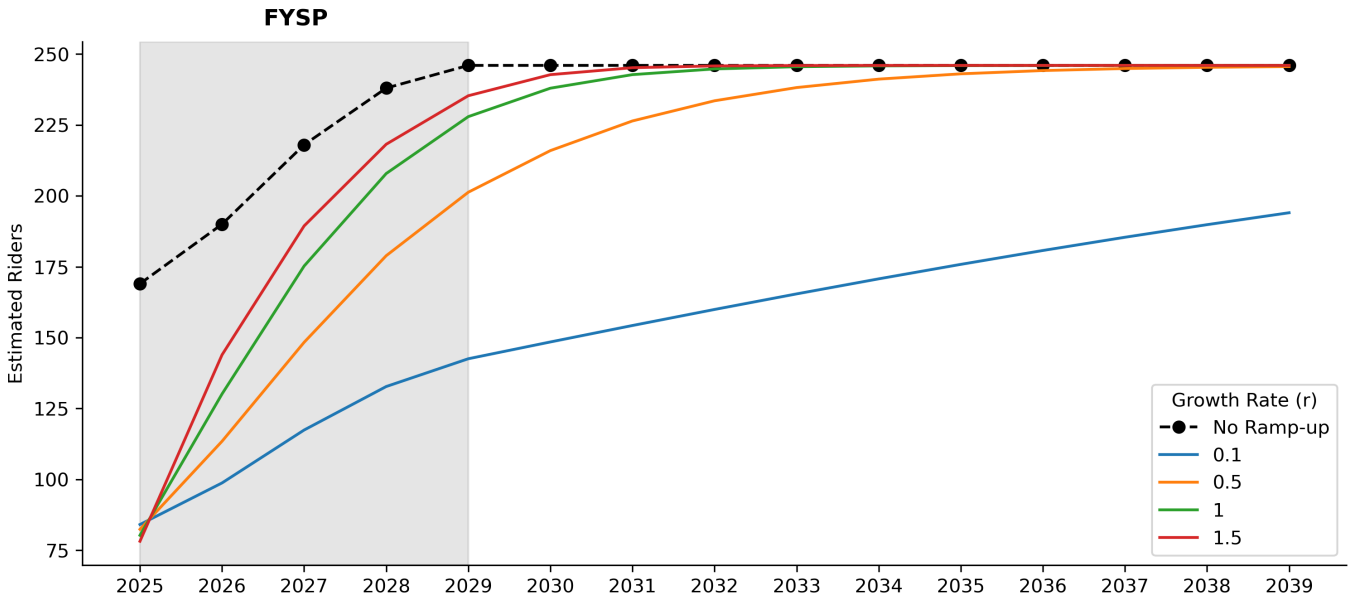


Figure 31 – Gradual Adoption of Paratransit Demand for Different Growth Rates With Fixed t_0: The figure illustrates the gradual adoption of paratransit services for different growth rates, while keeping the inflection point t_0 fixed at 3.8 years. The curves represent various growth scenarios, demonstrating how demand evolves over time. The orange curve (growth rate = 0.1) shows a slower adoption rate, with 60% of customers reached by 2029. In contrast, the green curve (growth rate = 1) represents faster adoption, with full customer capacity reached by 2032.

To provide an example of how the ramp-up process works, the team simulated the cumulative number of customers for the expanded FYSP region using the estimated $t_0 = 3.8$ years. The Figure 31 illustrates the gradual ramp-up for different growth rates. At a growth rate of 0.1 (orange curve), the total number of customers at the end of 2029 (end of FYSP) is around 142, representing about 60% of the expected maximum. As the growth rate increases, the initial ramp-up becomes faster and converges more quickly. For instance, with a growth rate of 1 (green curve), the total number of customers is reached only by 2032. In all scenarios, the highest growth rate occurs at the inflection point of approximately 3.8 years, around the end of 2028. This gradual adoption curve is crucial for understanding the phased impact of expanding service coverage, ensuring that the system is prepared to handle increasing demand without being overwhelmed during the initial years.

To demonstrate the ramp-up process, the visualizations above exclude the 1% annual growth rate assumption for customers in the expanded regions. However, in the actual analysis, this growth rate is applied to both the FYSP regions and the overall premium coverage, providing a more realistic projection of demand.

Cost Savings from Transferring Paratransit Trips to UTA On Demand

Cost estimates were calculated using the average cost per ride for UTA's paratransit service and UTA On Demand services to determine the potential savings of transferring paratransit trips to the UTA On Demand service. The average cost per trip for paratransit is $74, compared to $19 to $22 per trip for UTA On Demand, depending on the service zone. For this study, an adjusted average cost of $22 per trip for UTA On Demand was used to account for estimated training costs. Shifting trips from paratransit to UTA On Demand is expected to generate substantial savings, with an average of approximately $52 saved per trip. For example, transferring 10,000 paratransit rides — around 3% of annual trips — to IMZ service could lead to significant cost reductions, as shown in Figure 32.

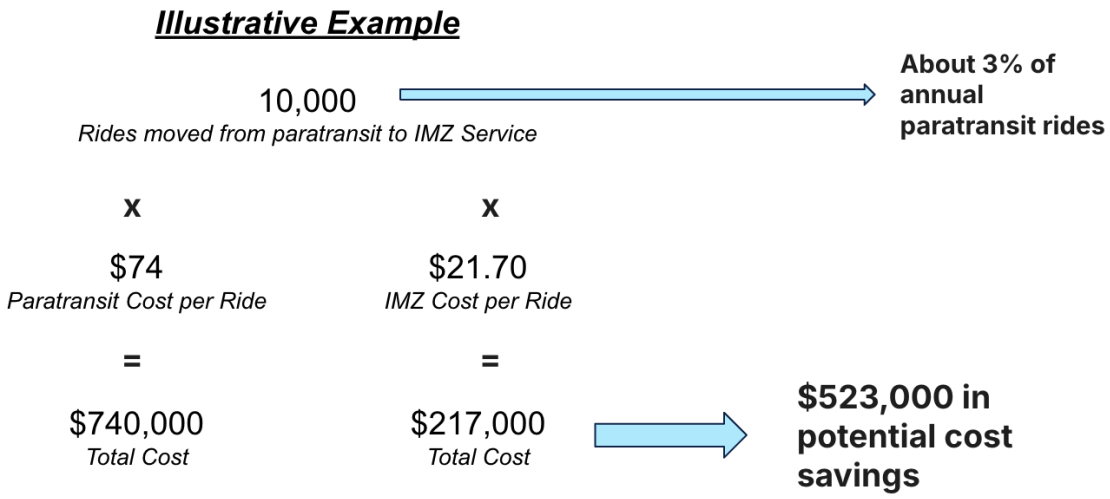


Figure 32 – Illustrative Example of UTA Cost Savings: This figure provides an example of potential cost savings by transferring paratransit rides to IMZ Service. It shows a comparison between the cost per ride for paratransit service and IMZ service for a hypothetical scenario of 10,000 rides – about 3% of annual paratransit rides. The results suggest that transferring these rides from paratransit to IMZ service results in significant cost savings.

Stakeholder and User Interview Summary

Paratransit Forward

Memorandum

To: Matt Gray, *Utah Transit Authority*

From: Cathal O'Gorman, Gal Kramer *&* Nicky Althoff, *Via Strategies*
Tim Sullivan & Zeke Peters, *Township + Range*

Date: February 12, 2024

Subject: Stakeholder and User Interview Summary

Executive Summary

The Paratransit Forward Study was commissioned by the Utah Transit Authority (UTA) to assess UTA's current paratransit service and gain a further understanding of the gaps in current service to improve overall customer experience. The study will ensure that UTA's paratransit services align with the Americans with Disabilities Act (ADA) standards, fostering a more inclusive and equitable transportation system, but will also aim to identify opportunities for improvement that can enhance accessibility, sustainability, and overall service quality. As part of the study's community engagement efforts, the project team undertook interviews of stakeholders, users, and potential users of the paratransit service.

The team interviewed 16 stakeholder organizations and agencies. These included activity centers, service providers, advocacy groups, and government agencies. The stakeholders are located throughout the Wasatch Front and serve urban, suburban, and rural areas. They serve a wide range of disabilities and demographics.

The key lessons from the stakeholder interviews were:

1) UTA Paratransit provides an essential service and fills service gaps that other organizations can't provide for. Interviewees highlighted the following:
    - Paratransit generally works well.
    - Drivers are good and well-liked.
    - Some organizations like to complement Paratransit with their own transportation services.
    - Some organizations can't supply all of the transportation its clients need and rely on Paratransit as a supplement.
    - Stakeholders believe that paratransit is an important part of their clients developing independence.
2) Stakeholders cite a wide range of potential areas of improvement for Paratransit service, depending on their roles and perspectives. Interviewees highlighted the following:
    - Stakeholders and users experience general challenges around the current strict geographic boundary of UTA paratransit.
    - The eligibility process is found to be onerous by some.
    - The Mobility Center in Murray is far and difficult to get to for those in the northern or southern Wasatch Front, and there is a desire for additional locations to apply/test for paratransit eligibility.
    - The cost of Paratransit is an obstacle, especially for those without Division of Services for People with Disabilities (DSPD) financial assistance.
    - Long waiting times, overly strict rules on timing for passengers arriving for rides, and long travel times are regular challenges for customers.
3) Specific characteristics of cohorts served by Paratransit present challenges and opportunities. In general, there was less commonality among the themes of these comments, but interviewees highlighted the following:
    - There is a desire for more compassionate communication with people with disabilities.
    - One bad experience can be indelible for some Paratransit clients.
    - Individuals with some conditions (such as fetal alcohol syndrome) are left with few options for public transit, as they struggle to comfortably use fixed-route transit, but do not qualify for Paratransit.
    - The deafblind community in particular faces challenges in knowing when Paratransit vehicles arrive.
    - Technology could help schedule rides.

4) Some stakeholders would like to work more closely with UTA and create partnerships to better serve their clients. Interviewees highlighted the following:
    - Most stakeholders have a good relationship with UTA and would like to continue their partnership with the authority.
    - Some stakeholders have tried to advocate for changes to fixed routes and UTA Paratransit Service in the past.
    - Many of the stakeholders have clients that do not know Paratransit or other UTA services exist.
    - Stakeholders would like to create more partnerships for training purposes.

The team interviewed 30 Paratransit users/potential users. These interviewees included both active users of the service as well as people who might qualify but do not use Paratransit. They spanned a wide range of ages and geographic areas within UTA's service area, and had a range of disabilities.

The key lessons from the user interviews were:

1) Users report positive staff and driver interactions. Interviewees highlighted the following:
    - The service has good drivers.
    - UTA staff are helpful and nice.
    - The eligibility process is smooth and understandable.
2) Paratransit is inflexible for many due to 24-hour scheduling requirements and limited geographic coverage area. More specifically, interviewees highlighted the following:
    - The service area is limited and riders would like to access areas not currently covered by the service.
    - Riders would like to schedule less than 24 hours in advance.
    - The current service hours are not long enough for the needs of riders.
3) Most users and caregivers would like more app-supported and other digital technologies as part of Paratransit services. Interviewees highlighted the following:
    - Riders and caregivers want to be able to track Paratransit vehicles, see schedules and book rides more easily.
    - Some are worried about the current set-up for people that are non-verbal or who have developmental disabilities.
4) The 30-minute pick-up window, the 5-minute pick-up call, and long travel times were frequently reported as challenges. Interviewees highlighted the following:

- Long routes make Paratransit unreliable, even for those with pre-scheduled ride subscriptions.
- The 5-minute pick-up call is unreliable and inconsistent, and the ready window is too long.

Introduction and Background

This report summarizes the Stakeholder and User Interviews conducted for the Paratransit Forward study. The report provides a brief background on the interviews and an overview of the discussions before providing key conclusions reached from the interviews.

UTA, in partnership with the University of Utah, Via Strategies, and Township + Range, is studying UTA Paratransit Service to assess and improve the customer experience. Funded by an Areas of Persistent Poverty Grant from the Federal Transit Administration (awarded to projects that assist areas that had poverty rates of 20 percent or higher during the last 30-year period), the study is focusing on low-income areas, although recommendations may result in improvements across the entirety of UTA's service. The study will determine how UTA can improve the scheduling process, transition to zero-emission vehicles, and make operations more efficient.

Community and stakeholder outreach is an important part of the study, and as a first step for this outreach, the team conducted a survey of Paratransit users. To obtain deeper and broader input and understanding, the team also undertook a series of interviews of organizations and community leaders as well as current and potential Paratransit customers.

These interviews are divided into two separate tasks – Stakeholder Interviews and User Interviews. Each is described and summarized below.

Stakeholder Interviews

Goals

With the Stakeholder Interviews, the project team sought to meet with a series of organizations with knowledge of the Paratransit system. These organizations have clients and constituents who do and do not use the system and speak from a variety of vantage points – as service providers, advocates, governmental organizations, and partners.

The primary goal of these interviews was to gain a nuanced understanding of the Paratransit system and use of it across different types of customers and stakeholders. In addition, stakeholders helped connect the study team to potential interviewees for User Interviews and assisted with dissemination of the project survey.

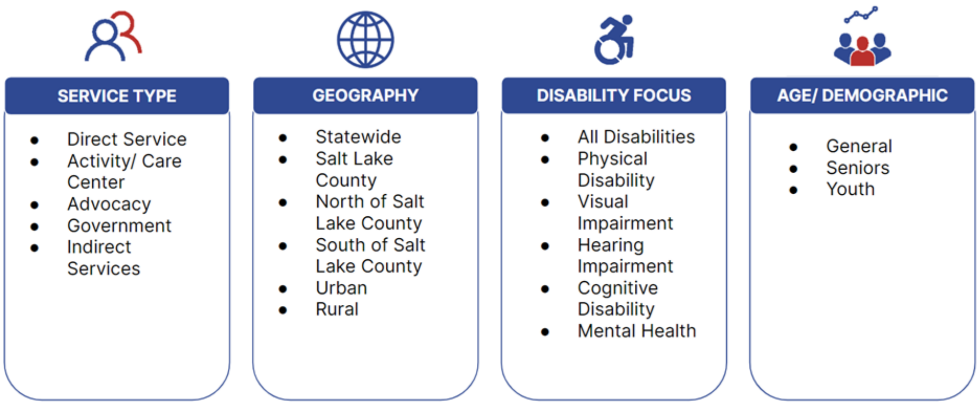
Overview

The team conducted 16 stakeholder interviews. These interviews were conducted between October and December 2023. The table below lists each organization interviewed and the organization type.

Agency	Service Type
Work Activity Center (WAC)	Private Non-Profit/Individuals with Disabilities
Utah Office Of Rehabilitation	State Government Office/ People with Disabilities/ Employment Training
Ability First	Independent Living Center/ Activity Center/ People with Disabilities
Roads to Independence	Independent Living Center/ Activity Center/ People with Disabilities
Suzy's Senior Companion Services	Private, non-profit organization/ Older Adults/ People with Disabilities
Chrysalis	Supported Living Services/ Intellectual Disabilities
Sanderson Center for the Deaf and Hard of Hearing	State Government Office/ Deaf and Hard-of-Hearing
TURN	Private, non-profit/ People with Intellectual Disabilities/ Residential Services/ Activity Center/ Employment Services
Utah Developmental Disability Council	State Government/Individuals with Disabilities
Columbus Community Center	Private Non-Profit/Individuals with Disabilities
Olympus Case Management	Private Non-Profit/ Case Management
Utah Council for the Blind	Private Non-Profit/ Visual Impairment

Assist Inc. Design Center	Private Non-Profit/Individuals with Disabilities
Utah Parent Center	Private, non-profit/ Children with Disabilities
Salt Lake County Aging and Adult	County Government Office/ Older Adults
Services for the Blind and Visually Impaired (DBVI)	State Government Office/ Visual Impairment
Utah Developmental Disability Council	State Government/Individuals with Disabilities

The chart below shows the aspects of organizational service type, geography, disability focus, and demographics that the interviewees included. This diversity provided a range of perspectives on Paratransit, and indeed, these differences played into stakeholders' opinions on Paratransit and priorities for improvements.



The team held the meetings both in-person and virtually, depending on what was convenient for the interviewees and for the overall scheduling. For several of the interviews, the stakeholders were able to provide the team with a tour of their facilities, which added additional insights.

The project team and the stakeholders discussed a range of topics, including:

- Transportation needs of the organization's clients/constituents
- Role of Paratransit in the organization's and clients'/constituents' needs
- Eligibility process
- Scheduling
- Ride experience
- Communication with UTA
- One change that would make Paratransit better

Results - Overall Takeaways

This section provides an overview of the conclusions of all the interviews taken together. These are organized into four broad takeaways:

1) UTA Paratransit provides an essential service and fills service gaps that other organizations can't provide for.
2) Stakeholders cite a wide range of potential areas of improvement for UTA Paratransit Service, depending on their role and perspective.
3) Specific characteristics of cohorts served by Paratransit present challenges and opportunities.
4) Some stakeholders would like to work more closely with UTA and create partnerships to better serve their clients.

Each of these takeaways is explored in terms of the specific insights that contribute to it, as well as the number of stakeholders whose interviews included these observations and opinions—telling us the most popular themes.

Graphically, this is shown in a way to convey the types and magnitude of themes:

- Blue dots: themes that are primarily informational
- Green dots: themes that praise UTA Paratransit
- Red dots: themes that are critical of UTA Paratransit
- Yellow dots: themes that express ideas for improvement

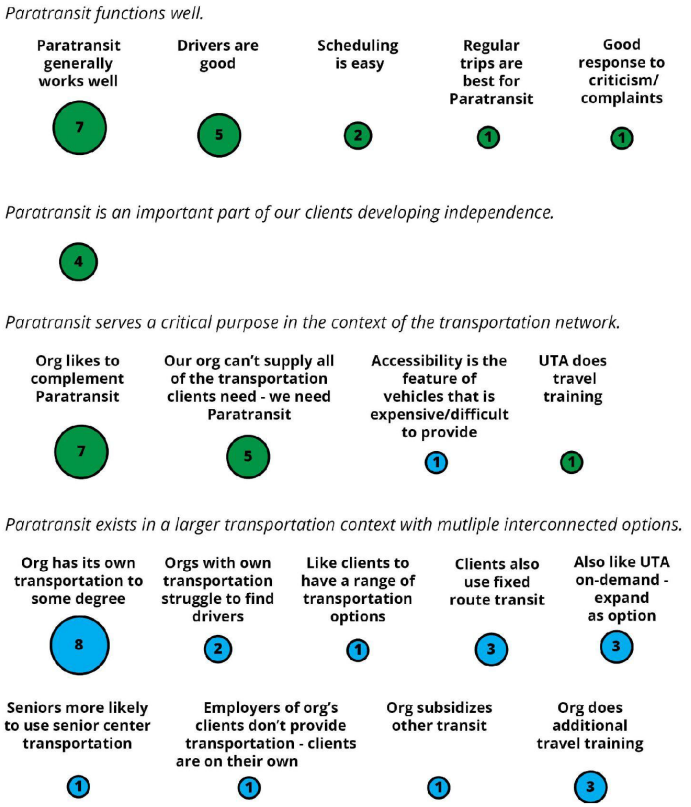
The numbers and sizes of dots correspond to how many of the 16 stakeholders made the comment, so a "4" means that four of the 16 stakeholders made that comment. The highest frequency theme was stated by 9 out of the 16 stakeholders. There were many themes that were unique to one stakeholder.

1. UTA Paratransit provides an essential service and fills service gaps that other organizations can't provide for

Many stakeholders had positive feedback for UTA Paratransit. The majority of interviewees noted that Paratransit works well in their view—the drivers are competent and valued, the service is dependable, and the staff is responsive.

Additionally, many organizations, especially those that provide their own transportation, say that they and their clients/constituents need the service that Paratransit provides, and that they actively try to complement Paratransit service with their own service.

It is also important to recognize the larger transportation context in which Paratransit functions, including stakeholder-provided transit, fixed-route transit, and on-demand transit. Many organizations serving Paratransit riders noted that their clients often used both fixed-route transit and Paratransit, especially when their eligibility is conditional. This context is critical for making changes to best serve the interest of Paratransit users.

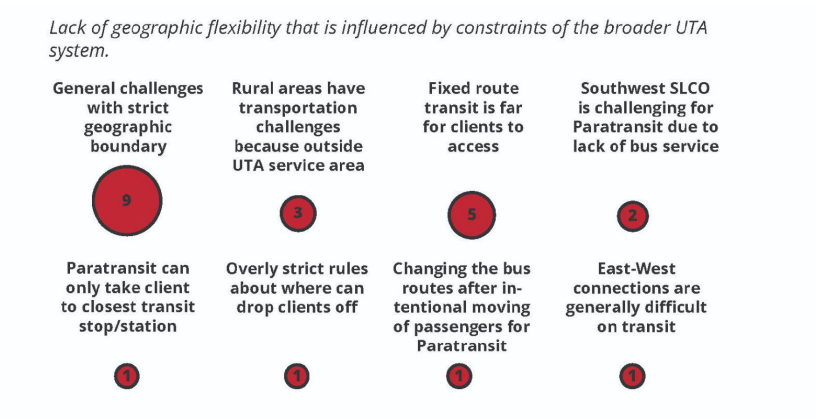


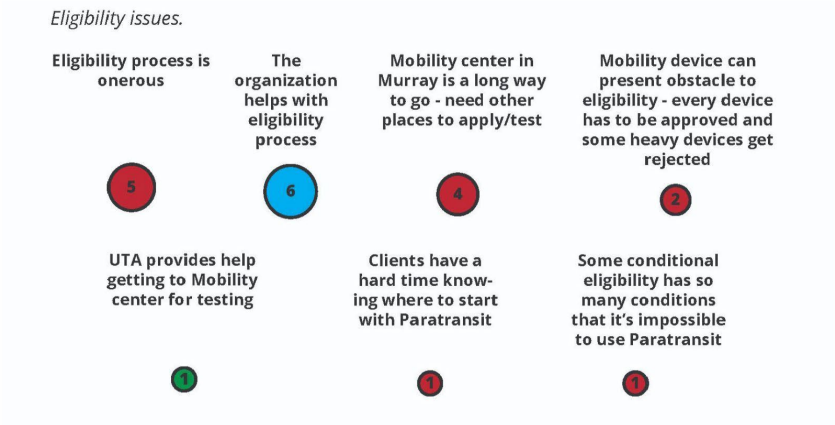
2. Stakeholders cite a wide range of potential areas of improvement for UTA Paratransit Service, depending on their role and perspective.

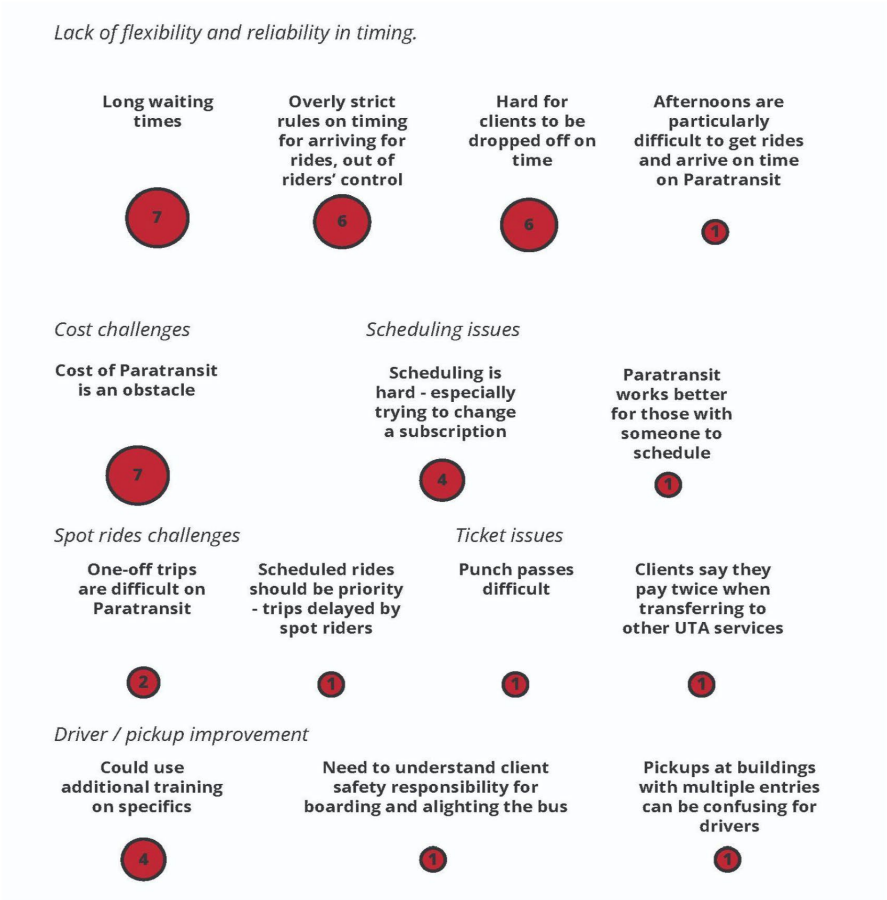
Stakeholders identified a wide range of what, in their view, were shortcomings of UTA Paratransit. One of the reasons that critiques varied so widely was that many of the critiques were specific to the stakeholder organization; for example, organizations in the northern and southern Wasatch Front are more critical of the eligibility process, while organizations representing clients without Division of Services for People with Disabilities (DSPD) financial assistance identified cost of service as a barrier. Organizations serving the deafblind community focused on challenges such as knowing when a vehicle arrives.

There were a handful of areas of improvement identified by many stakeholders, such as the strict geographic services area that is limited to within ¾ mile of UTA routes, long waiting and ride times, and the cost of the service.

There were also many unique insights given by stakeholders, such as the desire for a more individualized experience for people with different disabilities. Others noted that afternoons often have less efficient Paratransit trips. Stakeholders also revealed the differences between regular riders and "spot" riders, different experiences in where Paratransit can drop passengers off, and the details of how passengers board the vehicles.



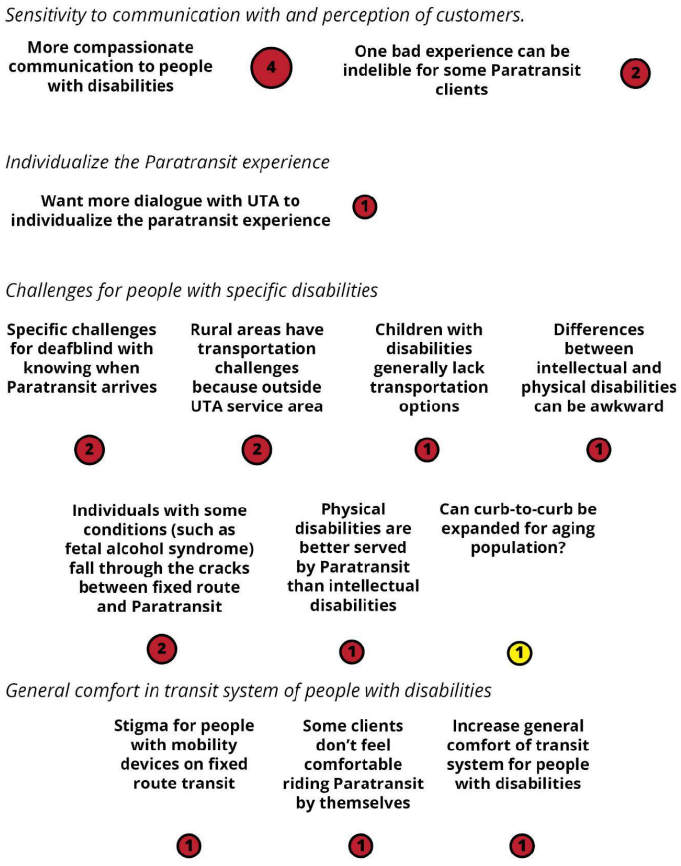

Eligibility issues.
Eligibility process is onerous
5
The organization helps with eligibility process
6
Mobility center in Murray is a long way to go - need other places to apply/test
4
Mobility device can present obstacle to eligibility - every device has to be approved and some heavy devices get rejected
2
UTA provides help getting to Mobility center for testing
1
Clients have a hard time know-ing where to start with Paratransit
1
Some conditional eligibility has so many conditions that it's impossible to use Paratransit
1


Lack of flexibility and reliability in timing.
Long waiting times
7
Overly strict rules on timing for arriving for rides, out of riders' control
6
Hard for clients to be dropped off on time
6
Afternoons are particularly difficult to get rides and arrive on time on Paratransit
1
Cost challenges
Cost of Paratransit is an obstacle
7
Scheduling issues
Scheduling is hard - especially trying to change a subscription
4
Paratransit works better for those with someone to schedule
1
Spot rides challenges
One-off trips are difficult on Paratransit
2
Scheduled rides should be priority - trips delayed by spot riders
1
Ticket issues
Punch passes difficult
1
Clients say they pay twice when transferring to other UTA services
1
Driver / pickup improvement
Could use additional training on specifics
4
Need to understand client safety responsibility for boarding and alighting the bus
1
Pickups at buildings with multiple entries can be confusing for drivers
1

3. Specific characteristics of cohorts served by Paratransit present challenges and opportunities.

Stakeholders made observations about specific characteristics of their clients and constituents that are relevant to Paratransit—both for specific disabilities and for people with disabilities in general, including people in rural areas, children with disabilities, and people with disabilities who are not eligible for paratransit but struggle to use fixed-route.

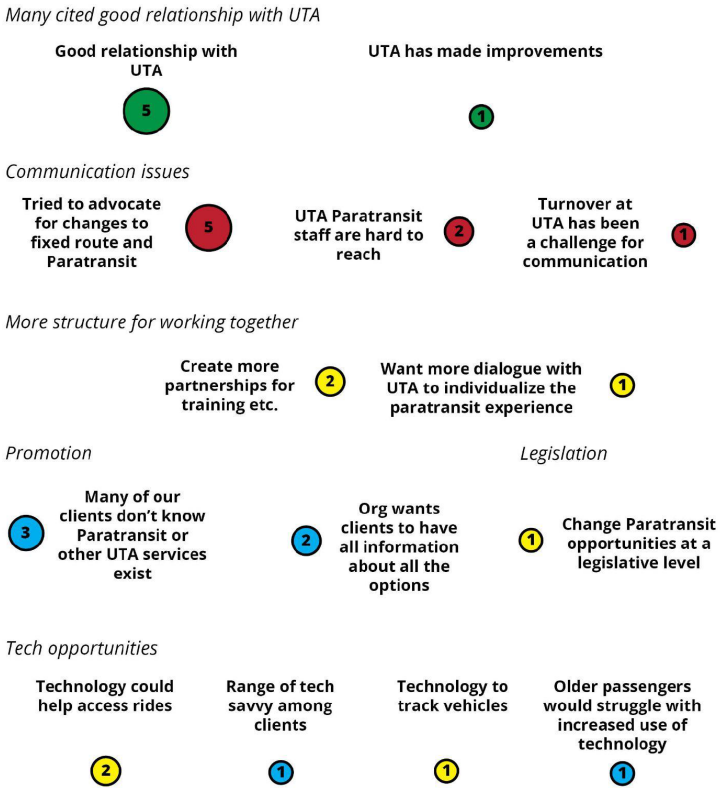
Two salient overall points made by multiple stakeholders were a request for compassionate communication with people with disabilities and the observation that one bad experience on Paratransit can take a very long time for a rider to recover from—for example, altercations with other riders, injuries, or disciplinary actions may all serve to disincline riders from using Paratransit.



4. Some stakeholders would like to work more closely with UTA and create partnerships to better serve their clients.

Many stakeholders described close relationships with UTA, the Committee on Accessible Transportation (CAT), and the Paratransit staff in general. They differed in how effective these relationships have been in allowing the stakeholder organization to fix issues or advocate for change. Some stakeholders described day-to-day communication challenges with UTA Paratransit staff.

The opportunities for improvement in partnership with UTA identified by stakeholders included more education/promotion, more technology, and more dialogue.



Results - Summaries of Each Interview

The following is a description of each stakeholder and a summary of the key points from the team's interview with that stakeholder.

Columbus Community Center

Columbus Community Center is a non-profit based in South Salt Lake City that provides a range of services for people with disabilities. These include job coaching, residential support, work programs, and day programs. The organization serves around 100 to 200 people. The Center has its own transportation but also needs Paratransit for its clients and describes a longtime good relationship with UTA. The Center's clients' transportation needs include getting them to/from the Center itself and to/from events and activities.

Key themes:

- Challenges with limited geographical service area
- Long waiting times
- Hard for clients to be dropped off on time
- Generally, no issues with drivers
- Drivers could use additional training on specifics—such as clarifying shared responsibility with Columbus for getting clients on-board the vehicle
- More compassionate communication with people with disabilities is often needed
- Scheduling is hard—especially when trying to change a subscription schedule
- UTA Paratransit staff can be difficult to reach
- One bad experience can be indelible for some Paratransit clients
- One-off trips are difficult for Paratransit
- Clients have a hard time knowing where to start with the Paratransit system
- Technology to track vehicles would be useful

Work Activity Center

Work Activity Center is a non-profit based in West Valley City that provides a range of services for people with disabilities, including four residential sites and day programs. The Center has its own transportation. The Center's clients' transportation needs include getting them to the Center itself and to events/activities.

Key themes:

- Work Activity Center can't supply all of the transportation for their clients; they rely on UTA Paratransit. They like to complement Paratransit with their own services.
- Paratransit generally works well
- Generally, no issues with drivers
- The organization helps clients with eligibility
- The eligibility process is onerous
- UTA Paratransit staff can be difficult to reach
- The Work Activity Center struggles to find drivers for their own transportation services
- Making schedule changes on subscription rides is time-consuming

Ability First

Ability First is a Center for Independent Living in Provo. It is one of six Centers for Independent Living in Utah that each covers a specific area. Ability First covers Utah, Wasatch, Juab, and Sanpete Counties (with a satellite office in Sanpete). It is an activity center and provides a range of services. The organization provides transportation for doctor appointments, activities, and other trips. They serve clients with any type of disability of any age.

Key themes:

- Paratransit generally works well
- Ability First can't supply all of the transportation; they rely on UTA Paratransit, as it is an important part of clients gaining independence. Ability First prefers for their service to complement Paratransit
- The cost of Paratransit is an obstacle for Ability First clients. For example, if a client has several doctor appointments per week, it can become very costly to use Paratransit
- Strict rules on arriving for rides are a challenge, and it's difficult that this is often out of their control
- The organization helps clients with eligibility
- Ability First reported having a good working relationship with UTA
- Fixed route transit is far for clients to access, the closest stop to Ability First is a mile away
- Have tried to advocate for changes
- The Mobility Center in Murray is far and difficult to get to, and there is a desire for other places to apply/test for paratransit eligibility

- They acknowledged UTA's travel training, but they do additional travel training in-house
- Mobility devices can present obstacles to eligibility—every device has to be approved and some heavy devices get rejected
- UTA provides help getting to the Mobility Center for the eligibility process
- Scheduling is easy
- Technology such as an app could help some clients schedule rides, but not all clients would necessarily have access to this type of technology
- Ability First prioritizes offering a range of transportation options to its clients
- Accessibility is the feature of vehicles that is expensive/difficult to provide

Roads to Independence

Roads to Independence is a Center for Independent Living in Ogden. Like Ability First, it is one of six Centers for Independent Living in Utah that each covers a specific area. Roads to Independence covers Weber, Morgan, and Davis Counties. It is an activity center and provides a range of services such as nursing home transitions, traumatic brain injury program, youth programs, a community integration program, and an employment center. The organization provides transportation for a variety of trips. They serve clients with any type of disability at any age.

Key themes:

- Challenges with the strict geographical boundary of Paratransit
- Long waiting times
- The cost of Paratransit is an obstacle
- Hard for clients to be dropped off on time
- The organization helps clients with eligibility
- They like their service to complement Paratransit services
- Tried to advocate for changes, for example, helped get FrontRunner designated as a route for Paratransit area designation so now Paratransit has to service the area within ¾ mile of FrontRunner
- The organization reported having a good working relationship with UTA
- They can't supply all of the transportation clients need and rely on UTA Paratransit to fill in the gaps.
- The Mobility Center in Murray is far and difficult to get to, and there is a desire for other places to apply/test for paratransit eligibility
- Mobility devices can present obstacles to eligibility—every device has to be approved and some heavy devices get rejected
- Scheduling is challenging—especially when trying to change a subscription schedule
- Paratransit can only take clients to the closest transit stop/station

- Overly strict rules about where they can drop clients off
- Stigma for people with mobility devices on fixed-route transit
- Some conditional eligibility has so many conditions that it seems impossible to use Paratransit
- Paratransit works better for those with someone to assist with scheduling
- Afternoons are particularly difficult to get rides and arrive on-time with Paratransit
- Seniors are more likely to use senior center transportation

TURN

TURN is a Salt Lake City-based nonprofit that provides services for people with developmental disabilities in many different environments such as residential, day centers, and employment. Its approximately 300 clients live all over Utah. TURN's main job is to support the person in what they want to do. TURN has its own transportation services for a variety of trips.

Key themes:

- Paratransit generally works well
- Challenges with the strict geographical boundary—A lot of people don't live in the areas where Paratransit is available, i.e., Herriman, Bluffdale, south end of Salt Lake Valley
- Long waiting times
- The rides take a long time and need to be scheduled long in advance of when clients need to arrive.
- Drivers do great work—one example is when a client fell into a manhole and the driver pulled him out
- TURN can't supply all of the transportation, they rely on UTA Paratransit, it is an important part of clients gaining independence; they like to complement Paratransit
- Fixed route transit is far for clients to access
- Drivers could use additional training on specifics
- Mobility Center in Murray is a long way to go - need other places to apply/test
- More compassionate communication to people with disabilities is often needed
- Clients also use fixed route transit
- Southwest Salt Lake County is challenging for Paratransit due to the lack of bus service
- Scheduling is easy
- UTA has made improvements and respond well to criticism/complaints

Suzy's Senior Companion Services

Suzy's Senior Companion Services is a non-profit organization that provides a range of services for seniors, veterans, and people with disabilities 18 and older. The organization helps address the need for affordable transportation, especially wheelchair-accessible transportation. It serves the northern part of Utah; Preston, Idaho; and a part of Nevada. The service area includes many rural areas. The organization has 120 employees and 39 vehicles in its fleet.

Key themes:

- Paratransit generally works well
- Challenges with limited geographical service area
- Long waiting times
- Hard for clients to be dropped off on time
- Good relationship with UTA
- Eligibility process is onerous
- The Mobility Center in Murray is far and difficult to get to, and there is a desire for other places to apply/test for paratransit eligibility
- Rural areas have transportation challenges because they are outside UTA service area
- The organization aims for clients to have all necessary information about all the options
- Some clients don't feel comfortable riding Paratransit by themselves
- Older passengers would struggle with increased use of technology

Chrysalis

Chrysalis is a statewide organization that provides support to individuals with intellectual disabilities. It provides two main services: family-based services, which includes foster care for people with intellectual disabilities and supported living; and group homes. Chrysalis provides staffing and support in either service settings, behavioral consultation, job coaching, day services, and mental health services. It provides transportation with eight vehicles to and from activities.

Key themes:

- Chrysalis can't supply all of the transportation, they rely on UTA Paratransit; they like to complement Paratransit with their services.
- Paratransit generally works well

- The strict rules on when a passenger needs to be ready for a ride are a challenge, especially if the rider has had a rough day; for example, an individual who was dealing with a mental episode and barely made it to the pickup location within the arrival time window
- They help clients with going through the eligibility process, e.g., initiating the process, filling out forms, and other aspects
- Drivers are good
- Eligibility process is onerous
- Paratransit is an important part of clients gaining independence

Sanderson Center for the Deaf and Hard of Hearing

The Sanderson Center is a community center under the Utah State Division of Deaf and Hard of Hearing. The main center is located in Taylorsville, with a gym, kitchen, lecture hall, and classrooms. There is a smaller center in St. George. The center provides case management and employment service for 100 - 150 people per month, as well as vocational rehab, education and activity classes, interpreting services and other services. The center does provide some transportation.

Key themes:

- The cost of Paratransit is an obstacle for clients
- Strict rules on ride pickup are a challenge for deafblind - at the Taylorsville center, a deafblind person will wait in the lobby, ask receptionist to notify them once the vehicle arrives but the receptionist can't see the bus arriving and can't let client know; the Sanderson Center asked bus drivers to park closer to entrance so receptionist can see the bus arrive. Many drivers will leave after 5 minutes of the client not arriving at bus stop
- The Sanderson Center helps clients with the eligibility process
- Drivers could use additional training on specifics
- Specific challenges for deafblind with knowing when Paratransit arrives
- General communication of drivers with deafblind is a challenge
- Turnover at UTA has been a challenge for communication

Utah Council of the Blind

The Utah Council of the Blind is a non-profit that covers all of Utah and provides services to people who are blind. The Council provides programs and services for people to be independent in their lives - such as a skills development program, a Braille literacy program, and activities. The Council serves close to 500 people.

Key themes:

- Paratransit generally works well
- Waiting times are lengthy
- The cost of Paratransit is an obstacle
- The eligibility process is onerous
- Paratransit is an important part of clients gaining independence
- They subsidize other transit options
- Pickups at buildings with multiple entries can be confusing for drivers
- People have moved to be within Paratransit service area and then the bus routes changed, putting them outside the boundaries of Paratransit

Utah Division for Blind and Visually Impaired - Blind Center

This interview focused on the deafblind community. The Blind Center serves many deafblind people. Services the center administers include sighted guides, an equipment program, and a training program. For someone to get the services, deafness has to be moderate to severe and vision has to be low vision or fully blind. The interview emphasized that deafblind people have specific needs and challenges with transportation and Paratransit and a desire for UTA, in general, to improve its individualization of service to deafblind people.

Key themes:

- Challenges with limited geographical service area
- The cost of Paratransit is an obstacle
- Strict rules on arriving for rides are a challenge, and it's difficult that this is often out of their control
- The organization helps clients with eligibility
- Tried to advocate for changes
- Want more dialogue with UTA to individualize the Paratransit experience
- Drivers could use additional training on specifics
- There are specific challenges for deafblind with knowing when Paratransit arrives
- General communication of drivers with deafblind is a challenge - one positive example was when one driver came into the building to pick up client, and client "told" them their name with touch and how many stops until their drop off location
- Want more compassionate communication with people with disabilities
- Rural areas have transportation challenges because they are outside UTA service area
- They do additional travel training beyond what is offered by UTA
- Many of their clients don't know Paratransit or other UTA services exist
- They want UTA to create more partnerships for training

Salt Lake County Aging and Adult

Salt Lake County Aging and Adult is a government agency that offers a range of services, including operating 15 senior centers, providing in-home services, and Meals on Wheels. It operates Rides for Wellness, a transportation service that often serves destinations and provides levels of service that Paratransit can't, although Paratransit is also an important source of transportation for the agency's clients. It states that 60 to 70 percent of people needing transport are going to dialysis.

Key themes:

- Challenges with strict geographical boundary
- Cost of Paratransit is obstacle
- Good relationship with UTA
- Fixed route transit is far for clients to access
- The organization appreciates UTA on-demand and wants it to be expanded as an option

Olympus Case Management

Olympus Case Management is a private organization that coordinates the support of people with Utah State Division of Services for People with Disabilities (DSPD) funding—which applies to many Paratransit riders and many of the clients of the stakeholders interviewed by the team. They are one of many such organizations throughout the state. Once a person gets off the DSPD waitlist, they contact a support coordination organization like Olympus to serve as a "middle person" to connect their clients to services and be an advocate for them. This provides support coordinators like Olympus with a close view of their clients' transportation needs and functionality of Paratransit.

Key themes:

- Paratransit works best when passengers have the same drivers and have a consistent schedule and route for their trips
- Long waiting times
- Hard for clients to be dropped off on time
- Rare incidents of inappropriate driver behavior
- If client has behavior or medical issues, challenge when there is no support staff present to help on-off Paratransit vehicle

- School district offers rides if student has severe disability
- Some parents refuse to let their kids use Paratransit because of vulnerabilities

Assist Inc. Design Center

Assist, Inc. is a non-profit architecture firm that often focuses on people with disabilities. The firm seeks to provide people with opportunities for aging in place, accessibility retrofits to homes/businesses, in order to stay in their homes and communities. Most of their clients tend to be lower-income adults and older adults. This stakeholder was able to provide a perspective of an organization not directly using or involved with Paratransit but that serves people with disabilities and aware of a specific perspective on their accessibility needs.

Key themes:

- Fixed route transit is far for clients to access
- Paratransit is an important part of clients gaining independence
- Many of our clients don't know Paratransit or other UTA services exist
- Create more partnerships for training
- Technology could help access rides
- Increase general comfort of transit system for people with disabilities

Utah Parent Center

The Utah Parent Center (UPC) is a non-profit with the mission to help parents help their children, youth and young adults with all disabilities to live productive lives as members of the community. The Center accomplishes its mission by providing accurate information, empathetic peer support, valuable training, and effective advocacy based on the concept of parents helping parents. This stakeholder interview was a focus group of nine parents and UPC staff discussing their experiences with UTA Paratransit. The interview format made the interview a stakeholder/user hybrid interview, given that much of the interview focused on the personal experiences of many of the parents.

Key themes:

- Paratransit generally works well
- Challenges with strict geographical boundary
- Long waiting times
- Drivers are good
- Cost of Paratransit is an obstacle
- Hard for clients to be dropped off on time

- More compassionate communication to people with disabilities is often needed
- Rural areas have transportation challenges because outside UTA service area
- The organization appreciates UTA on-demand and wants it to be expanded as an option
- Scheduling is challenging, including trying to change a subscription schedule
- One bad experience can be indelible for some Paratransit clients
- Individuals with some conditions (such as fetal alcohol syndrome) are left with few options for public transit, as they struggle to comfortably use fixed-route transit, but do not qualify for Paratransit.
- Regularly scheduled rides should be priority - trips delayed by riders on one-off trips
- Can curb-to-curb be expanded for the aging population?
- Families with children with disabilities generally lack options to transport their kids where they need to go
- Differences between intellectual and physical disabilities can be awkward. For example, one focus group member wondered how do riders without intellectual disabilities feel when adults are teasing each other and getting out of line?

Utah Office Of Rehabilitation

The Utah Office of Rehabilitation is a state agency that works with people with all types of disabilities that prevent them from obtaining or maintaining work. The agency offers restorative services to help individuals to overcome functional limitations. Its clients use UTA services; the agency does not provide its own transportation.

Key themes:

- Challenges with the strict geographical boundary
- Long waiting times
- Strict rules on arriving for rides are a challenge, and it's difficult that this is often out of their control
- Hard for clients to be dropped off on time
- Regular trips are best for Paratransit—one-off trips are difficult
- Punch passes are difficult to use
- Clients say they pay twice when transferring to other UTA services
- Employers of their clients don't provide transportation—their clients have to figure out how to get to work on their own
- Southwest Salt Lake County is challenging for Paratransit due to lack of bus service

Utah Developmental Disability Council

The Utah Developmental Disability Council (UDDC) is one of Utah's Americans with Disabilities Act (ADA) organizations. The UDDC seeks to create and use a collective voice and serves as a State government watchdog. Transportation is a big part of the UDDC's work; they work closely with UTA, it is putting together a transportation coalition, transportation is part of its five-year plan, and it is trying to advocate at a legislative level for improvements for people with disabilities.

Key themes:

- Challenges with limited geographical service area
- Strict rules on arriving for rides are a challenge, and it's difficult that this is often out of their control
- Good relationship with UTA—tried to advocate for changes
- Eligibility process is onerous
- Fixed-route transit is far for clients to access
- Many of the UDDC's clients don't know Paratransit or other UTA services exist
- The UDDC wants clients to have all the information about all the options
- Individuals with some conditions (such as fetal alcohol syndrome) are left with few options for public transit, as they struggle to comfortably use fixed-route transit, but do not qualify for Paratransit.
- East-West connections are generally difficult on fixed-route transit
- Physical disabilities are better served by Paratransit than intellectual disabilities
- They want to change Paratransit opportunities at a legislative level

User Interviews

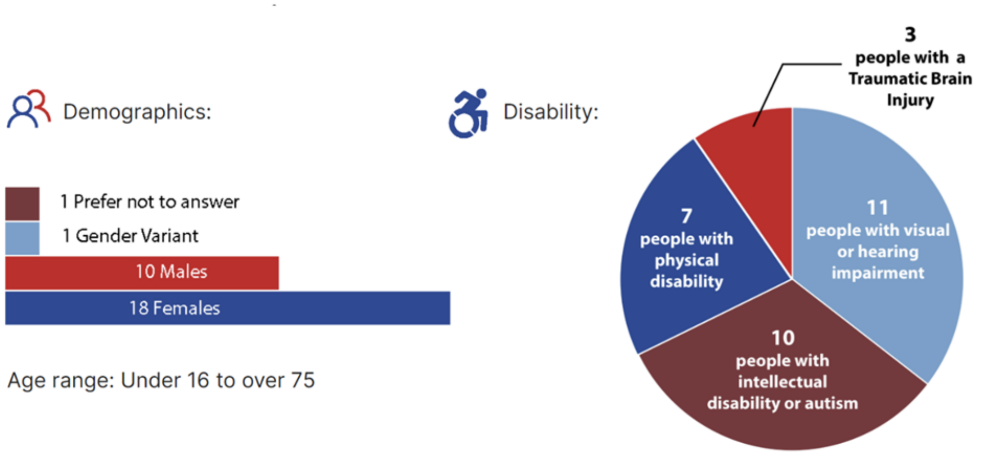
Goals

The user interviews sought to understand the full Paratransit experience from the direct passenger perspective, providing depth to the survey. The team primarily asked questions about the decision to ride Paratransit, the process of obtaining eligibility, scheduling rides, pick-ups, ride experience, and drop-offs. The team met with a diverse group of individuals who either use, are trying to use, or cannot use the Paratransit system.

Overview

Pulling largely from contacts generated through the Paratransit Forward Survey, the project team reached out to 80 users and successfully facilitated 30 interviews. These interviews were either held via video conferencing tools or over the phone. They were conducted in December of 2023.

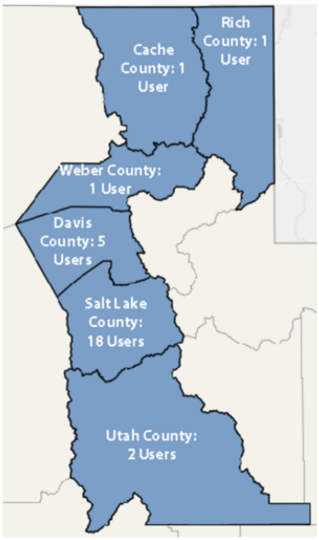
As with the stakeholder interviews, the team sought to speak with a wide variety of users. The interviewees ranged from ages under 16 to over 75. They hailed from a wide range of geographic areas within UTA's service area and had a range of disabilities. Some demographic breakdowns can be found below:



Use of UTA Services:

- 19 Paratransit Users
  - 6 use it regularly
- 11 Non-Paratransit Users

Geography:



The following describes the breakdown of the interviewees' use of Paratransit:

- 12 surveys were taken on behalf of a Paratransit user by a parent/guardian or caregiver.
- 4 people had never used Paratransit due to ineligibility or other service restrictions, while 5 said they no longer use it due to restrictions and reliability issues.
- 4 people interviewed explained they were ineligible for Paratransit, 4 stated they have conditional eligibility, and 9 stated they have unconditional eligibility.
- 11 users reported using or planning to use Paratransit daily, 10 weekly, and 1 rarely.
- 15 users used it for employment, 15 for healthcare, 3 for school/education, and 18 for other social needs.

Interview Topics

The interviews covered a wide range of topics, including:

Travel Behavior and Demographics: Questions on travel behavior pertained to the frequency and types of trips; assistance from mobility aids, service animals, and/or caregivers; ability of Paratransit to reach desired destinations; other transportation apart from Paratransit; and a rider's eligibility category.

Booking: Booking questions focused on the booking process; aspects of booking that work well or don't work well; perspective on the "ready window"; ideas for improvements to the booking process; perspectives on booking using technologies such as apps.

Rides: Questions on rides themselves aimed to learn more about the reliability of vehicle arrival; driver communication; ability to get ready for vehicle; beyond-the-curb service if applicable; boarding process; comfort of vehicles; safety; securing mobility devices; experiences with drivers; impact of weather; ticketing.

Eligibility Process: Questions about the eligibility process focused on the experience of going through the eligibility application and evaluation, the process of getting to the Mobility Center, overall satisfaction with an assigned eligibility category, and the process of renewing eligibility.

Topics specifically for non-Paratransit users: Non-paratransit users were asked specific questions about their current eligibility for UTA Paratransit. If an interviewee was denied eligibility, follow-up questions were asked about the eligibility process. If an interviewee had never applied for UTA Paratransit eligibility, follow-up questions focused on their reasons for not applying.

Summary questions: What are your favorite aspects of UTA's paratransit service? What are the most challenging aspects of UTA's paratransit service? If you could make any change to UTA's paratransit service, what would that change be? Is there anything else you would like us to know about UTA Paratransit Service?

Takeaways

This section provides an overview of the conclusions of all the interviews taken together. These are organized into four broad takeaways:

1) Users report positive staff and driver interactions.
2) Paratransit is inflexible for many due to 24-hour scheduling requirements and the limited coverage area.
3) Most users and caregivers would like more app-supported and other digital technologies as part of UTA Paratransit Service.
4) The 30-minute pick-up window, the 5-minute limit to the driver waiting for the rider, and long travel times have been frequently reported as challenges.

Each of these takeaways is explored in terms of the specific insights that contribute to it, as well as the number of stakeholders whose interviews included these observations and opinions, thus telling us the most popular themes.

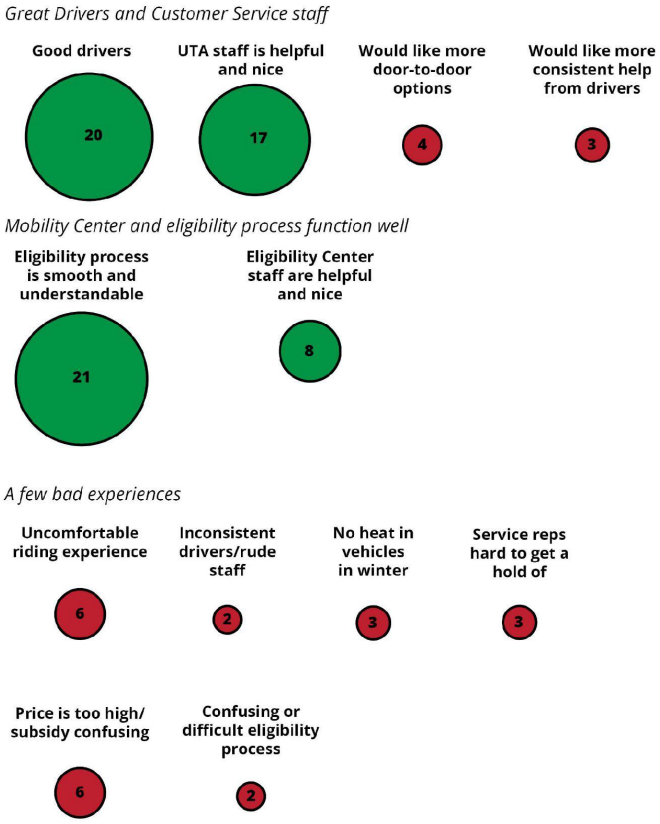
Graphically, this is shown in a way to convey the types and magnitude of themes:

- Blue dots: themes that are primarily informational
- Green dots: themes that complement UTA Paratransit
- Red dots: themes that are critical of UTA Paratransit
- Yellow dots: themes that express ideas for improvement

The numbers and sizes of dots correspond to how many of the 30 interviewees made the comment - so a “4” means that four of the 30 stakeholders made that comment. The highest frequency theme was stated by 21 out of the 30 stakeholders. There were many themes that were unique to one stakeholder.

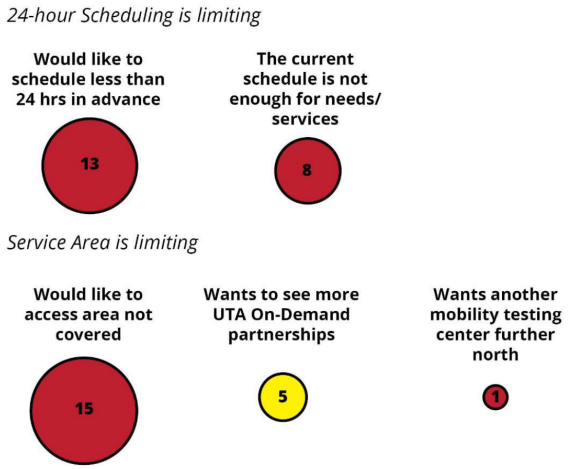
1. Users report positive staff and driver interactions.

Most of the users were able to identify aspects of UTA and Paratransit that they liked and had good experiences with. These positive interactions included staff at all stages of the Paratransit trip, from customer service over the phone to the drivers on different routes. However, many users identified one-off recent experiences where drivers were less helpful or flexible or service representatives over the phone were difficult to reach.



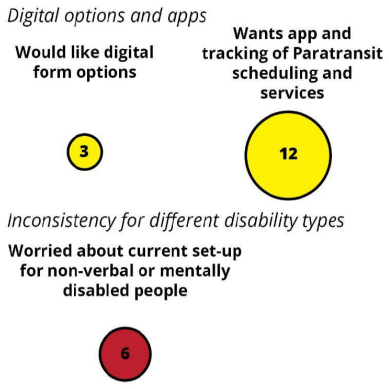
2. Paratransit is inflexible for many due to 24-hour scheduling requirements and coverage area.

Users depicted an overall inflexibility in UTA Paratransit Service, whether it be through scheduling requirements or coverage areas. Throughout the interviews, many pointed out specific coverage gaps outside of Paratransit coverage that contained either their residence or other needed services that prevented them from using Paratransit to access these destinations. This often led to discussions about expanding UTA On-Demand services to enhance and connect these areas not currently served by Paratransit.



3. Most users and caregivers would like more app-supported and other digital technologies as part of Paratransit Services.

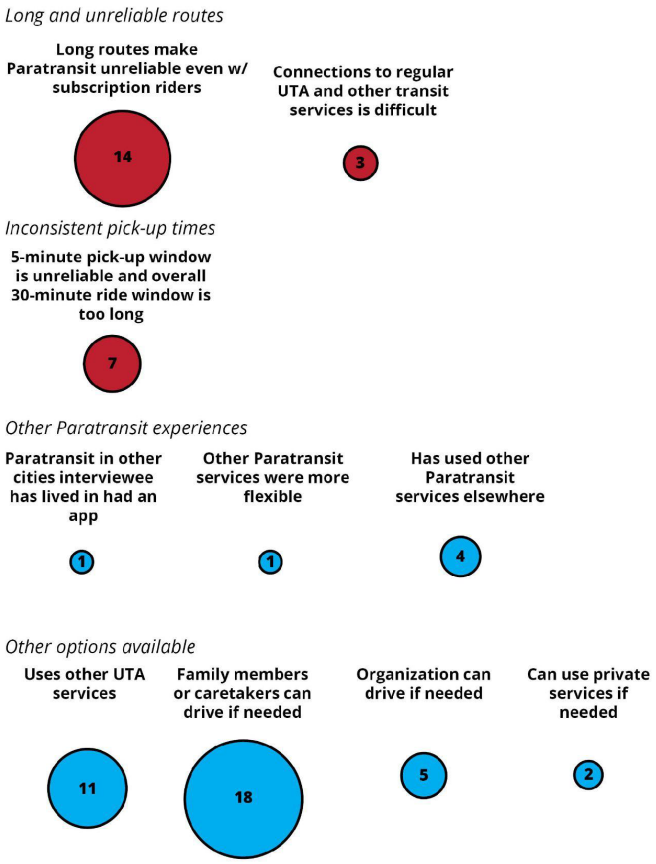
Technological barriers were a sticking point for many users, both current and potential. These challenges included blind or hard-of-seeing individuals having difficulty with signing up for the services on paper; and non-verbal or people with intellectual disabilities having to make phone calls for schedules and arrival. Multiple interviewees raised the idea of expanding technology options to make scheduling, tracking of Paratransit vehicles, and signing up for



Paratransit more accessible and user-friendly overall.

4. The 30-minute pick-up window, the 5-minute call, and long travel times have been frequently reported as challenges.

Another challenge frequently reported by users was the lack of consistency in arrivals



during the 30-minute pick-up window and the 5-minute call. This, coupled with longer routes that interviewees reported sometimes quadrupling normal travel time, dissuades many users from using Paratransit for all their needs. Because of this, many rely on family members and caretakers who may not have the resources available to take them often or comfortably. In related comments, users also advocated better connecting Paratransit to other UTA services, like TRAX or FrontRunner, with timing and payment.

Conclusion

While having different and diverse points of focus, both the Stakeholder and User Interviews point to some common implications and questions for this study's recommendations:

- **Weigh tradeoffs in requirements and service.** Many of the more critical comments in these interviews were requests for increased, higher-level service, which is common for public transit in general. It is clear that all of the desires for more geographic and time flexibility, shorter travel times, and lower costs are all in tension with one another and with UTA's budget and federal requirements for Paratransit. However, in general, it is worth considering the tradeoffs among these to make tweaks in the service for an overall better service.
- **Consider individualizing Paratransit, especially for different disabilities:** Many of the comments, especially with the stakeholders, highlighted the differences in needs among people with different disabilities—physical vs. cognitive; unique needs of communities such as the deafblind; disabilities that may fall through the cracks. Interviewees considered whether there are changes in the system or enhancements that can cater to these differences.
- **Technology is a major area of opportunity, but improvements should stress multiple options.** The low-tech user interface of Paratransit scheduling clearly has its advantages for many users and stakeholders, but there is a clear demand for exploration of higher-tech options to streamline the user experience and address issues such as not knowing how far away a ride is or challenges in changing ride subscriptions. However, if changes are made, it will be important to continue to consider user groups, such as seniors, in creating the widest access to the system.
- **There may be some small changes that could be made to address many of these comments.** Some of the critical comments by stakeholders and users may be able to be addressed by relatively small changes such as increased or individualized communication, managing rider expectations, or coordination among agencies and stakeholders and among UTA services.
- **Consider another layer of regular communication and review of Paratransit with key stakeholders.** The Committee on Accessible Transportation (CAT) provides a forum for addressing the broader transit needs of people with disabilities. However, the CAT appeared to be the only formal link among UTA and Paratransit stakeholders, many of whom were appreciative of the opportunity to speak with the project team about Paratransit, leading to the conclusion that regular

conversations like these could be a good way to monitor the system on an ongoing basis.